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Fifteenth Intergovernmental Meeting on the Action Plan  
for the Caribbean Environment Programme and Twelfth Meeting of the  
Contracting Parties to the Convention for the Protection and  
Development of the Marine Environment of the Wider Caribbean Region

Punta Cana, Dominican Republic, 25-27 October, 2012

**GEF Project Proposal  
Implementing Integrated Land, Water & Wastewater Management in Caribbean SIDS (PIF)**

*For reasons of economy and the environment, Delegates are kindly requested to bring their copies of the Working and Information documents to the Meeting, and not to request additional copies.*

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**PROJECT IDENTIFICATION FORM (PIF) <sup>1</sup>**

**PROJECT TYPE: Full-sized Project**

**TYPE OF TRUST FUND: GEF Trust Fund**

**PART I: PROJECT IDENTIFICATION**

<b>Project Title:</b>	Implementing Integrated Land, Water & Wastewater Management in Caribbean SIDS		
<b>Country(ies):</b>	Antigua & Barbuda; Cuba; Dominican Republic; Jamaica; Saint Kitts & Nevis; Saint Lucia; Saint Vincent & the Grenadines; Grenada, Barbados.	<b>GEF Project ID:<sup>2</sup></b>	4932
<b>GEF Agency(ies):</b>	UNEP UNDP (select) (select)	<b>GEF Agency Project ID:</b>	00858 (UNEP)/4873 (UNDP)
<b>Other Executing Partner(s):</b>	CEHI; CAR/RCU; CAR/RCU LBS Regional Activity Centres – IMA and CIMAB.	<b>Submission Date:</b>	2012-03-28
		<b>Resubmission Date:</b>	2012-04-12
		<b>Resubmission Date:</b>	2012-04-23
<b>GEF Focal Area (s):</b>	Multi-focal: IW – BD – LD	<b>Project Duration(Months)</b>	48
<b>Name of parent program (if applicable):</b>	SFM	<b>Agency Fee:</b>	\$2,044,860
	➤ For SFM/REDD+ <input checked="" type="checkbox"/>		

**A. FOCAL AREA STRATEGY FRAMEWORK<sup>3</sup>:**

Focal Area Objectives	Expected FA Outcomes	Expected FA Outputs	Indicative Financing from relevant TF (GEF/LDCF/SCCF) (\$)	Indicative Cofinancing (\$)
<b>INTERNATIONAL WATERS</b> <b>IW-1</b> Catalyze multi-state cooperation to balance conflicting water uses in trans-boundary surface and groundwater basins while considering climatic variability and change	<b>Outcome 1.1:</b> Implementation of agreed Strategic Action Programmes (SAPs) incorporates transboundary IWRM principles (including environment and groundwater) and policy/ legal/institutional reforms into national/local plans.	Adopted national and local policy and legal reforms.	\$1,825,034	\$10,548,143
	<b>Outcome 1.3:</b> Innovative solutions implemented for reduced pollution, improved water use efficiency, sustainable fisheries with rights-based management, IWRM, water supply protection in SIDS, and aquifer and catchment protection.	Types of technologies and measures implemented in local demonstrations and investments.	\$1,825,034	\$10,530,445
	<b>Outcome 1.4:</b> Climatic variability and change as well as groundwater capacity incorporated into updated SAP to reflect adaptive management.	Enhanced capacity for issues of climatic variability and change and groundwater management.	\$1,825,034	\$10,530,445

<sup>1</sup> It is very important to consult the PIF preparation guidelines when completing this template.

<sup>2</sup> Project ID number will be assigned by GEFSEC.

<sup>3</sup> Refer to the reference attached on the Focal Area Results Framework when filling up the table in item A.

<b>IW-2</b> Catalyze multi-state cooperation to rebuild marine fisheries and reduce pollution of coasts and Large Marine Ecosystems (LMEs) while considering climatic variability and change	<b>Outcome 2.1:</b> Implementation of agreed Strategic Action Programmes (SAPs) incorporates ecosystem-based approaches to management of LMEs, ICM principles, and policy/legal/institutional reforms into national/local plans.	Agreed commitments to sustainable ICM and LME cooperation frameworks;  National and local policy/legal/institutional reforms adopted/ implemented.	\$1,825,034	\$10,530,445
	<b>Outcome 2.3:</b> Innovative solutions implemented for reduced pollution, rebuilding or protecting fish stocks with rights-based management, ICM, habitat (blue forest) restoration/conservation, and port management and produce measureable results.	Technologies and measures implemented in local demonstrations and investments.	\$1,825,034	\$10,530,445
<b>LAND DEGRADATION</b> <b>LD-3 - Integrated Landscapes:</b> Reduce pressures on natural resources from competing land uses in the wider landscape	<b>Outcome 3.1:</b> Enhanced cross-sector enabling environment for integrated landscape management.	<b>Output 3.1</b> Integrated land management plans developed and implemented.	\$795,226	\$4,588,456
	<b>Outcome 3.2:</b> Integrated landscape management practices adopted by local communities.	<b>Output 3.2</b> INRM tools and methodologies developed and tested.	\$795,226	\$4,588,456
	<b>Outcome 3.3:</b> Increased investments in integrated landscape management.	<b>Output 3.4</b> Information on INRM technologies and good practice guidelines disseminated.	\$795,226	\$4,588,456
<b>BIODIVERSITY</b> <b>Objective 2:</b> Mainstream Biodiversity Conservation and Sustainable Use into Production Landscapes, Seascapes and Sectors	<b>Outcome 2.1:</b> Increase in sustainably managed landscapes and seascapes that integrate biodiversity conservation.	<b>Output 2.</b> National and sub-national land-use plans (at least 4) that incorporate biodiversity and ecosystem services valuation.	\$5,525,640	\$31,882,943
<b>SUSTAINABLE FOREST MANAGEMENT</b> <b>SFM-1:</b> Reduce pressures on forest resources and generate sustainable flows of forest ecosystem services	<b>Outcome 1.1:</b> Enhanced enabling environment within the forest sector and across sectors.	<b>Output 1.1:</b> Effectiveness of policies that integrate SFM principles (score as recorded by tracking tool).	\$719,159	\$4,149,549
	<b>Outcome 1.2:</b> Good management practices applied in existing forests	<b>Output 1.2 (b):</b> Enhanced carbon sinks from reduced forest degradation in over 4,500 ha.	\$1,150,655	\$6,639,278
	<b>Outcome 1.3:</b> Good management practices adopted by relevant economic actors.	<b>Output 1.3 (b):</b> Services generated in the wider landscape.	\$1,006,823	\$5,809,368
Project management cost <sup>4</sup>			\$535,473	\$3,089,679
<b>Total project costs</b>			<b>\$20,448,598</b>	<b>\$118,006,108</b>

<sup>4</sup> GEF will finance management cost that is solely linked to GEF financing of the project.

## B. PROJECT FRAMEWORK

**Project Objective:** Implementation of an integrated approach to water, land and ecosystems services management, supported by policy, institutional and legislative reforms, and implementation of effective appropriate technologies to accelerate contribution to global targets on access to safe and reliable water supplies and improved sanitation, and contributing to improved ecosystem functioning in the Caribbean.

Project Component	Grant Type (TA/INV)	Expected Outcomes	Expected Outputs	Indicative Financing from relevant TF (GEF/LDCF/SCCF) (\$)	Indicative Cofinancing (\$)
<b>C1 - Development and Implementation of Integrated Targeted Innovative, climate-change resilient approaches in SLM, IWRM (including WUE), ICZM and maintenance of ecosystem services</b>  <u>Focal Area Breakdown:</u>  BD:\$5,000,564 LD:\$1,860,603 IW:\$1,700,000 -w/ 1M SGP  SFM: \$2,157,478	TA	<b>C1.1</b> Identification and understanding of the present priority needs in participating countries to inform and guide investments in sustainable land water and ecosystem resources management	1. A (rapid) water and land-related diagnostic analysis (using a community participatory approach) for each participating SIDS conducted to inform definition of the innovative interventions (based as appropriate on the outputs and lesson learnt of the GEF-IWCAM project and other relevant interventions).	\$10,718,645  <u>Breakdown funding at outcome level:</u>  C1.1= \$145,780 C1.2= \$7,288,983 C1.3= \$1,457,797 C1.4= \$194,373 C1.5= Cross-cutting C1.6=\$194,373 C1.7=\$437,339 C1.8=\$1,000,000	\$65,188,802
		<b>C1.2</b> Country-specific, SLM, IWRM/WUE, ICZM innovative climate-change adaptive, ecosystem service-sensitive solutions as selected and adopted during the project development phase effectively implemented within the watershed management unit framework.	<b>1. Wastewater management thematic area:</b> Innovative solutions for management of untreated domestic/commercial/industrial effluent that are impacting receiving freshwater and marine ecosystems.  <b>1.1 Investments in innovative domestic and commercial/industrial effluent management systems</b> (i) At least 2 investments by Year 4 in small-scale lower cost appropriate technology wastewater interventions (e.g. artificial wetlands) to address effluent (bacterial and nutrient) loading from intensive settlement areas into the aquatic and marine receiving environment. Hotspot diagnostic methods will guide selection of projects;  <b>1.2 Investments in pollution control within agricultural production systems</b> (i) At least 2 investments by Year 4 in integrated effluent management (incorporating biogas and resource recycling) developed for intensive livestock (swine, poultry) production systems.  <b>2 Water security and improved sanitation thematic area:</b> Innovative solutions for climate change-adaptive water supply augmentation and water use efficiency, water safety and improved sanitation. <b>2.1 Investments in communal rainwater harvesting systems</b> (i) At least 2 RWH systems installed by Year 4 for critically water-stressed communities to augment existing water supply systems to improve access to water by 20% over present availability; (ii) At least 2 investments in water reuse and recycling by Year 4 at a high-consumptive user; (commercial/industrial entity) for replication toward development/strengthening of Code of Practices for water conservation.		

<p><b>2.2 Investments in reducing risks and expanding water availability within water supply systems</b></p> <p>(i) At least 1 investment in priority small to mid-scale water supply systems to expand water access by at least <b>20%</b> and reduce health hazards by Year 4;</p> <p><b>2.3 Investments in improved sanitation</b></p> <p>(i) At least 2 investments in special projects by Year 4 for impacted communities in improved and appropriate sanitation technologies (e.g. EcoSan) where human and ecosystem health is being negatively impacted.</p>		
<p><b>3 Land and watershed restoration and ecosystem resilience thematic area:</b></p> <p>Innovative solutions for erosion control, agricultural non-point source pollution mitigation, land stabilization and runoff/flood control</p> <p><b>3.1 Investments in upland, riparian, coastal ecosystem restoration and rehabilitation through reforestation and agro-forestry systems</b></p> <p>(i) At least 2 investments by Year 4 in upland watershed protection and restoration measures, incorporating soil fertility amelioration, runoff control in agricultural production systems.</p> <p>(ii) At least 1 investment by Year 4 in riparian restoration, particularly along critical reaches of river systems upstream of surface water sources and recharge zones for aquifers and within ecologically degraded areas</p> <p>(iii) At least 1 investment by Year 4 in estuarine and coastal forest/mangrove restoration particularly along vulnerable and high risk areas for storm inundation</p> <p>(iv) SFM resources will augment core interventions within STAR countries i.e. carbon sequestration over 2,200 ha for a total of 150,300 tCO<sub>2</sub> eq/annum – avoided carbon emissions over 2,300ha for total of 64,500 tCO<sub>2</sub> eq/annum.</p> <p><b>3.2 Watershed management plan development - watershed unit-based elements of the National Plan of Action to address LBS of pollution</b></p> <p>(i) At least 4 watershed basin master plans developed for 4 of the participating countries by Year 4. The watershed master plan is the operational template for land use planning/zoning for climate-resilient land and water resource conservation and minimization of LBS pollution from point and non-point sources. NOTE: the interventions outlined above (points 1 to 3) will be implemented in the context of the watershed management plan.</p>		

	<p><b>C1.3</b> National and/or local capacities necessary to implement SLM, IWRM/WUE, ICZM practices and meet water and sanitation MDGs and climate change adaptation requirements strengthened at each participating SIDS</p>	<p>1. At least 60% of professionals in lead agencies and primary CSO stakeholders trained by Year 4 in core technical areas related to development and implementation the interventions toward future replication and mainstreaming within national frameworks.</p>		
	<p><b>C1.4</b> Measurable stress reduction achieved at the project sites, including increased availability and/or access to potable water and/or sustainable sanitation services, increased water use efficiency, reduced surface and groundwater contamination, reduced deforestation and watershed erosion, and reduced coastal pollution and ecosystem degradation.</p>	<p>1. Suite of project-specific IW, LD and BD-related indicators of process, stress reduction, and environmental and socioeconomic status indicators to assist objective assessment and monitoring of impacts of the projects at the site/community level to the national level in the management of land/ecosystems, water resources and wastewater. 2. A monitoring protocol for periodic assessment of identified environmental indicators (ground and surface water quality in particular) at intervention sites with participatory engagement of stakeholders.</p>		
	<p><b>C1.5</b> Social and economic welfare of selected island communities improved through improved water and wastewater management and improved ecosystem services functioning.</p>	<p>1. Reduced adverse health reports from use of unsafe drinking and ambient waters (freshwater and coastal waters); 2. Reduction in risk posed by land degradation to communities (flood and landslide) and farmlands (soil loss and pollution); 3. Increase in revenue generation within target communities through consumptive use of near-shore marine fisheries; 4. Enhancement in economic activity within target communities from eco-touristic activity through ecological restoration; 5. Change in population species abundance and diversity toward prior natural condition of ecosystem.</p>		
	<p><b>C1.6</b> Best practices captured and lessons learned documented from each innovative interventions/solutions project site for dissemination at national, regional and global level (through C4).</p>	<p><b>Best practice guidelines / code of practices for adoption in national regulations for (<i>inter-alia</i>):</b></p> <ul style="list-style-type: none"> <li>➤ Guidelines for small-footprint wastewater treatment systems and artificial wetland wastewater filtration systems;</li> <li>➤ Livestock effluent control protocols;</li> <li>➤ RWH systems installation and management;</li> <li>➤ Water Safety Plans for small community water supply systems;</li> <li>➤ Appropriate sanitation solutions for small coastal communities;</li> <li>➤ Watershed management planning for LBS reduction;</li> <li>➤ Bioengineering application guidelines for slope stabilization, runoff control and managed aquifer recharge;</li> <li>➤ Coastal bio-engineering and reforestation methods.</li> </ul>		

		<p><b>C1.7</b> Replication of strategies developed from each innovative interventions/solutions project and, where support and finances available, implemented</p>	<ol style="list-style-type: none"> <li>1. Technical exchange visits between professionals, civil society organizations to share knowledge directly over the duration of the project;</li> <li>2. At least 2 major technical conferences and symposia convened to showcase the innovative solutions;</li> <li>3. Research articles, books, other awareness materials through various media.</li> </ol>		
		<p><b>C1.8</b> Through the GEF-SGP, communities undertaking small-scale local level interventions to address issues associated with land, water and biodiversity degradation to enhance livelihood opportunities and benefit from improved ecosystem services.</p>	<p>At least 5 small-scale initiatives implemented across the participating countries addressing local challenges associated with water resources, sustainable land management including coastal zone management and ecosystem impairment through the GEF Small Grants Programme.</p>		
<p><b>C2. Strengthening of the SLM, IWRM (and WUE) and ecosystems Monitoring, and Indicators framework</b></p> <p><u>Focal Area Breakdown:</u></p> <p>LD:\$175,025 BD:\$175,025 IW:\$1,200,000</p>	TA	<p><b>C2.1</b> Regional/ national SLM, IWRM/WUE, ICZM and relevant BD indicators and long-term monitoring plan based on the Cartagena Convention-LBS Protocol requirements that are developed and agreed on regional level in close cooperation with other regional SIDS programmes, innovative solutions projects, and supporting global monitoring (i.e. MDGs), gender mainstreaming and nationally linked to national planning and monitoring.</p>	<ol style="list-style-type: none"> <li>1. Adoption into national accounts by Year 4 of IW and LD, and BD-related indicators of process, stress reduction, and environmental and socioeconomic status to monitor improvements in the management of land and water resources and wastewater. These would incorporate indicators to track SLM and IWRM implementation and to assess the short-term and long-term effectiveness of SLM, IWRM/WUE, ICZM and BD strategies in the participating SIDS.</li> </ol>	<p>\$1,550,050</p> <p><u>Breakdown funding at outcome level:</u></p> <p>C2.1=\$930,030 C2.2=\$620,020</p>	\$9,509,930
		<p><b>C2.2</b> Strengthened national &amp; regional capacity for IWRM and land resources (including ecosystems services) monitoring.</p>	<ol style="list-style-type: none"> <li>1. Integrative (across sectors/users) appropriate decision support tools (water information systems, spatial [GIS] databases) by Year 3 to support the policy development and legislative reform processes as well as to provide a measure of success in addressing water quality and water use problems;</li> <li>2. GEF tracking tool as part of annual project implementation review process as well as at inception, midterm and terminal stage.</li> </ol>		

<p><b>C3. Strengthening of the Policy, legislative and institutional reforms and capacity building for SLM, IWRM/WUE and ecosystem services management taking into consideration climate change resilience building.</b></p> <p><u>Focal Area Breakdown:</u></p> <p>LD:\$175,026 BD:\$175,025 IW:\$4,925,169 SFM: \$719,159</p>	TA	<p><b>C3.1</b> Enhanced coordination among relevant sectors for implementation of IWRM/WUE (inclusive of ICZM) plans, the UNCCD Framework National Plans of Action (NAPs) and National Biodiversity Strategy, Action Plans (NBSAPs) and national climate change adaptation strategies.</p>	<p>1. Strengthened National Inter-sectoral Committees (or complementary existing bodies based on the NICs established during the GEF-IWCAM Project) in each participating country (to ensure broad multi-sectoral participation in SLM, IWRM/WUE and ecosystem management planning processes (taking into account institutional and capacity constraints, and the obvious economy of using existing multi-sectoral committees already established under other related national/regional initiatives);</p> <p>2. National reviews of water, wastewater, and land use policy, legislation and institutional arrangements followed by recommendations of necessary reforms and support with drafting legislation.</p>	<p>\$5,994,379</p> <p><u>Breakdown funding at outcome level:</u></p> <p>C3.1=\$599,438 C3.2=\$2,098,032 C3.3=\$2,098,033 C3.4=\$1,198,876</p>	\$30,060,251
		<p><b>C3.2</b> Strengthened policy and legislation for the effective management of land and water resources and wastewater in Caribbean SIDS that are responsive to the challenges of climate change</p>	<p>1. New and/or revised policies and regulations on water supply and sanitation based on the IWRM Roadmaps (and IWRM/WUE strategies where they may exist), National Plans of Action for SLM and ecosystem conservation in all participating countries by Year 4.</p>		
		<p><b>C3.3</b> Harmonization of National IWRM/WUE process inclusive of SLM and ICZM, and ecosystem services maintenance within relevant national development plans drawing on experiences from other regional SIDS and IWRM partnerships supported by a long-term sustainable implementation plan.</p>	<p>1. National Integrated Water Resource Management/ Water Use Efficiency strategies/plans inclusive of ICZM and BD conservation for at least 2 participating countries by Year 4. These strategies or plans would include the identification of long-term sustainability measures for sustainable land and water resource and wastewater use and management, and protection of ecosystem functions and environmental flow (e.g. tariffs, 'beneficiary-pays' and 'polluter-pays' policies, incentives and penalties). They would also address awareness of, and access to, cost-effective and appropriate technologies.</p>		
		<p><b>C3.4</b> Strengthened national and regional institutions and other regional, national and local stakeholders for the protection of land/ecosystem resources, groundwater and surface water resources, the management of acceptable sanitation standards, and wastewater reduction as part of the implementation of IWRM/WUE and associated SLM, ICZM and biodiversity management plans.</p>	<p>1. Programmes for of cross-sectoral sensitization and awareness-raising for all relevant stakeholders on SLM and ecosystem management, IWRM/WUE and ICZM management issues to support mainstreaming and implementation by Year 4 for all participating countries.</p> <p>2. Programmes for training and capacity building to support the implementation of SLM, ecosystems management, IWRM/WUE and ICZM plans throughout the relevant government, private sector agencies and civil society organizations by Year 2 for all participating countries.</p>		



<b>C4. Enhancing knowledge exchange, best-practices, replication and stakeholder involvement</b>  <u>Focal Area Breakdown:</u>  LD:\$175,026 BD:\$175,025 IW:\$1,300,000	TA	<b>C4.1.</b> Strengthened network for collaboration and exchange of best practices and lessons learned between other SIDS projects (Pacific and African regions) particularly related to improved technologies and methods in land and water resources management	1. Suite of best practices and lessons from other SIDS in SLM/ecosystems management, IWRM/WUE/ICZM (i.e. Pacific and African), and other projects, particularly in relation to the selection of more suitable and applicable technologies and land and water resource management/use methodologies, including the adoption of strategies to improve agro-forestry, deal with extreme and chronic climate change induced pressures (drought and floods) and the adoption of more appropriate resource valuation and pricing policies.	\$1,650,051  <u>Breakdown funding at outcome level:</u>  C4.1=\$412,513 C4.2=\$330,010 C4.3=\$577,518 C4.4=\$330,010	\$10,157,446
		<b>C4.2</b> Empowered stakeholder engagement in land and water resources governance through educational initiatives developed and implemented in the region via the application of Community of Practices (COP) and other appropriate mechanisms and tools.	1. Inter-regional SLM and IWRM/WUE/ICZM/BD dialogue process in partnership with the Alliance of Small Island States (AOSIS).  2. A Community of Practice (COP) per SIDS region for vertical as well as horizontal (multi-sectoral) information exchanges as well as debates on the needs and aspirations of people, project deliverables and environmental realities.		
		<b>C4.3</b> Enhanced networking for information sharing, enhanced inter- and intra-regional knowledge sharing and learning;	1. Innovative ICT application and web portal to provide access to training and to increase the flow of information between experts, institutions and networks and coastal players in particular communities, as well as a common pool of knowledge is created and maintained; 2. Project participates in IW Learn activities, such as Biennial conferences, preparation of at least 3 experience notes and a website compatible with IW:LEARN Standards; 3. Hosting of the IWC7; 4. SIDS learning exchange at regional and global; meetings (Global Oceans Forum, GPA, CWWA, CEF etc).		
		<b>C4.4</b> Achieved gender mainstreaming in development/ implementation of SLM/ecosystems management and IWRM/WUE and ICZM, ensuring women's and men's equitable access to and management of safe and adequate water, for domestic supply, sanitation, food security and environmental sustainability.	1. Gender audits and analysis and training.		
<b>Project management Cost<sup>5</sup></b>			\$535,473	\$3,089,679	
<b>Total project costs</b>			<b>\$20,448,598</b>	<b>118,006,108</b>	

<sup>5</sup> Same as footnote #3.

**C. INDICATIVE CO-FINANCING FOR THE PROJECT BY SOURCE AND BY NAME IF AVAILABLE, (\$)**

Sources of Co-financing for baseline project	Name of Co-financier	Type of Co-financing	Amount (\$)
GEF Agency	UNEP	Grant	\$3,000,000
GEF Agency	UNEP	In-kind	\$6,000,000
GEF Agency	UNDP	Grant	\$1,000,000
Other Multilateral Agency (ies)	CEHI (including GIZ funded programs)	In-kind	\$17,100,000
Other Multilateral Agency (ies)	OECS-ESDU -USAID	In-kind	\$6,300,000
Other Multilateral Agency (ies)	Climate Investments Funds	Grant	\$2,580,000
Other Multilateral Agency (ies)	CARICOM-IDRC-Mc Gill	In-kind	\$464,150
Other Multilateral Agency (ies)	CDB	In-kind	\$250,000
National Government	NOAA	In-kind	\$1,500,000
National Governments	National governments of the Caribbean	In-kind	\$72,369,958
Private Sector	Coca Cola	Grant	\$50,000
Private Sector	Sandals	Grant	\$50,000
Other - University	UWI	In-kind	\$4,072,000
Other – network	GWP-Caribbean	In-kind	\$700,000
CSO	TNC	In-kind	\$500,000
CSO	CANARI	Grant	\$2,070,000
<b>Total co-financing</b>			<b>\$118,006,108</b>

#### D. GEF/LDCF/SCCF RESOURCES REQUESTED BY AGENCY, FOCAL AREA AND COUNTRY<sup>1</sup>

GEF Agency	Type of Trust Fund	Focal area	Country name/Global	Project amount (a)	Agency Fee (b) <sup>2</sup>	Total c=a+b
UNEP	GEF TF	Land degradation	Antigua & Barbuda	\$846,000	\$84,600	\$930,600 <sup>6</sup>
UNEP	GEF TF	Biodiversity	Cuba	\$1,800,000	\$180,000	\$1,980,000
UNEP	GEF TF	Biodiversity	Dominican Republic	\$1,060,961 <sup>7</sup>	\$106,096	\$1,167,057 <sup>6</sup>
UNEP	GEF TF	Biodiversity	Jamaica	\$2,745,000	\$274,500	\$3,019,500 <sup>6-8</sup>
UNDP	GEF TF	Land degradation	St. Kitts and Nevis	\$630,000	\$63,000	\$693,000 <sup>6</sup>
UNEP	GEF TF	Land degradation	St. Lucia	\$360,000	\$36,000	\$396,000 <sup>6</sup>
UNEP	GEF TF	Land degradation	St Vincent & the Grenadines	\$630,000	\$63,000	\$693,000 <sup>6</sup>
UNEP	GEF TF	International Waters	All participating SIDS	\$8,000,000	\$800,000	\$8,800,000
UNDP	GEF TF	International Waters	All participating SIDS	\$1,500,000	\$150,000	\$1,650,000
UNEP	GEF TF	Multi-focal Areas (SFM)	Regional	\$2,876,637	\$287,664	\$3,164,301
<b>Total Grant Resources</b>				<b>\$20,448,598</b>	<b>\$2,044,860</b>	<b>\$22,493,458</b>

<sup>1</sup> In case of a single focal area, single country, single GEF Agency project, and single trust fund project, no need to provide information for this table please indicate fees related to this project.

## **PART II: PROJECT JUSTIFICATION**

### **A. DESCRIPTION OF THE CONSISTENCY OF THE PROJECT WITH:**

#### **A.1.1 THE GEF FOCAL AREA/LDCF/SCCF STRATEGIES:**

The project is consistent with the GEF Focal Area Strategies for International Waters (IW), Land Degradation (LD) and Biodiversity (BD) including Sustainable Forest Management (SFM) with each focal area actions complementing one another as to promote a truly integrated approach to the management of natural resources. The project seeks to focus on innovation, catalyzing implementation of cutting-edge technologies and policy reforms with the objective of enabling replication and scaling-up, and enhancing engagement of beneficiary community stakeholders and the private sector.

The project will contribute to the removal of barriers that hinder the implementation of sustainable solutions that intend to address the interrelated problems of land degradation and loss of biodiversity and ecosystem services in consideration of the urgent need to accelerate climate change resilience. This will be achieved within the SIDS approach for improved land and water (freshwater and coastal waters) resources management including ecosystems governance; that is, the 'ridge to reef' or the integrating watershed and coastal areas management ("IWCAM") approach.

**International Waters (IW) Strategy:** The project seeks to enhance the management of watershed areas, groundwater aquifers, and coastal and marine ecosystems within the Caribbean Sea basin and will address **Strategic Objective 1**, to catalyze multi-state cooperation to balance conflicting water uses in trans-boundary surface and groundwater basins while considering climatic variability and change and **Strategic Objective 2**, to catalyze multi-state cooperation to rebuild

<sup>6</sup> Ten percent fee has been calculated on the project amount, hence some total amounts (fee + project amount) are slightly lower than on LoEs

<sup>7</sup> DR 40 cents as shown on LoE were removed for ease of calculation hence showing a slight difference from LoE.

<sup>8</sup> In addition to the above footnote comment 7, the total amount also differs from the LoE given that 125K of PPG resources has not been considered in this table.

marine fisheries and reduce pollution of coasts and Large Marine Ecosystems (LMEs) while considering climatic variability and change. **At the strategic outcome level** the project will contribute to regional advancements in management and protection of the Caribbean Sea terrestrial and marine resources consistent with the Cartagena Convention framework, and build on mainstreaming of IWRM and ecosystems management principles advanced under the GEF-IWCAM Project into national development frameworks. The project will implement innovative solutions for reduced pollution, improved fresh and coastal water resources management in consideration of the challenges imposed by climate change and climate variability (Components 1 to 4).

A critical element in the strategy that will be addressed is strengthening the capacity and effectiveness of state agencies, community and civil society stakeholders in management of national waters and executing harmonized actions as it pertains to transboundary waters, specifically the Caribbean Sea, which is regarded as a shared resource within the definition of trans-boundary waters.

**Land Degradation (LD) Strategy:** The project seeks to contribute towards arresting and reversing current trends in land degradation which in the Caribbean, is aggravated by deforestation and unsustainable land management particularly in the more mountainous areas and other landscapes with fragile soils that are vulnerable to degradation. The project will address **Strategic Objective 3** *to reduce pressures on natural resources from competing land uses in the wider landscape*. **At the strategic outcome level**, the project will enhance the cross-sectoral enabling environment for integrated landscape management. This aspect continues to present a significant barrier in Caribbean SIDS where unsustainable land management and land use conflicts impact on ecosystem functioning, and the integrity of water resources in particular. The project will foster the promotion of integrated landscape management practices adopted by local communities within the framework of the Small Grants Programme and build on lessons learned from community-based interventions from the GEF-IWCAM Project demonstration initiatives in the Caribbean. The project will target investments in integrated watershed management through forest rehabilitation and conservation of degraded upland areas, riparian corridors and coastal/mangrove ecosystems (Component 1 predominantly but also components 2 to 4). It should be noted that the approaches advanced under the project will be consistent with the **Sustainable Forest management/REDD-Plus Strategy** where management regimes that strengthen conservation, sustainable management of forests and enhancement of forest carbon stocks will be supported. The project has been designed to secure multiple environmental benefits and to strengthen the spatial planning framework, including the development of regulatory and institutional framework and the necessary tools to promote SFM and SLM in the Caribbean island of Antigua & Barbuda, Cuba, the Dominican Republic, Jamaica, St Kitts and Nevis, St Lucia and St Vincent and the Grenadines (Components 1 & 3) The project will support the sustainable land management interventions articulated under the UNCCD National Plans of Action (NAPs) of the participating Caribbean SIDS.

**Biodiversity (BD) Strategy:** The project will promote the conservation and sustainable use of biodiversity and the maintenance of ecosystem goods and services through the improved management of ecologically sensitive areas of interest (particularly those outside protected area systems) towards long-term positive impacts in representation of terrestrial and marine ecosystems, and threatened species. The project will address **Strategic Objective 2** *to mainstream biodiversity conservation and sustainable use into production landscapes, seascapes and sectors*. **At the strategic outcome level** the project will seek to increase and expand sustainably managed landscapes and seascapes that integrate biodiversity conservation (Component 1 predominantly but also components 2 to 4). In the project a significant underpinning will be maintaining economic livelihoods that are closely tied to maintenance of healthy ecosystems through improved pollution control measures. In the Caribbean the fisheries and the tourism sectors are heavily reliant on the integrity of healthy terrestrial and marine ecosystems. Watershed protection and sustainable forest management for water-related ecosystem services will translate seamlessly to biodiversity conservation.

**A.1.2. FOR PROJECTS FUNDED FROM LDCF/SCCF: THE LDCF/SCCF ELIGIBILITY CRITERIA AND PRIORITIES: N/A**

**A.2. NATIONAL STRATEGIES AND PLANS OR REPORTS AND ASSESSMENTS UNDER RELEVANT CONVENTIONS, IF APPLICABLE, I.E. NAPAS, NAPS, NBSAPs, NATIONAL COMMUNICATIONS, TNAs, NIPs, PRSPs, NPFE, ETC.:**

**UN Convention to Combat Desertification and Land Degradation (UNCCD) - National actions:** Cuba (2003), Dominica Republic (2007), Grenada (2006), Jamaica (2002) and Saint Kitts and Nevis (2007) have completed their National Plans of Action (date of submission in brackets); the remaining countries have prepared draft NAPs and are in the process of finalizing. In the main, the majority of the countries cite similar issues in their NAPs with respect to land degradation with noted concerns associated with historical land denudation for agriculture, timber and fuel wood and the more recent challenges associated with encroachment of other types of land use activities in previously forested areas with the influx of point and non-point source pollution. The pattern of land degradation and the impacts, particularly in terms of alteration of the hydrologic functioning of watersheds with uncontrolled runoff and heightened flood risks is a common theme. Actions under the NAPs all address these main concerns, including issues such as overgrazing and combating the spread of alien invasive species and particularly in the drier islands, degradation associated with forest fires. Most countries in the Caribbean have submitted their 4<sup>th</sup> Reporting and review cycle under the Performance Review and Assessment of Implementation System (PRAIS). The profile of the countries are available the UNCCD Convention site at

[http://www.unccd.int/Lists/SiteDocumentLibrary/Regions/LAC/CountryProfilesLACRegion\\_29-11-2011.doc](http://www.unccd.int/Lists/SiteDocumentLibrary/Regions/LAC/CountryProfilesLACRegion_29-11-2011.doc)

The NAPs are generally consistent with national development frameworks, strategies and policies pertaining to land management where formal pronouncements or policies exist. In most of the countries policies relating to land management and sustainable forestry management are only enshrined in laws and regulations that tend not to allow for integrative resource management across sectors. Most countries have town and country planning legislation which tends to be applied to control building infrastructure development rather than integrated land planning inclusive of agricultural and forestry development. Cuba however, has developed several policy instruments related to land management. Grenada has an approved forest management policy while that of Jamaica remains as a draft. Countries are at varying stages in stakeholder discussions toward eventual formulation of integrative land management including (forest management and water resource management policies) that will give sustained effect to their NAPs.

The project will contribute to achievement of the key objectives of the NAPs and their mainstreaming and will advance the institutional and policy reforms to support SLM and SFM in close consideration of IWRM.

**UN Convention on Biological Diversity (CBD) – National Actions:** The majority of Caribbean countries have developed National Biodiversity Strategies and Action Plans (NBSAPs) and are at various stages of implementation. Cuba is the only country in the region to have revised its NBSAP (2006). Saint Lucia's NBSAP is under revision. Other countries with completed NBSAPs (pending revision) include Barbados, Grenada, Jamaica, Saint Kitts and Nevis and Saint Vincent and the Grenadines. The Dominican Republic is developing its first NBSAP. A draft NBSAP for Antigua and Barbuda is available. The NBSAPs all speak to conservation of national biological resources with key actions that include capacity building and appropriate institutional and legislative reforms, expansion and protection of terrestrial and marine protected areas, institution of self-financing mechanisms for biodiversity conservation and ensuring equitable sharing of benefits. Management of alien invasive species is also featured in many of the NBSAPs. The majority of the countries have completed their 4th National Communications. Full details of the country profiles and the NBSAPs are available at the convention website at <http://www.cbd.int/countries/>

The NBSAPs are generally congruent with the national forestry, wildlife and where applicable, fisheries legislation; where these legislative instruments tend to speak to the main elements in the NBSAPs, many of these laws are outdated relative to the challenges that are currently faced in terms of threats to biodiversity. National biodiversity polices on

their own tend to be lacking for most of the Caribbean countries. Cuba has an overarching policy framework that covers environmental management in general and includes biodiversity considerations. The Barbados Fisheries Management Plan and the Integrated Coastal Management Plan have elements of the NBSAP integrated within these instruments. Countries are at varying stages in stakeholder discussions toward eventual formulation of integrative natural resources management policies that will include critical elements of biodiversity conservation, which tend to be closely linked to sustainable resource use through fisheries and forestry management plans.

The project will contribute to achievement of the key objectives of the NBSAPs within the frameworks of sustainable water (including pollution control in sensitive ecosystems), land and forest management.

#### **UN Framework Convention on Climate Change (UNFCCC) – National actions:**

Although this project will not be funded through the Climate Change focal area, it is worth noting that all of the Caribbean countries have submitted their 1<sup>st</sup> and/or 2<sup>nd</sup> National Communication (NC) and that these NCs generally all speak to the challenges associated with the smallness of the island landmasses and vulnerability to sea level rise, the threat of more severe hurricanes and more intense drought episodes. The impacts on water resources occupy a central theme in the context of rainfall patterns and drought events, in terms of the effects on the agricultural sector, domestic water supply and biodiversity. With more intense hurricanes and rainfall events, the issues of flooding and land degradation through accelerated soil erosion is of concern. In the context of climate and land/water resources management, urgent interventions are needed to make ecosystems and the services they provide more resilient through on-ground investments, changes in policy and institutional frameworks, adjustments in the incentives regimes and capacity building.

**The Convention for the Protection and Development of the Marine Environment in the Wider Caribbean Region – Cartagena Convention:** This Convention, adopted in 1983 and entered into force in 1986 is an umbrella agreement for the protection and development of the marine environment of the Caribbean Sea, and provides the legal framework for cooperative regional and national actions within in the wider Caribbean region. The Convention is supplemented by three Protocols now in force; (1) the Protocol Concerning Co-operation in Combating Oil Spills in the Wider Caribbean Region, (2) the Protocol Concerning Specially Protected Areas and Wildlife (SPAW) in the Wider Caribbean Region and (3) the Protocol Concerning Pollution from Land-Based Sources and Activities (LBS Protocol). All three protocols which are highly complementary with the Rio Conventions, will contribute to achievement of the project objectives.

It should be noted however, in the majority of the countries, effective implementation of the strategies and plans outlined under the frameworks of the conventions require realignment and reform of the national policy, legislative and institutional arrangements. In short, these strategies and plans need to be mainstreamed into national development frameworks. These frameworks typically include national development strategies, land use and land development policies, plans and associated regulations, water supply/management laws, forestry and wildlife laws and laws concerning pollution, public and environmental health. In the majority of the countries the enabling environment does not facilitate integrated management approaches as advocated under the convention obligations. These are important barriers that persist, that the project will seek to address.

## **B. PROJECT OVERVIEW:**

### **B.1. DESCRIBE THE BASELINE PROJECT AND THE PROBLEM THAT IT SEEKS TO ADDRESS:**

#### **Background**

**Overview:** The Caribbean Region lies between the North and South American sub-continent between 10° and 23° north latitude and 59° and 80° west longitude with countries within the region bordering the Caribbean Sea. Cuba has the largest area of 110,900 square kilometers, followed by Hispaniola<sup>9</sup> with an area of 76,480 km<sup>2</sup> and Jamaica with a land area of 10,831 km<sup>2</sup>. The islands of the Eastern Caribbean are substantially smaller, the largest of these (not including the French overseas Departments of Martinique and Guadeloupe) being Dominica at 750 km<sup>2</sup> while St. Kitts and Nevis is the smallest independent state with a land area of 269 km<sup>2</sup>. The Caribbean islands have

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<sup>9</sup> Made up of the Dominican Republic which has a total area of 48,700 square kilometers, and Haiti with an area of 27,800 square kilometers

varying geological and topographical characteristics ranging from predominantly low-lying coral limestone formations (e.g. Barbados) to mixed volcanic and sedimentary limestone formations (e.g. the larger islands such as Jamaica and Cuba), to rugged volcanic formations where the elevations exceed 900 metres. The interior landscapes of Jamaica and Hispaniola are also very rugged with high mountain ranges of over 2,000 metres in elevation.

The populations of the Caribbean countries vary mainly in relation to size<sup>10</sup>; Cuba - 11.3 million, Dominican Republic – 9.5 million; Jamaica – 2.7 million; Barbados – 273,000; Saint Lucia – 160,000; Saint Kitts & Nevis - 49,300. The larger islands of the Greater Antilles have relatively higher population densities with more diversified economies with a high proportion dedicated to farming and other agricultural practices. The smaller eastern Caribbean (Lesser Antilles) islands are characterized by relatively lower population densities and agriculture and other small-scale industries confined to the narrow coastal zones. Caribbean economies have been gradually transitioning away from agriculture, which was the traditional mainstay, to manufacturing, tourism and financial services. The tourism sector, contributes approximately 20% of overall foreign exchange earnings, and about 12% of total employment<sup>11</sup> although in several of the smaller countries, tourism contributions by far exceeds that of other sectors. It should be noted that however the tourism sector is just as vulnerable as the agricultural sector to external shocks; heightening this vulnerability is the threat posed by climate change and associated sea level rise, compounded by increased hurricane occurrence and damaging storm surges.

The following provides a brief account of the status of water, land, forest and biodiversity resources of the region.

**Fresh and coastal water resources:** Rainfall across the Caribbean varies where annual averages range from less than 1,000mm for the smallest low-lying islands to in excess of 3,000mm in high interior elevations of some countries. Based on precipitation inputs and population the Internal Renewable Water Resources (IRWR) varies widely between countries. The FAO estimates IWRWs of 301, 846 and 3,649 m<sup>3</sup>/capita/annum for Barbados, Antigua & Barbuda and Jamaica respectively. A country is considered as water scarce at water availabilities of less than 1,000 m<sup>3</sup>/capita/annum. **In consideration of the foregoing many of the Caribbean islands rank among the most water scarce SIDS in the world.** Countries heavily reliant on groundwater resources include Antigua & Barbuda and Barbados. The larger countries including Cuba, The Dominican Republic and Jamaica rely on a mix of ground and surface water sources, depending on the geology of local water supply regions. In the majority of the smaller islands surface water abstractions (rivers and reservoirs) dominate. Rain water harvesting is practiced in some of the smaller islands and in islands where topographic constraints limit access to the public distribution system in some locations. Desalination technologies although expensive in terms of production costs are seeing increased application in the more water-stressed Caribbean countries. In the larger countries significant volumes of water are used in irrigation while in the smaller countries the larger proportion of water abstracted is allocated to drinking water supply. Although in many countries access to potable water supplies have reached the MDG targets, there are serious challenges in the quantity and distribution of water in many communities over the course of the year. Access to improved sanitation remains a challenge for lower-income communities.

The Caribbean Sea constitutes the coastal waters of the region and is the economic basis for the tourism and fisheries sectors in the region. The importance of protection of marine ecosystems of the Caribbean, particularly coral reefs cannot be understated. The World Resources Institute (WRI) recently estimated that coral reefs currently provide upwards of US\$100 million per year in benefits associated with tourism, US\$18 to 33 million in shoreline protection, and another US\$1million in benefits to fisheries. The Caribbean Sea Ecosystem (CARSEA) Assessment (UWI and the Cropper Foundation, 2006) noted that relative to its size, the Caribbean's population is more dependent on income from tourism than that of any other part of the world, in 2004 contributing US\$28.4 billion to GDP.

**Land, forest and biodiversity (terrestrial and marine) resources:** The small-size of Caribbean island land masses mean that relatively large percentages of landscapes are under some type of human-altered land use pattern. The

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<sup>10</sup> 2005 data sourced from databases from the Caribbean Development Bank the World Bank and the United Nations Development Programme; referenced in the Caribbean Position Paper to the 5<sup>th</sup> World Water Forum

<sup>11</sup> World Travel and Tourism Council. 2007

coastal zones are most intensively developed for urban, commercial and industrial uses with loss of native ecosystems most notably as mangroves that once occupied these areas. Agriculture generally dominates the lower to mid-elevation watershed reaches with significant alternation of natural forest ecosystems with consequent soil erosion and excessive sedimentation of watercourses. In recent years there has been a contraction in the agricultural sectors in many of the Caribbean countries, triggered by the dismantling of preferential trade agreements in the European Union for traditional commodities, namely bananas and sugar. This has led in many countries, to dramatic changes in land use from agriculture to urban land use types, further hastening the fragmentation of forest and agro-forest ecosystems with implications for maintenance of biodiversity resources.

The majority of countries in the region possess residual forest cover that is now mainly confined to the more inaccessible interior regions of the countries. According to the FAO the average extent of forest cover approximates 25% (based 2000 data) of total land mass area; although on a country basis this varies widely. Forest cover ranges from 30% in the case of Jamaica to 21% for Cuba to less than 15% for the islands of Saint Kitts and Nevis, Saint Lucia and Saint Vincent and the Grenadines. Recent empirical evidence suggests that the rates of deforestation associated with agriculture are slowing down although land use conversions are seeing more intensive impacts associated with other uses (e.g. mining and quarrying). In most countries residual forest are often fragmented or oriented along narrow ridgelines depending on the pattern of historic land development that has taken place around the margins of forests.

According to the Conservation International (CI), the Caribbean Islands 'hotspot' support exceptionally diverse ecosystems. The Hotspot has dozens of highly threatened species, and also remarkable for the diminutive nature of much of its fauna, boasting the world's smallest bird (the tiny bee hummingbird, endemic to Cuba) and smallest snake found on St. Lucia. The contains some 6,550 endemic plant and just over 200 threatened endemic bird, reptile and amphibian species. BirdLife International (2010) notes that of 11,000 plant species, 72% are endemic; 95% of the reptile and 100% of the amphibian species are endemic to the Caribbean. According to CI, of the original extent of hotspot vegetation of 229,549 km<sup>2</sup>, only some 22,955 km<sup>2</sup> remains. Birdlife International (2010) adds that roughly 8 to 35% of species within the major marine taxa found globally are endemic to the Caribbean hotspot.

In consideration of the foregoing, the following is an account of the challenges faced by Caribbean countries in respect of water, land and biodiversity resources management that are of relevance to the project.

### **Water, land, forest and biodiversity challenges**

Caribbean Small Island Developing States (SIDS) are facing multiple threats of land and water resource degradation, depletion of biological resources and compromised ecosystem functioning due to intensive developmental pressures on very fragile environments. The concept of "Ridge to Reef" management or the integrating watershed and coastal areas management (IWCAM) approach for natural resources in small islands provides an underpinning for addressing the multiple challenges of sustainable water, land (including forests) and biodiversity management and conservation.

Given the spatial and temporal scarcity of water resources in many countries of the Caribbean, in terms of supply reliability, numerous communities suffer from inadequate availability of clean drinking water and are faced with associated health problems due to unsanitary drinking water, lack of access to sustainable sanitation services, and poor wastewater treatment. Investments by water utilities are hampered by issues of under-capitalization and there is a lack of appropriate governance arrangements to facilitate coordinated management of the water resource along with service provision. IWRM approaches, while becoming better appreciated in the Caribbean have not seen the level of evolution required to make significant changes in mainstreamed inter-sectoral governance for water and sanitation. Water source availability in terms of quality and quantity of the resource has been negatively impacted by poor land management practices.



Expanding development pressures have seen the dramatic increase in the generation of land-based sources of marine pollution from a wide range of point and non-point sources. UNEP (TR-52 report, 2010<sup>12</sup>) estimates that as much as 60 % of wastewater entering the Caribbean Sea is currently untreated. The Pan American Health Organization (PAHO) estimated in 2001 that 51.5 % of households in the Caribbean Region lacked sewer connections of any kind (many rely on on-site septic/soak away systems); only 17 % of households were connected to acceptable collection and treatment systems. Anecdotal evidence suggests that these figures have improved somewhat since 2001 but the overall situation remains inadequate. Effluents from heavy industries, manufacturing, oil and gas and minerals exploitation are also having marked impacts within the land and near-shore marine environments. The receiving coastal environments off most industrial/commercial centres and commercial ports in many countries have become anoxic. Pollution and land degradation impacts are being manifested in the near-shore coastal environment resulting in loss of productivity of near-shore fisheries with an increase in catch effort from having to exploit deeper water resources, degraded beaches and recreational areas with adverse health risks and compromised quality of touristic investments.

The conversion of lands from forest to non-forest land cover types and unsustainable land management practices is the main trigger for accelerated erosion. The World Resources Institute (WRI) project Reefs at Risk noted that sediment loading presented a very significant risk to the health and productivity of reefs across the Caribbean region. UNEP/GPA (2006) noted that for the Wider Caribbean (countries surrounding the Caribbean Sea) annual sediment loads are estimated at 1 gigatonne, or approximately 12% of global sediment input from rivers. In the UNEP TR-52 report on pollution in the Caribbean, estimates of total suspended solids (TSS) from the Eastern Caribbean region stood at 2,600 t/yr of (with most contributed from Trinidad and Tobago) to 7 million tons per year for the North Eastern region that included Cuba, Jamaica and the Dominican Republic. TR-52 cites nutriment load rates as follows; for the Eastern Caribbean region the annual estimated discharge of total nitrogen of 200 t.yr<sup>-1</sup> and total phosphorous of 40 t.yr<sup>-1</sup>. For the North Eastern region that includes the large islands, total annual nitrogen discharges were estimated at 16,500 t.yr<sup>-1</sup> with total phosphorus loads at 5,600 t.yr<sup>-1</sup>.

Conversions of forest and coastal/aquatic ecosystems have triggered loss of species richness and diversity in all the countries of the Caribbean. Species with high specialization within niche habitats such as those in high-elevation forest ecosystems have been severely impacted in terms of population numbers and distribution. Parrots of the *Amazona* genus, which are endemic to individual islands are of note, along with particular species of amphibians and reptiles. The West Indian Manatee, once widespread across the Caribbean has greatly diminished in range due to loss of coastal mangrove habitat. CI notes that based on reliable records, at least 38 Caribbean species have been declared extinct. This underscores the global importance of Caribbean ecosystems and the need for critical conservation interventions.

Climate change is a significant driver which may accelerate the significant rate of degradation that is being imposed on the sensitive ecosystems in Caribbean SIDS. Under increased sea surface temperatures (SSTs), the frequency of high intensity hurricanes and rainfall events is a likely outcome that will worsen land degradation and ecosystem impairment, and further accelerate the deterioration of marine ecosystems through pollutant and sediment mobilization. With higher rainfall intensities the risk of flooding will be increased along with risk of loss of life and property. Climate change experts estimate that annual rainfall accumulations across much of the Caribbean could be potentially reduced by as much as one third, presenting serious challenges for surface and ground water aquifer recharge threatening water security in many in areas where the water supply infrastructure is already compromised on account of operational challenges, or where demand simply outstrips supply.

### **Capacity and mainstreaming challenges**

Efforts to reduce the negative environmental impacts, protect watersheds, and conserve endangered biodiversity while supporting traditional livelihoods have been frustrated by generally weak policy, regulatory and institutional

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<sup>12</sup> See report online at: <http://www.cep.unep.org/publications-and-resources/technical-reports/technical-reports>

environments. Human and financial resources availability within responsible state agencies remain constrained and compounded by limited economic incentives that will support private sector engagement to invest in greener, cleaner production processes.

Although there have been many regional and national-level relevant project-driven interventions that target land and water resources degradation and biodiversity conservation, long-term sustainability has been hampered due to inadequacies within the wider policy and institutional environments that do not adequately allow for mainstreaming of these interventions beyond the realm of “project-driven, site-specific” actions. By extension, development of new mechanisms for sustainable financing of sustainable land and water management and biodiversity conservation interventions outside of traditional government budgets remains limited. The UNDP Portfolio Project for Capacity Building and Mainstreaming for SLM in SIDS and LDCs which is wrapping up implementation in most of the Caribbean countries (having commenced in 2007), has advanced the SLM agenda (with water resource and biodiversity considerations) but additional support is required.

Pursuant to the UNCCD and CBD conventions most Caribbean countries have developed National Action Plans (NAPs) and National Biodiversity Strategy and Action Plans (NBSAPs) that lay out strategic actions in the management of land (in the context of land degradation) and biodiversity resources respectively. Strategic plans for water resources remain poorly defined however, although under the GEF-IWCAM Project, governments were assisted in undertaking the initial steps in formulation of Integrated Water Resources Management policies and plans. Jamaica is the only country that has a national overarching plan for management of its water resources. **It needs to be underscored that the majority of countries have laws, albeit outdated in many cases, related to protection of forests and wildlife, use of water and discharge of harmful effluents into the environment (mainly associated with public health legislation) but the incorporation of these laws within integrated policies and strategic plans is for the most part lacking. Few countries have mainstreamed action plans as obligated under the UN conventions within national development frameworks, and the present legislative instruments have not been appropriately aligned to give effect to implementation of the national action plans.** Notwithstanding, in all countries there is some level of intervention typically by state forestry agencies, agricultural and environmental management ministries in assisting farmers and forest users in practicing improved land, water and biodiversity management.

#### **BASELINE: Country profiles:**

In the response to the challenges outlined above, the following are policy and institutional responses and priority interventions by the lead national agencies in water, land, forest and biodiversity management that have been deemed of priority in the various countries.

**Antigua and Barbuda:** The lead agency is the Ministry of Agriculture, Lands, Housing and the Environment. The Water Division of the Antigua Public Utilities Authority (APUA) has statutory responsibility for water resource management although this role is limited largely to water abstraction. The main areas of focus include raising public awareness, strengthening drought management capabilities, improving land, coastal zone and watershed management through effective land use policy. Fire-cycle land degradation within the Body Ponds watershed in particular, remains a priority issue along with pollution of surface water bodies that have been encroached by development. The problem of aggravated land degradation and pollution (solid waste and various liquid waste and nutrients) of water bodies has been identified as a significant issue in water supply security and maintenance of the quality of coastal ecosystems on Antigua. The estimated annual value of government contributions to land and water resource management through the lead Ministry is US\$500,000. This is being complemented by externally and internally financed programmes and activities.

**Barbados:** The lead agency is the Ministry of Environment, water Resources and Drainage. The Barbados Water Authority has statutory responsibility for management of water resources although this role is more related to water supply and sewerage services provision. The main national focus is on management of land use activities in reduction of the aquifer contamination and nutrient loading to the coastal zone marine environment. The Scotland District continues to be an area of focus for land degradation abatement, although land resource conservation

measures have been expanded over other areas of the country. Groundwater contamination remains a very critical concern given the expanding land uses over the vulnerable and highly transmissible water supply aquifers. Land-based contamination of marine environments and coastal ecosystems along the heavily urbanized western coast is of concern. The Environmental Protection Department and the Coastal Zone Management Unit contribute significantly to regulation, policy development and monitoring of the status of the environment. Financial support for these programmes is from a mix of national and externally-financed sources.

**Cuba:** The lead agencies include the Ministry of Science, Technology and the Environment (CITMA), the Ministry of Planning and the Ministry of Agriculture. Areas of priority focus include mainstreaming of land degradation strategies into policies and legal instruments and the strengthening of institutions to promote sustainable resource use. There are interventions to increase of soil productivity and arresting degradation of ecosystems with transfer of appropriate technologies in affected or sensitive areas. The country is also investing in watershed and ecosystems resilience to climate change supported through the strengthening of early warning systems and research. Coastal zone and coastal biodiversity resources management remains of high priority. Several national plans of action have been or are being formulated that include the National Reforestation Program, the National Program for Land Conservation and Improvement, and the National System of Protected Areas. Financial support for these programmes is from a mix of national and externally-financed sources.

**Dominican Republic:** The lead agency is the Ministry of Environment and Natural Resources. Priority management interventions are oriented around reduction of land degradation and pollution of coastal ecosystems and improvements in water supply availability. Among the major initiatives is the national Quisqueya Verde Program within the Ministry of Environment's "Green Border" initiative to promote conservation initiatives along the border zone with Haiti. The shared Artibonito Watershed with Haiti has been the focus of management interventions. Priority has also been accorded to the development of the conceptual framework for integrative land water and biodiversity management through mainstreaming into national strategies, with the development of supportive plans and programs including a national program of action, the appropriate institutional framework and an effective monitoring mechanism. Financial support for these programmes is from a mix of national and externally-financed sources.

**Grenada:** The lead agencies are the Ministry of Agriculture through the Land Use Division and the Forestry Department. The National Water and Sewerage Authority has statutory responsibility for water resources management although a recent water resources policy is recommending that responsibility be placed under the purview of a dedicated water resources agency. Main issues of concern in the country include unsustainable land management associated with agricultural development and degradation of lowland coastal forests. Intensive grazing is of concern in the sister islands of Carriacou and Petit Martinique. Hurricane Ivan of 2004 severely impacted agriculture and forests within upper watershed areas and recovery has been of major focus in the years since then. Financial support for these programmes is from a mix of national and externally-financed sources.

**Jamaica:** The lead agency is the National Environment and Planning Agency (NEPA) with integrative responsibility, supported by the Forestry Department and the Water Resources Agency in areas of biodiversity and water resources management respectively. Areas of management focus continue to be on abatement of land degradation in cultivated areas and pollution control particularly from urban and industrialized environments that pose threats to surface and ground waters and the off-shore marine environment. Priorities include the development of early warning systems for drought, and formulation of strategies to lessen or to mitigate its negative consequences in terms of land degradation. The national forest policy and drought policy remain in draft, pending adoption. The water resources master plan for the country is under review. The estimated annual state contributions in related programme areas amount to US\$800,000, including additional resources from national and externally financed programmes and initiatives of up to US\$5 million per annum.

**Saint Kitts and Nevis:** The lead agencies are the Ministry of Environment and Ministry of Agriculture on Saint Kitts. On Nevis lead responsibility falls to the Nevis Island Administration. Current management focus is on solid conservation on former sugar production lands that are being converted into alternative uses, both agricultural and non-agricultural. Other priorities include the fostering of sustainable agricultural practices, consideration of use of biofuels (from sugar) for energy applications, the strengthening of the institutional and legal frameworks and capabilities for assessment and monitoring of water, land and biodiversity resources. The estimated annual

recurrent investment for related programmes is just over US\$107,000. This is being complemented by externally and internally financed programmes and activities.

**Saint Lucia:** The lead agencies are the Ministry of Agriculture, The Forestry Department and the Water Resources Management Agency. Management focus remains on land degradation rehabilitation within agricultural peripheral areas around the forest reserve, particularly within water catchment areas that are sources for drinking water supply. Pollution and sedimentation of coastal ecosystems is of concern. Post-Hurricane Tomas (2010) rehabilitation efforts continue to address the significant watershed degradation associated with landslides and heavy siltation of rivers. The annual recurrent investments in terms of direct costs for forestry management inclusive of watershed interventions approximate US\$74,000. This is being complemented by externally and internally financed programmes and activities.

**Saint Vincent and the Grenadines:** The lead agencies are the Ministry of Agriculture and the Forestry Department. The St. Vincent Electricity Services Ltd was at one time mandated to contribute to forestry conservation efforts related to the watershed services associated with hydropower generation. The Central Water and Sewerage Authority has statutory responsibility for water resources management although role is limited to water abstraction. Management interventions are focused on land stabilization within steep agricultural zones. Of concern are the land degradation from illicit cultivations on the slopes of the La Soufriere. Approximate annual costs for investments are just over US\$220,000. This is being complemented by externally and internally financed programmes and activities.

#### **BASELINE: Regional actions**

The following is the actions at the regional level that are of relevance to this project. It should be noted that this account is not exhaustive. Section B6 should be referenced for further information.

**Caribbean regional coordination:** Caribbean SIDS, at governmental agency and professional levels have been engaged in various regional water resources management initiatives facilitated by entities such as the Global Water Partnership–Caribbean, the Caribbean Water and Wastewater Association, the Caribbean Water & Sewerage Association, the Caribbean Environmental Health Institute and the University of the West Indies. While these interventions brought some level of donor support to advancement of the IWRM framework inclusive of land and ecosystem services considerations to the region, the GEF-IWCAM project brought significant resources to augment these efforts. After the closure of the GEF-IWCAM project, participating SIDS likely benefit from further donor support in water, land and ecosystem resources management many of which have climate change resiliency underpinnings. Some of these interventions are elaborated in Section B6. At the Caribbean Community (CARICOM) level efforts being made to activate a CARICOM Consortium on Water, designed to coordinate the activities of regional organizations working IWRM and related areas.

**The Cartagena Convention – a framework for pollution control and protection of the Caribbean Sea ecosystem:** The Convention for the Protection and Development of the Marine Environment in the Wider Caribbean Region (Cartagena Convention) focuses on land-based sources of pollution, dumping of wastes at sea, pollution from ships, biodiversity protection, and airborne pollution among other things. To deal comprehensively with these issues, three protocols have been developed: the Oil Spills Protocol; the Specially Protected Areas & Wildlife (SPAW) Protocol; and the Protocol Concerning Pollution from Land-Based Sources and Activities (or LBS Protocol). The Cartagena Convention is the only legally binding agreement for the protection of the Caribbean Sea and entered into force in 1986. The LBS Protocol is of particular significance to this project as it will establish the basis for countries setting and working toward realizing harmonized targets for effluent emissions in protection of freshwater and coastal ecosystems services. The LBS Protocol augments the provisions of the SPAW Protocol in protection of biodiversity.

**Contributions from the regional GEF-IWCAM Project:** The Project focused on the strengthening of participating country capacity to implement the integrated approach to the management of watersheds and coastal areas (IWCAM) or “ridge to reef” through regional activities, enhancing country capacity to plan and manage their aquatic resources and ecosystems on a sustainable basis, equipping them with a series of tools to support reforms in policy,

legislation and institutional arrangements in support of the IWCAM approach, but also through a series of discrete demonstration projects to test cost and feasibility of reducing the impacts of land based sources of pollution on freshwater and coastal environments. The project however only catalysed the beginning of a policy and institutional reform process. A number of new IWCAM policies and plans have been or are being drafted and adopted by countries such as to name a few; the Land and Sea Use Plan in Andros, the IWCAM-WWAM policy adopted country-wide in Jamaica, the new Water Act in Saint Kitts, an NGO created for the management of the Fond d'Or basin in Saint Lucia, the private – public partnership that will continue remediation efforts in the Haina Basin in the Dominica Republic, and the IWRM Road Maps adopted by various countries (Antigua, Barbados, Grenada, St. Lucia). These achievements represent signals of emerging change processes but require follow-up for long term impact.

**Land and sustainable forestry management:** Although the UNCCD Convention advocates the development of sub-regional action plans (SRAPs) to facilitate technical exchange and advancement of harmonized regional-level interventions for sustainable forest management and land degradation, these efforts remain in the planning stages.

In summary, notwithstanding the various interventions both at the regional and national levels there still is need to address the shortcomings faced by countries in the development and realization of effective integrated approaches to water, land, forestry and biodiversity resource management.

In response to the challenges and priorities identified both at the national and regional levels the following are the main features under each focal area to be addressed by this project:

- 1) International Waters:** The project will seek to build on the efforts under the GEF-IWCAM project in strengthening and mainstreaming water resources management in national development frameworks through IWRM planning capacity building. Access to water and adequate sanitation remain among pressing needs in some of the more disadvantaged communities particularly in consideration of stressed state of water resources in some of the countries and continued support is needed in investments and upscaling appropriate water security and sanitation solutions. Innovative solutions for wastewater management will be implemented in participating countries. The project will also advance the capacity of the countries in meeting the obligations under the LBS Protocol which provides a harmonized Caribbean regional framework for addressing pollution based on national and regional needs and priorities and promotes the establishment of pollution standards and schedules for implementation. Within the LBS Protocol framework, national plans of actions (NPAs) for minimization of land-based pollution are promoted, where in the spatial context, translate to watershed management plans that consider water resources protection, along with the protection of land, forest and biodiversity and other ecosystem services. Watershed master plans inclusive of sustainable forestry management, land degradation abatement and biodiversity conservation will be prepared in participating countries that will provide the basis for replication. As applicable, elements of integrated coastal zone management will also be incorporated. Indicators for monitoring and assessment for water resources will be further elaborated and mainstreamed into national accounts.
- 2) Land Degradation and Sustainable Forest Management (REDD+):** The project will advance the strategic actions specified in the country National Action Plans under the UNCCD Convention. These will include landscape management interventions particularly related to reforestation and forest resources conservation within degraded upland watershed areas, along riparian corridors and select areas along the coastal zone, particularly in coastal forests and mangroves. Of priority are watershed units and river segments that present significant risk in terms of erosion and sediment loading with increased landslide and flooding, impairment of surface waters for drinking water abstraction and excessive siltation of marine environments. In some countries land degradation has resulted in the encroachment of grasses with high fire risk that leads to accelerated soil erosion and impacts to adjacent ecosystems. On-ground interventions will all incorporate the principles of SFM with the realization of global benefits of avoided carbon emissions in consideration of Land Use, Land-Use Change and Forestry (LULUCF). The interventions will be contributed as best practices in the formulation of management plans as outlined in IW focal area above. Indicators for monitoring and assessment for land degradation will be further elaborated and mainstreamed into national accounts.

**3) Biodiversity:** The project will realize the conservation and protection of biodiversity resources through investments within select priority watershed and coastal areas in the participating countries. Project interventions will build on those efforts under the IW and LD focal areas using the watershed and adjacent coastal area as the management unit of intervention. Actions will include rehabilitation of degraded forest ecosystems and landscapes of significant biodiversity importance including measures to support management regimes to protect existing terrestrial and marine biodiversity reserves that are under threat with focus on management and minimization of user conflicts. The interventions will be contributed as best practices in the formulation of watershed and coastal area management master plans as outlined in IW focal area above. Indicators for monitoring and assessment for biodiversity will be further elaborated and mainstreamed into national accounts.

**B. 2. INCREMENTAL /ADDITIONAL COST REASONING: DESCRIBE THE INCREMENTAL (GEF TRUST FUND) OR ADDITIONAL (LDCF/SCCF) ACTIVITIES REQUESTED FOR GEF/LDCF/SCCF FINANCING AND THE ASSOCIATED GLOBAL ENVIRONMENTAL BENEFITS (GEF TRUST FUND) OR ASSOCIATED ADAPTATION BENEFITS (LDCF/SCCF) TO BE DELIVERED BY THE PROJECT:**

The project's objective is to realize the implementation of an integrated approach to water, land and ecosystems services management, supported by policy, institutional and legislative reforms, and implementation of effective appropriate technologies to accelerate contribution to global targets on access to safe and reliable water supplies and improved sanitation, and contributing to improved ecosystem functioning in the Caribbean.

The GEF investment will contribute to removal of the barriers that continue to persist in many of the countries of the Caribbean in implementing sustainable solutions to realize multiple global environmental benefits through arresting water, land and biodiversity resources degradation. These solutions will be supported by the contributions of the project to accelerate and strengthen the needed policy, regulatory and institutional reforms along with empowered community engagement and private sector involvement. Tangible outcomes will include increased reliability of safe water and sanitation particularly to disadvantaged communities, reduction in nutrient and other pollutant loads into fresh and coastal waters, reduction in the volume of soil lost and sediment fluxes into rivers and marine environments, positive changes in the state of ecosystems in terms of species richness and abundance and contributions to global carbon sequestration.

It should be noted that the GEF-IWCAM Project, not only, initiated a process of capacity building to implement an integrated approach to the management of watersheds and coastal areas (IWCAM) through regional activities to plan and manage aquatic resources and ecosystems on a sustainable basis, developing toolkits to support IWCAM reforms in policy, legislation and institutional arrangements, but also implemented pilot demonstration interventions aimed at improving the quality of fresh and coastal water resource for up-scaling and replication. These interventions included:

- **wastewater management and pollution control** in Elizabeth Harbour, Exuma, the Bahamas; McKinnons Pond, Antigua and Barbuda; the AuLeon community (Fond d'Or watershed), St. Lucia;
- **integrative land use (good agricultural practices and sustainable land management), waste management and pollution control** in the Cienfuegos Watershed and coastal area, Cuba; in the Drivers River Watershed in East-Central Portland in Jamaica; and in the Courland Watershed and Buccoo Reef, Tobago;
- **industrial pollution control** in the lower Haina River basin, Dominican Republic;
- **water security:** within the Basseterre Valley aquifer (and eventual designation as a national park), St. Kitts and Nevis; on Union Island, St. Vincent and the Grenadines; Carriacou, Grenada, and within Fond d'Or watershed communities, St. Lucia.

In spite of these recent useful contributions, additional support is needed to drive toward reforms and wider implementation/replication of these solutions through joint programming with the International Waters, Land Degradation and Biodiversity Focal Areas, within the integrated watershed and coastal area management (IWCAM), or "ridge to reef" framework. Joint programming will also be sought to increase forest and tree cover and

implement landscape approaches for terrestrial and marine protected area management. This effort will also take into account opportunities to develop country-level or regional programmatic approaches for NRM where they are likely to trigger transformational changes in the agriculture and forest sectors.

**Component 1. Development of targeted innovative solutions in SLM (and sustainable forest management) and ecosystem services conservation, IWRM/WUE and ICZM** will implement and/or build upon a series of IWRM/WUE/ICZM and BD baseline activities within each of the SIDS that will provide real, on-the-ground solutions to common problems. The interventions under this component are expected to catalyze follow-up interventions following project completion in to the long term in other parts of the countries based on replicable approaches and technologies supported by strong stakeholder buy-in. The expectation is that these experiences will be transferred to other parts of the Caribbean and ideally throughout other SIDS regions on a global basis, as appropriate. Expected outputs listed in the Project Framework will individually and collectively address surface, groundwater resource and coastal waters protection, land/ecosystem and watershed management including sustainable forestry management, wastewater management and its impacts on the coastal zone, and water supply, water use efficiency and sanitation. Some of **the indicative interventions** will include:

1. Installation of constructed wetlands and natural system enhancement/augmentation for maintenance of ecosystems services (e.g. mangrove protection and enhancement)
2. Expansion of managed aquifer recharge through rainwater runoff diversion for groundwater recharge (enhancement of aquifer storage and protection) and landscape conservation (erosion mitigation);
3. Interventions in integrated watershed management, sustainable forestry management and coastal zone management (incl. land use and coastal area protection benefits and reduction in soil erosion);
4. Interventions in agro-forestry in support of soil conservation and watershed protection within agricultural areas;
5. Investments in coastal reforestation and protection to minimize land degradation in the coastal zone and assist with shoreline armoring against erosion;
6. Investment in appropriate sanitation and effluent (including from livestock operations)
7. management systems (e.g. use of Ecosan, effluent diversion to wetland treatment, bio-digestion for biogas, on-site waste treatment with reuse of composted materials as fertilizer);
8. Expansion of water security and promotion of water safety particularly for vulnerable communities through application of rainwater harvesting and improved storage;
9. Investments in water use efficiency improvements in partnerships with the private sector (e.g. hotel industry; manufacturing industry) utilizing both technological & economic instruments;

Subject to a fully participatory project development process in consultation with the participating countries and other stakeholders during the PPG, elements of the indicative actions listed above will be incorporated into the preliminary/provisional national project interventions described below.

**Antigua and Barbuda:** The project will include multi-focal area watershed management interventions that address land degradation over approximately 120 hectares that are important for conservation of important biodiversity and water supply. The upland areas are of major influence to the eastern coral reef system which is one of the more extensive and complex reef system and seagrass, inclusive of mangroves found in the Caribbean and the northwestern marine area which is also of significance with substantial mangrove areas, freshwater wetlands containing important vegetation alliances and associations. These coastal areas are highly important for local fisheries and touristic investments. Areas identified for management interventions will include the **Body Ponds watershed** that is located within the central region of Antigua and which faces continual degradation due to the dominance of lemon grass within the watershed which burns frequently. Body Ponds has an excellent linked wetland system of significant size and serving as high quality wildlife habitat and is characterized by several vegetation alliances and associations of special concern. The area has been the focus of prior management interventions but more support is required particularly in restorative sustainable forestry management interventions that will serve to arrest land degradation and enhance biodiversity within the area.

The project will develop an appropriate management framework toward the establishment of riparian buffer zones and water protection areas to curb encroachment of non-compatible land uses within water gathering grounds and vulnerable aquifers. The project will undertake reforestation of critical areas associated with fire-degradation in landscapes around Body Ponds and along major watercourses that flow toward the important coastal ecosystems along the north and northwest of the country. Landscape rehabilitation will include reinstatement of naturally occurring species thereby conserving the original integrity of the ecosystems in as far as practical. Institutional strengthening in enhancing sustainability of the interventions will be undertaken. The project will also seek to integrate sustainable agriculture systems through controlled grazing and introduction of appropriate cropping systems that enhances soil amelioration. Control of land degradation will positively impact the ecosystems of the eastern coastal reef system and the northwest marine area through reduced sedimentation and pollutant influx into these coastal zones. It should be noted that the project fits well into the National Biodiversity Strategy and Action Plan including amongst others many of the targets of goals 1, 4, 5, 7 & 8. Estimated potential carbon sequestration through SFM (over the project duration) is 21,200 tCO<sub>2</sub> eq.

**Cuba:** The proposed project interventions within the biodiversity focal area, which will focus on two areas of the country, in the **area east of Havana and Santiago de Cuba**. These areas are threatened generally with increased urbanization and encroachment from farming and other land conversion activities including livestock grazing with resultant impacts to biodiversity. The Santiago de Cuba area, located to the southeastern part of the country is characterized by dry forests and cactus scrublands with relatively high levels of floral and faunal endemism as is typical for the country in general. The Baconao Park which is classified as a biosphere reserve is located within the general area. A similar ecotype dominates the area east of Havana.

The project will continue to strengthen the national legal frameworks, institutional capacities and technical cooperation between agencies including capacity building in improved biodiversity management and conservation of ecosystems (particularly marine) considering climate variability and climate change. This will be done in the context of the objectives as set out under the National Biodiversity Strategy and Action Plan including amongst others Objectives 4, 5, 7, & 8 and their related targets. Specifically, the project will seek to assess the condition and quality of biodiversity resources in the upland and coastal areas of the target sites, and assess the threats to biodiversity that include those associated with land conversion, and importantly, from contamination (sediment and nutrients) of waterways and the receiving coastal environments in the area east of Havana and Santiago de Cuba. The project will target sustainable land management interventions associated with improved agro-forestry and sustainable forestry interventions over approximately 1,500 hectares aimed at reducing land degradation and resulting in improvement in ecosystems functioning. At both sites capacity will be built within local community, farmer and fisher groups in contributing to monitoring efforts, engaging in improved agronomic practices and improved fishing practices that will reduce pressures on off-shore reef environments. The expected results will also include the identification of institutional gaps and priorities for research and conservation of marine ecosystems, the implementation of practical actions with community participation to reduce the levels of contamination and the updating of inventories of biodiversity and major threats within critical watersheds in the target areas. The estimated potential carbon sequestration through SFM (over the project duration) is 198,400 tCO<sub>2</sub> eq.

**Dominican Republic:** The **Rio Higuamo** basin and associated watershed is a major, 1,086 km<sup>2</sup> drainage basin, draining an area in the eastern part of the country upstream of the city of San Pedro de Macorís on the Caribbean Sea. The drainage basin represents an important socio-economic asset and as such has been heavily developed particularly in the lower reaches of the watershed with a range of agricultural, commercial and industrial activities that has placed pressure on the biodiversity, land and water resources. Efforts are being made to establish a coalition of private sector companies within the river basin to address the pressures that industry is exerting on the resources of the river basin.

The project interventions as currently recommended by the country, will seek to implement mechanisms to enhance ecosystem resilience and conserve biodiversity within the watershed. This will include interventions to reduce pollution sources that are negatively impacting ecosystems within the Higuamo River basin and within its coastal



area. Specific components to be undertaken include the identification of pollution sources, followed by survey assessments to determine the types of existing practices for effluent discharge, disposal of solid waste and release of air emissions. Long-term solutions for reducing point sources of pollution will be oriented around implementation of cleaner production mechanisms by industries in particular those that directly impact the Rio Higuamo basin. Measures for abatement of land degradation and enhancement and restoration of ecosystems will also be implemented over approximately 1,000 hectares with key focus on upland areas that are being rapidly eroded and along the main watercourses. As part of the project characterization of groundwater within the adjacent Rio Haina watershed is being proposed. Estimated potential carbon sequestration through SFM (over the project duration) is 154,300 tCO<sub>2</sub> eq. This will be done in the context of the objectives as set out under the National Biodiversity Strategy and Action Plan including amongst others Objectives 1,2,4,5 & 8, and their related targets.

The project outputs include a mechanism for the identification and management of critical species and ecosystems in the river basin, restoration of degraded forest and upland and riparian landscapes, and the development of a sustainable mechanisms for monitoring industrial discharges and emissions, linked to the process of developing policies and legislation and heightened public awareness among the public and private sector on watershed management issues, sustainable funding mechanism to aid the monitoring of environmental quality.

**Jamaica: The Negril Great Morass** which is located in the Negril Environmental Protection Area (EPA) covers an area which spans the Lucea River, South-Negril/Orange and part New Savannah River WMUs. The EPA represents one of the largest natural coastal wetland eco-systems in the Caribbean region that supports internationally significant species and high species endemism. Biodiversity within the EPA is under threat due to historical disruption of the hydrodynamics of the area, increased coastal developments and unsustainable agricultural practices. Increasingly observed are low water levels, loss of plant and animal communities, more frequent bush fires, an abundance of alien invasive species, peat subsidence, sedimentation, and nutrient enrichment. These operate as pressure sources on native biodiversity species and ecosystem services. More recently, impacts from bush fires threaten to erode the tourism economy and degrade human health. The project, mainly within the biodiversity focal area, aims to promote conservation of wetland biodiversity, restoration of wetland ecosystem services, and sustainable use of watershed and wetland biological resources over approximately 1,500 hectares.

The project goals will be achieved through: 1) addressing and restoring the hydrological regime of the WMUs; 2) enhancing and re-establishing natural ecosystem (watershed and coastal wetland) habitats to conserve biodiversity; 3) implementing aspects of the Watersheds Area Management Mechanism to address conflicts that degrade ecosystem functions and to promote sustainable use; 4) implementing and strengthening institutional arrangements to ensure the long term sustainability of wetland biological resources; and 5) capacity building to address monitoring and enforcement issues within the Negril EPA. Estimated potential carbon sequestration through SFM (over the project duration) is 380,200 tCO<sub>2</sub> eq.

**Saint Kitts and Nevis:** On **St. Kitts**, the project interventions which will be mainly aligned along the land degradation focal area, will be distributed over approximately 40 hectares across **various locations** on the island that were formally under intensive sugarcane cultivation by the state-run St. Kitts Sugar Manufacturing Corporation. With the closure of the sugar industry in 2005 under declining revenues that made it no longer economically viable to produce sugar for export, the government is now exploring alternative development options for these lands that include alternative agriculture cropping and development for settlement and commercial purposes. The soils of mainland Saint Kitts are highly friable and prone to rapid erosion if not managed sustainably. The Basseterre Aquifer, the principle water source for the city of Basseterre and environs and subject of study under the GEF-IWCAM Project culminating in the its declaration as a National Park, requires continued management interventions to reduce the potential influx from domestic, commercial and industrial entities that discharge wastewater into the ambient environment. On **Nevis** issues related to land management are associated with over-grazing and the influx of quarrying operations that are leading to land and ecosystem degradation.

The interventions under the project will seek to install land, forest and water conservation measures within critical locations that have been identified as potential degradation hotspots. Wastewater management controls will be

installed for pollutant hotspots to reduce potential for contamination of surface and groundwater. Estimated potential carbon sequestration through SFM (over the project duration) is 9,300 tCO<sub>2</sub> eq.

**Saint Lucia:** The area for project focus will be the **Soufriere Watershed** (mainly under the land degradation focal area). This watershed lies within the western portion of the island and drains into the Soufriere Bay. The watershed includes part of the Pitons World Heritage Site and the town of Soufriere and its surroundings which are considered the tourism epicenter of the country. Land degradation has been particularly acute in this part of the country especially in the upper reaches of the watershed that had been cleared of forest vegetation and replaced with temporary crops that have resulted in destabilization of slopes and large scale landslides that have resulted in loss of lives. The watershed area has seen dramatic increases in the level of urbanization in the lower watershed reaches and with it the increase in the influx of pollutants (sediment and nutrients) into the near shore marine environment. Rearing of livestock and direct wastewater discharge is a significant problem. Observational measurements and sampling of the sediment deposits on the offshore reefs have shown steady increases over time with loss in the potential for revenue receipts from dive tourism with impacts to near-shore coastal fisheries as a result of changes in the marine biodiversity.

The project seeks to make interventions in appropriate waste control measures associated with urban and agricultural investments and sustainable forestry management particularly in addressing the land degradation over approximately 160 hectares that persists in the watershed upper reaches and along the banks of the main river and its tributaries. Carbon sequestration potential for active reforestation and conservation forest management will be assessed. Estimated potential carbon sequestration through SFM (over the project duration) is 47,900 tCO<sub>2</sub> eq.

**Saint Vincent and the Grenadines:** The **Cumberland watershed** is located within the north Leeward area of mainland Saint Vincent. The watershed is of national significance as it is a multiple-use watershed with services that includes drinking water supply and hydropower generation, and is a reserve for biodiversity with timber species of economic importance and endemic wildlife species that include the endangered St Vincent Parrot. Land degradation has led to problems with pollution of surface waters and excessive sediment loading that is predisposing the lower reaches of the river to flooding with the possibility of impacts to offshore marine ecosystems.

The project, mainly under the land degradation focal area, will target reforestation and conservation forestry interventions approximately 160 hectares to reduce the rate of upland degradation and restore the integrity of riparian ecosystems along particular river reaches. Drinking water source catchments will be targeted for specific management interventions to reduce the rate of sedimentation within these catchments so as to maintain water supply reliability to communities within the water service area. Estimated potential carbon sequestration through SFM (over the project duration) is 48,300 tCO<sub>2</sub> eq.

Additional details for the on-the-ground and innovative solutions will be designed based on the country specific conditions and needs and through consultative processes among stakeholders in each SIDS during the project preparation phase.

Further, the project will realize the formulation of at least four watershed basin master plans for 4 of the participating countries by the end of project. These master plans will represent the operational template for land use planning/zoning for climate-resilient land, biodiversity and water resource conservation and minimization of LBS pollution from point and non-point sources. The watershed master plans will incorporate elements of ecosystem valuation in order to consider most feasible options for intervention actions and the national interventions will be guided by the master plan. The processes applied in the development of these plans will be upscaled and replicated in the other countries.

**Component 2. National (SLM, ICZM, IWRM/WUE & BD) Monitoring, and Indicators Framework** will develop further and apply regional/national IW related indicators (process, stress and environmental/socioeconomic status), many of which have been identified and agreed during previous projects, as part of the monitoring and evaluation plan, not just for the project but for the long term mechanism to assess the effectiveness of SLM, ICZM, IWRM/WUE &

related BD interventions in the participating SIDS. These will be developed in close cooperation with the other partner SIDS projects (Pacific and African), will be in line with internationally recommended indicators for ICZM, IWRM and related initiatives (e.g. GWP, GIWA, UN-Water, TWAP, UNEP GPA) and will provide the mechanism to track project impact on the implementation of the LBS Protocol (to the Cartagena Convention), UNFCCC, UNCCD, CBD and WSSD targets.

In addition to water and sanitation (within the IWRM/WUE, ICZM frameworks) the project will also strengthen the scientific basis for effective monitoring and assessment in the LD and related BD Focal Areas, including tools and indicators for multi-scale application, by developing improved methods for multi-scale assessment and monitoring of land degradation trends, and for impact monitoring of GEF investment in SLM and ecosystem services maintenance. This will build on existing GEF-financed initiatives to fully integrate methods for establishment of project baselines, identifying measureable indicators, and subsequent monitoring.

The monitoring mechanism developed will include climate considerations and gender mainstreaming in participating SIDS. Feedback will be incorporated from other regional and nationally related projects developing indicators and monitoring and evaluation plans and regional agreements (i.e. GEF-IWCAM and TDA and SAP process in CLME, among others) and will work closely with all national stakeholders to ensure that the monitoring and data analysis approach developed feeds in from existing research and databases, to support national priorities, plans and strategies, and where capacity gaps are identified, that appropriate capacity is built upon for the long term monitoring of IWRM/WUE, ICZM and SLM and ecosystem services provision. As such this component also works closely with the on-the ground interventions and innovative solutions developed and implemented under Component 1 and previous demonstration projects (such as from GEF-IWCAM), the policy, legislation and institutional reforms and capacity building activities under Component 3, and the knowledge, exchange, best practices and stakeholder involvement of Component 4.

**Component 3. Policy, legislative and institutional reforms and capacity building for IWRM/WUE (including ICZM), SLM and related ecosystem services maintenance** addresses the policy, legislation, institutions and capacity needs to enable Caribbean SIDS to develop and implement IWRM/WUE plans within supportive ICZM, SLM and BD (including SFM) management frameworks and enhance the enabling environment for the long term achievement of the Millennium Development Goals and WSSD targets. Policy, legislation and institutional reforms will be developed and adopted that address the lack of financing and policy and the lack of coordination among sectors identified in many of the participating countries. Particular focus will be (in parallel with the innovative project interventions) on policy tools and guidelines for the protection of surface and ground-waters (also from extreme events, drought and projected climate change), for sustainable sanitation, and for sustainable land management by exploring best practices and lessons learned generated under Component 4. Tools and guidelines will be adopted for the future sustainable use of water resources and sustainable forest management, waste-water collection and treatment solutions, protection from drought, whilst ensuring efficient use of water for the economic requirements of each participating country (i.e. household, urban, industry and agriculture), and alternative solutions for more effective uses of water and promoting sustainable development and reduced poverty. This will require coordination amongst the relevant national sectors and the strengthening and expansion of National Inter-sectoral Committees (NICs) in the countries, the harmonization with national plans, and the implementation of programmes of cross-sectoral sensitization and awareness raising, along with training and capacity building in the identified national institutions and private sector (closely linked to the Stakeholder Involvement Plan under Component 4).

**Component 4. Knowledge Exchange, best-practices, replication and stakeholder involvement** will aim to provide support, from a global to a local level for countries to have the capacity, tools and knowledge to meet WSSD and MDG targets on IWRM, water supply and sanitation, supported by the SLM, ICZM and BD conservation frameworks. The project will utilize existing networks for IWRM, ICZM, SLM and BD management within SIDS and other regions, to identify and share best practices and lessons particularly in relation to the selection of more suitable and applicable technologies and practices and water resource management/use methodologies. Inter-regional dialogue will be established with other global initiatives (e.g. in partnership with AOSIS), and learning exchange study visits and/or twinning activities between SIDS or groups of participating SIDS and other regions will be established (in particular the African and Pacific SIDS projects). At the national level, consultative dialogue as the mechanism for

engaging, integrating and empowering NICs in IWRM/WUE, ICZM and SLM will be established. A stakeholder identification and analysis process will be utilized in planning and preparation for consultative dialogues to ensure that engagement of relevant policy, sectoral, local community and expertise (scientific, technical, etc.) is representative and inclusive. This may include the implementation of approaches to increase stakeholder involvement with an emphasis on the community level, which will ensure input from local communities and associated structures (for instance fishers associations, farmers associations, NGOs, CBOs and local government), provide an information sharing platform where such input can be augmented, discussed and debated, and ‘top down, bottom up’ information sharing can be promoted and developed. Most importantly, a multi-sectoral Community of Practice (CoP) could be established along the vertical axis of society that includes all stakeholders, including different levels of government, in discussing issues, solutions and generally sharing information and insight, through dialogue between civil society and government. The project will participate and contribute to GEF IW:LEARN (portfolio learning), and will also contribute to regional and global meetings such as the Global Oceans Forum, GPA, CWWA, CEF and the World Water Forum, amongst others. Finally gender mainstreaming will be achieved in the development/ implementation of IWRM/WUE, ICZM and SLM across all Components (indicators identified in Component 2) to include gender audits, analysis and training<sup>13</sup> to ensure women’s and men’s equitable access to and management of safe and adequate water, for domestic supply, sanitation, food security and environmental sustainability. The project will participate and also contribute to the recently approved GEF MSP “A Global Initiative on Landscapes for People, Food and Nature” that is promoting broader adoption and more effective use of landscape level sustainable land management as an integrated approach to managing agricultural landscapes that address the full set of needs.

## INSTITUTIONAL ARRANGEMENTS

UNEP and UNDP as GEF agencies, will have responsibility as **Implementation Agencies** for the project in respect to overall project supervision to ensure consistency with GEF, UNEP and UNDP policies and procedures, and will provide guidance on linkages with other UNEP, UNDP and GEF-funded projects and activities.

Comprehensive project management will be achieved through various coordination, supervisory and advisory mechanisms, at both the regional and national levels.

At the regional level the following mechanisms are anticipated:

- **Inter-Agency Co-ordination Group:** comprising implementing and executing agencies and the core project management personnel;
- **Project Steering Committee:** comprising technical/focal point representatives of the participating countries, the implementing and executing agencies and the core project management personnel;
- **Project Advisory Group:** comprising regional and international specialists in the thematic areas of the project, the implementing and executing agencies and the core project management personnel. Members may be co-opted as needed;
- **CEHI and CAR/RCU as Executing Agencies:** provision of support to project management and technical backstopping on all aspects of the project execution.

At the national level the following entities are anticipated:

- **National Executing Agencies and associated Project Management Units (Component 1):** comprising the core governmental agencies and partners and personnel recruited to implement national interventions;
- **National Inter-sectoral Committees:** comprising of state and non-state stakeholders with interest in advancement of the overall project objectives.

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<sup>13</sup> In possible partnership with the Gender and Water Alliance.

## **INCREMENTAL REASONING**

The business-as usual scenario is not a good one for any of the Caribbean SIDS, with limited manpower and natural resource constraints. Without any incremental intervention and assistance, the baseline as described above can be expected to remain stagnant and the situation with respect to a truly integrated and multi-faceted approach to the management of natural resources including sustainable and efficient water use and wastewater management, SLM and BD/ecosystem services will predictably deteriorate. The GEF increment will attempt to promote this integrated approach to natural resources management which would otherwise remain very ad-hoc, piecemeal and uninformed with ecosystems services not being warranted priority. The project will build on nascent processes and will aim to address the thematic areas that remain of critical concern through reforms in policy, legislation and institutions; improvements to institutional and human resources capacity; development of more effective and coordinated inter-sectoral management approaches; identification, implementation and up-scaling of more appropriate (to small island) solutions/technologies and strategies; adoption of 'extreme-event' strategies; better information collection and handling to inform policy makers and guide legislative development. GEF assistance would be focused on the production (where necessary) and implementation of IWRM plans consistent with the WSSD targets in order to establish or support regional frameworks (such as the CARICOM Consortium on Water) for the needed reforms and investments. Assistance will also focus on mainstreaming ICZM, SLM, sustainable forest management and ecosystem servicing into such plans and integrating same within the national frameworks. It is anticipated that this project will also focus greater attention on empowerment of CSOs, the private sector with the capacity to leverage additional resources to address continued mainstreaming and capacity building needs for IWRM/WUE, SLM, ICZM and BD management in the medium to long term national investment plans.

In promoting an integrated approach to NRM, the project will strengthen land/forest management processes and biodiversity conservation in order to secure the flow of multiple ecosystems services, including an increase in C stocks and maintain ecosystem connectivity. The GEF investment will counter natural dry and humid forest loss in production landscapes by implementing SFM and SLM model actions in the Caribbean.

## **GLOBAL ENVIRONMENTAL BENEFITS**

Global environmental benefits would accrue through a regional approach to promote exchange of best practices in addressing priority concerns associated with water, land (forestry and coastal zone) and biodiversity within the trans-boundary system known as the Caribbean Sea. The global environmental benefits relate to preservation of the uniqueness of the resources of the Caribbean Sea basin, an area with relatively high biological diversity both in terms of terrestrial and marine ecosystems, contributions to global carbon sequestration and contribution to the well-being of populations in the region through economic development and social security. Specifically, through supporting implementation of the LBS Protocol, which also supports the GPA, the project will address a common threat of pollution of the regional sea, which is linked to the global oceans agenda. Through its support of Agenda 21 Chapters 17 and 18 as well as the MDGs and WSSD targets, the project contributes to human well being and poverty eradication by sustaining water-related and dependent livelihoods, securing food sources, promoting equitable access to water, and reducing water-related health risks in addition to resolving and preventing water-related use conflicts in water bodies. Further, the project will contribute to knowledge-sharing on mainstreaming SLM in SIDS and contribute to the global pool of knowledge on ecosystem function. Conservation of forest lands will contribute to global efforts aimed at conservation of biodiversity and enhancement of carbon sequestration in mitigation of the impacts of global warming on climate change.

Global benefits would be generated indirectly as the enabling environment leads to projects with on-the-ground investments in improved practices, and directly as sustainable land and ecosystems management is taken into consideration at the policy and institutional levels through better policies and incorporation of those concepts into the national development framework. The integrated and multi-faceted approach to natural resources management within a ridge to reef (or IWCAM) framework in the small island context serves to demonstrate how resources can be effectively utilised to realize added benefits across several thematic areas (water, LD and BD) as

opposed to discrete sectoral interventions. This is also particularly useful given the resource poor circumstances that exist in many SIDS regions.

Specific Global Environmental Benefits under the GEF International Waters, Land Degradation (including SFM) and Biodiversity focal areas can be summarized as follows:

- **International waters:** enhancement of resilience of fragile coastal and marine ecosystems and contribution to maintenance of reliant livelihoods dependant on freshwater and coastal resources through reduced nutrient loading and other harmful pollutant discharges;
- **Land degradation (and SFM):** Improved provision of agro-ecosystem and forest ecosystem goods and services with contributions to carbon sequestration through sustainable forest management, reduced upland erosion rates and reduced rates of sedimentation from watersheds into receiving environments.
  - In terms of carbon benefits the following is estimated based on project interventions around sustainable forest/watershed management:
    - Carbon sequestration:** through restoration and reforestation over an estimated 2,200 hectares of forests within the countries within upper watersheds, riparian zones and coastal ecotypes including mangroves over the project duration: **Total of 150,300 tCO<sub>2</sub> eq** (based on the FAO estimate of biomass of 280 tonnes/ha applying a conversion factor of 3.76 with variable growth rates estimated between 17 and 20 tonnes/ha)
    - Avoided carbon emissions:** Through in-situ conservation and sustainable forest management over 2300 hectares in upland watersheds areas and riparian zones that are typically dominated by broad-leaved wet forests, secondary woodlands, dry forest types and mangroves: **Total of 64,500 tCO<sub>2</sub> eq** (based on the FAO estimate of biomass of 280 tonnes/ha applying a conversion factor of 3.76 with estimates of annual deforestation rates from available sources)
- **Biodiversity:** protection, maintenance and enhancement of terrestrial and aquatic ecosystems and associated species abundance and diversity. The Caribbean has been noted as being a biodiversity hotspot given the high level of endemism that occurs due to genetic isolation and evolution. Of the plant species, more than 70% are endemic and with respect to reptiles and amphibians, over 95% are endemic. Between 8 and 35% of species within the major marine taxa found globally are endemic to the Caribbean hotspot.

The project seeks to place under protected management regimes at least 500 hectares of ecologically important biological corridors (comprising of riparian zones, dry coastal forest ecotypes and upland forest ecosystems) and contribute to reduced pollutant loadings, particularly of sediments and nutrients (phosphates and nitrates to within LBS Protocols limits) in avoidance of excessive eutrophication of nearshore waters and smothering of coral reef systems. Of highest conservation interest in the countries are the rare and/or endemic wildlife species (such as the *Amazona* parrots, manatees) and economically important species, particularly sedentary species such as conch and sea urchins that are particularly impacted by heavy sediment and nutrient loads.

**B.3. DESCRIBE THE SOCIOECONOMIC BENEFITS TO BE DELIVERED BY THE PROJECT AT THE NATIONAL AND LOCAL LEVELS, INCLUDING CONSIDERATION OF GENDER DIMENSIONS, AND HOW THESE WILL SUPPORT THE ACHIEVEMENT OF GLOBAL ENVIRONMENT BENEFITS(GEF TRUST FUND) OR ADAPTATION BENEFITS (LDCF/SCCF). AS A BACKGROUND INFORMATION, READ [MAINSTREAMING GENDER AT THE GEF.](#):**

The proposed project would have various immediate socio-economic benefits for local communities. Coastal reforestation and prevention of habitat destruction (such as mangroves) will be crucial for ecosystem-based adaptive strategies that reduce vulnerability of human coastal communities to climate change. Halting the decline of coastal ecosystems would also secure and generate economic revenue, food security and improve livelihoods in the coastal zone. It would also provide major economic and development opportunities for coastal communities around the region. Specifically, project activities would facilitate the possible increased investment in these SIDS, which naturally become more attractive, with improved water management regimes and improved access to water. This could lead to the injection of revenue into these economies, while protecting valuable ecosystem services that are useful for long-term sustainable development. Land degradation abatement and sustainable forest management and protection of

biodiversity resources will not only serve to maintain agricultural and forest produce-related enterprises but will open new opportunities that may diversify traditional local economies. Local communities and women groups would be involved in the designing and implementation of national interventions to ensure their equitability and sustainability. Regionally, this project would provide the methodologies and basis for Caribbean SIDS to evaluate the value of their land, water and coastal resources and to incorporate these results into their management development plans.

The project will contribute to direct socio-economic benefits derived from:

- Improved ability to sustainably exploit near-shore coastal biodiversity resources as a function of improved coastal water quality, thereby realizing reduced fish catch effort and savings in costs of operations;
- Maintenance of present opportunities and expanded opportunities for eco-touristic recreational use of coastal waters and freshwaters based on improved water quality;
- Reduction in the burden of illness associated with poor eater supply and sanitation and reduced costs for associated health care;
- Improved productivity of agro-ecosystems through enhanced land conservation measures with opportunities to diversity into alternative food and non-food crop and livestock commodities
- General contributions to overall food security associated with enhanced land and water resources management and ameliorated landscapes, particularly as related to operation and maintenance of irrigation and good agricultural practices
- Greater investment opportunities for micro-scale enterprises associated with exploitation of non-timber forest products through SFM investment opportunities;
- Increased opportunities for non-extractive use of terrestrial biodiversity through eco-tourism opportunities;
- Creating the foundation to allow countries to enter carbon trading markets and contribute to future investments for follow-up actions;
- General capacity built at local level in terms of broadening the range of technical skills resident in the community.

Gender and social issues will be fully considered in this project, as they are important drivers and incentives for achieving global environmental benefits, a critical element for the success of the project. Gender accountability is a cross-cutting issue at both the project level and component level and will be tracked as part of the M&E system. Special attention will be paid to gender issues in developing socioeconomic indicators, and in the capacity-building activities. Socio-economic related activities will seek to build on existing information on the actual benefits women and disadvantaged communities can withdraw from ecosystems. The integrated natural resources management process supported by this project will be fully participatory and will promote appropriate allocations among competing uses, equitable distribution of benefits and burdens, adequate involvement of both women and men and community participation.

**B.4 INDICATE RISKS, INCLUDING CLIMATE CHANGE RISKS THAT MIGHT PREVENT THE PROJECT OBJECTIVES FROM BEING ACHIEVED, AND IF POSSIBLE, PROPOSE MEASURES THAT ADDRESS THESE RISKS TO BE FURTHER DEVELOPED DURING THE PROJECT DESIGN:**

Risk Statement	Risk Level	Risk Mitigation Strategy
IWRM and ICZM policies and plans are not accepted by the governments	Low	<p>Transparent and all-inclusive consultation process. Strong leadership by National agencies and inclusion of a high-level “champion” (such as a Minister or Prime Minister).</p> <p>Seek to empower civil society organizations and the private sector by their demonstrating and endorsing benefits of investment in IWRM, ICZM and SLM.</p>

Risk Statement	Risk Level	Risk Mitigation Strategy
Political elections result in reversal of agreed plans and policies	Low/Medium	Involve multiple agencies and sectors in the formulation of the plans and policies, so that they are non-partisan and widely accepted.
Climate change variability: major natural disaster (such as hurricane, earthquake) strikes the Caribbean	Medium	Project activities implemented over a wide geographical area so as not to concentrate all impacts in one territory or portion of the region.  Project will also highlight ways to promote adaptation to climate change and lessen the impact of some natural disasters.
Economic factors and potential social destabilization	Medium	Seek to target appropriate and financially sustainable solutions that are effective with low level capital investment.  Build stakeholder buy-in and investment toward upliftment of livelihoods at the local community level

**B.5. IDENTIFY KEY STAKEHOLDERS INVOLVED IN THE PROJECT INCLUDING THE PRIVATE SECTOR, CIVIL SOCIETY ORGANIZATIONS, LOCAL AND INDIGENOUS COMMUNITIES, AND THEIR RESPECTIVE ROLES, AS APPLICABLE:**

A number of key stakeholders and stakeholder groups will need to be involved in the project in order for it to be successful.

At the level of **collaborating agencies**, these will include:

- **UNEP** - the role of UNEP, as in the GEF IWCAM project, will be primarily as lead Implementing Agency, reporting to the GEF on project activities. It will have a key role not only at the regional level but also at the national level in supporting the implementation of regional policies and the use of policy and management tools thanks to the support of the Regional Seas Regional Coordination Unit which have demonstrated and proven ability to operate at both national and regional level and long standing relationship with the countries of the region. This is further supported by a network of Convention Secretariat focal points in each of the project countries with whom UNEP has established a close working relationship.

The **Caribbean Environment Programme Regional Coordinating Unit/Secretariat** to the Cartagena Convention (CAR/RCU) will be the lead Executing Agency. The proposed execution arrangements take advantage of the recognised expertise of the Secretariat to the Cartagena Convention in matters related to the marine and coastal environment and in working in a multi-lingual environment, as well as its expertise in implementing the Cartagena Convention and particularly its LBS and SPAW Protocols. Another important regional stakeholder are the Regional Activity Centers for the Implementation of the Protocols on Land-based Sources of Pollution and the Specially Protected Areas and Wildlife. The centre or the LBS Protocol is jointly shared between the Centre for Coastal and Marine Engineering and Management (CIMAB) in Cuba, and the Institute of Marine Affairs (IMA) in Trinidad and Tobago, while the Centre for the SPAW Protocol is located in Guadeloupe. All of these form part of the Caribbean Environment Programme's implementation structure. The project will include these centres in its networking and coordination activities and in any stakeholder and partnership arrangements.

- **UNDP** – UNDP will serve as co-Implementing Agency, along with UNEP for the overall project, it will have a key role with the national innovative projects, recognising the country presence of UNDP and<sub>31</sub>



the linkages between project activities and UNDP's country assistance strategies. UNDP's specific expertise and value vis-à-vis its regional and country offices will provide important support to the projects.

- **CARIBBEAN ENVIRONMENTAL HEALTH INSTITUTE (CEHI)** - Building on the experience of the GEF IWCAM project execution arrangement, the project will also be co-executed by CEHI, with the Project Coordination and its administrative requirements (including staffing) based at CEHI in St. Lucia. The proposed execution arrangements take advantage of the recognised expertise of CEHI in the field of freshwater resource management. CEHI, like UNEP, has a long established relationship with the countries of the region. Sustainability of project benefits at the regional level will be enhanced through these arrangements. CEHI is the principle institute of CARICOM with the mandate for environment health and environmental management across 16 Member States. In this regard the Institute has responsibility for provision of technical advisory services, conduct of environmental assessments, policy development and research on behalf of the countries in the areas of water, land/watershed resources management, wastewater, chemicals (pesticides and hazardous chemicals) and solid waste management. The Institute is a training center for environmental laboratory diagnostics services through its accredited laboratory facility.
- **CARIBBEAN INSTITUTE FOR METEOROLOGY AND HYDROLOGY (CIMH)** is a training and research organization with a mandate to improve the meteorological and hydrological services and to assist in promoting the awareness of the benefits of these services for the economic well-being of the CMO countries. This is achieved through training, research and investigations, and the provision of specialised services and advice. Some of the active initiatives include the Real-Time Flood Forecasting Project which seeks to develop a robust, reproducible, and transparent approach to flood forecasting that couples a physically based hydrological model capable of capturing changes in watershed characteristics to a numerical weather prediction model, the Caribbean Water Initiative (CARIWIN) which provides training and capacity development in water resources management to CARICOM member states, the Caribbean Water Monitor which is expected to be an essential tool in water resources management, and to assist in decision support for planning and managing water resources.
- **UNIVERSITY OF THE WEST INDIES (UWI)** - The UWI a role in the component on capacity building and can also be included as co-financing re: the knowledge management component. The need for collaboration with universities in the project has been recommended, along with having dedicated funds for agenda-driven research. The project, together with UWI, will explore becoming involved with the United Nations University Master's Programme in Water Assessment. UWI's Centre for Resource Management and Environmental Studies (CERMES, Barbados) has been engaged in research and policy guidance on areas related to water use efficiency, watershed management and IWRM in collaboration with regional partners such as CEHI and GWP-C. The Department of Geomatics Engineering & Land Management at UWI, St. Augustine Campus (Trinidad) provides support to research and applications in a range of land management studies from flood and hydrologic modeling to GIS applications for land use planning. This node also is host to Caribbean WaterNet, a Caribbean network for action research and capacity building in Integrated Water Resources Management. The areas of intervention include (i) strengthening regional cooperation to effectively address capacity development on IWRM, (ii) increasing the accessibility and delivery of good quality training and education on IWRM in the Caribbean and (iii) building capacity in water and sanitation for local government officials and NGOs in the Caribbean.
- **GLOBAL WATER PARTNERSHIP – CARIBBEAN (GWP-C)** is dedicated to supporting Caribbean countries in the sustainable management of their water resources through the establishment of strategic alliances and the implementation of the appropriate actions. The GWP-C has supported the regions efforts to implement IWRM. This includes through policy advocacy and capacity-building. They will continue to support these efforts through the project. The GWP-C was suggested as a possible<sub>32</sub>

collaborator or executors for a component on capacity building. GWP-C can be included as co-financing re: the knowledge management component.

- **NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION (NOAA)** will partner with Caribbean government ministries and relevant organizations to: 1) propose policy reforms through implementation of technically feasible and cost effective watershed best management practices which will reduce sediment, nutrient, and pesticide loadings to critical coastal areas that impact nearshore environments and balance the competing needs of ecosystem sustainability and economic development; and, 2) develop pilot studies for watershed monitoring, to establish baseline conditions and efficacy of said implemented practices. NOAA's work will focus on control of nonpoint and point sources impacting coastal ecosystems by demonstrating an integrated watershed management approach to control and reduce land-based sources of pollution. Consensus-building approach will be utilized by involving stakeholders and decision-makers at local and community levels to develop and implement an integrated coastal watershed management plan. The scope of these pilot studies will help countries respond to their obligations under the Cartagena Convention's LBS Protocol. NOAA has been supporting implementation of the GPA in coordination with CAR/RCU in Caribbean SIDS.
- **CARIBBEAN WATER & WASTEWATER ASSOCIATION (CWWA)**, as an association of water and waste sector professionals, seeks to advance the science, practice and management of water supply and wastewater disposal for the benefit of Caribbean people. They promote education and training to ensure an adequacy of trained manpower and well-informed members of the public and encourage the study, research and development in water supply and wastewater management, and the publication of the results of such work, so as to provide for appropriate and dynamic technological advances in the Caribbean. Their role will include policy advocacy, technical backstopping and promotion of the work (among sector professionals and through their annual Conference), alongside facilitating capacity-building as well.
- **CARIBBEAN WATER & SEWERAGE ASSOCIATION (CAWASA)** is a regional organization of water utilities dedicated to serving the growth and development of its members. CAWASA is the successor organization to the Caribbean Basin Water Management Programme Inc. (CBWMP Inc.). CAWASA's role could include to promote project outcomes and technology applications amongst its member utilities.
- **CARIBBEAN COMMUNITY SECRETARIAT – CARICOM** as the political organ of the Caribbean Community, has a role in bringing regional policy positions to the attention of Heads of Government and other Ministerial bodies. It has also been mandated to advance the establishment of a CARICOM Consortium on Water. The project will advance implementation of the Work Plan of the Consortium, within the umbrella of CARICOM.
- **CARIBBEAN NETWORK FOR INTEGRATED RURAL DEVELOPMENT (CNIRD)** – the Partnership Initiative on Sustainable Land Management (PISLM) was formulated based on a need to forge a strategic partnership in support of combating land degradation in Caribbean Small Island Developing States (SIDS). The **PISLM** serves as a mechanism to facilitate exchange of experiences and good land management practices between participating countries. Furthermore, the initiative serves as a mechanism for stimulating the replication of various approaches, tools and methodologies throughout the region. Due to institutional and political changes in the various countries and organizations of the region the **PISLM** has not been fully functional. The project will explore ways to assist in getting the PISLM to function at its full potential. Through UNEP and other agency's involvement in the PISLM, efforts to address SLM will be coordinated.
- **ORGANISATION OF AMERICAN STATES** - The OAS expressed its willingness to collaborate on capacity building and policy matters. It also can provide access to ministerial levels through its convening

authority. The OAS has significant experience in supporting integrated water resources management throughout the hemisphere.

- **ORGANISATION OF EASTERN CARIBBEAN STATES** - The OECS Environmental and Sustainable Development Unit (ESDU) is working with the United States Agency for International Development (USAID) on the OECS - USAID Climate Variability, Change and Mitigation Project for the 6 independent states of the OECS. Barbados will also be involved in the project with parallel activities. The focus of this project is on the tourism sectors, but will also look at water resources and sustainable land management. It is a 5-½ year project with about US\$2.5 million per year allocated to undertake interventions in freshwater and coastal area management to build resilience, as well as institutional capacity in government and related sectors affected by climate change. The OECS is interested in linking its efforts to a larger project focused on sustainable land management and will support the new project development and implementation. The OECS has an MOU with CAR/RCU to strengthen work in environmental in the Eastern Caribbean sub-region.
- **THE NATURE CONSERVANCY** - TNC has programmes in the Bahamas, Jamaica, the Dominican Republic and the Eastern Caribbean with a focus primarily on land-based activities that impact coastal natural resources and on conservation of marine resources. TNC promotes (i) sustainable economies through balancing the needs of the environment, society, and the economy to ensure resources are not consumed faster than nature can renew them, (ii) dedicated, long-term support to the region's national parks and building capacity within these parks, (iii) enabling local people to earn a living from tourism and other means while still conserving precious natural resources and (iv) addressing climate change and other impacts to the natural world.
- **UNESCO**- In the framework of its GRAPHIC programme that assess the impacts of climate change and human activities on groundwater resources based on case studies, UNESCO has been working on Island States for several years now, including the Caribbean. Knowledge extracted from GRAPHIC would contribute to improving the understanding of specific island groundwater systems and provide science-based recommendations for sustainable management of the island water resources. GRAPHIC also offers a network of highly motivated groundwater experts with experience in the region (most of them university professors, and experts from governmental institutions, such as USGS and USDA).

**At the national level**, the Institute of Marine Affairs (IMA), as a national organisation that advises the government of Trinidad and Tobago, also serves as a Regional Activity Centre (RAC) for UNEP. IMA expressed its interest to collaborate by helping to take some of their lessons learned and applying them to a specific initiative, such as work in the Chaguaramas Peninsula in NW Trinidad. Other national organisations from across the region will have similar roles to play, through the National Inter-sectoral Committees especially.

**The local communities** are the front-line beneficiaries of the interventions that are to be implemented under the project. These communities will include fisher folk having economic ties to exploitation of near-shore coastal biodiversity resources, farmers with interests in maintaining viable livelihoods associated with land and water resource conservation, stakeholders in the tourism sector that have strong interests in maintenance of the quality of coastal and terrestrial environments for the sale of recreation packages, and rural and peri-urban communities having dependence on access to water and sanitation services. The community stakeholders groups will therefore include *inter-alia* farmer and fisher cooperatives, small business associations, tourism associations, chambers of commerce and industries, water use groups and advocates, environmental NGOs, sports and social clubs, school clubs, religious and faith-based clubs, engineering and other professional associations.

The project will seek to foster co-management arrangements with the direct beneficiaries of the project interventions so as to strengthen sustainability of the project outcomes post-project closure. Such arrangements can be related to *inter-alia*, management of coastal marine and terrestrial biodiversity around

business enterprise opportunities such as operation of eco-tourism sites, civil society partnerships for water resources protection at the watershed and water catchment level, strengthening of farmers and fishers cooperatives through exploitation of new economic opportunities through sale of previously unavailable non-traditional commodities. Engagement of mainstream commercial private sector interests in a supportive role to small-scale community based co-management arrangements will be supported.

**The private sector** in key areas such as the hospitality and beverage and other manufacturing sectors (heavy water users) will be encouraged to take a very active role as a stakeholder and participatory partner in this project. The private sector had already been engaged through a number of earlier demonstration projects and it is hoped to build further input at the regional level as well as the national level. The yachting industry, for example, had shown a particular interest in the demonstration projects and it is hoped that this relationship can be further developed to the mutual advantage of all stakeholders.

#### **B.6. OUTLINE THE COORDINATION WITH OTHER RELATED INITIATIVES:**

A number of other initiatives are either on-going or planned for which there will need to be coordination. These include:

- **The Caribbean Regional Fund for Wastewater Management Project (CRew)** is a four year project that will focus on piloting revolving financing mechanisms, appropriate waste water management technologies and related wastewater management reforms in the wider Caribbean region (WCR). The project, which is being funded by the Global Environment Facility (GEF), is managed and implemented by the Inter-American Development Bank (IDB) and the United Nations Environment Program (UNEP).

The main objectives of this project are to:

- Establish innovative, financing mechanisms for cost-effective and sustainable financing of wastewater management in the WCR;
- Promote the use of the most appropriate waste water management technologies
- Facilitate policy discussions, strengthen legislative frameworks; and
- Facilitate regional dialogue and knowledge exchange with the key stakeholders in the WCR.

The CRew initiative complements the project by focusing on providing a new source of financing in the region that will encourage less efficient utilities to build capacity via a regional Water Operations Partnership (WOP) mechanism, so as to develop sewerage plans and projects for financing in municipalities.

- **The USAID/OECS Climate Variability, Change and Mitigation Project:** The USAID climate change support for the countries in the Eastern Caribbean will complement overlapping initiatives it previously supported under its biodiversity support to the region. Based on analysis gathered from two broad stakeholder workshops held in St. Lucia and Barbados, two critical areas were identified as requiring special attention. These are coastal zone management and resilience and freshwater resources management.

The program focuses on four component areas which are essential to address specific vulnerabilities related to water and climate resources:

- Fostering and improving the enabling environment to build understanding and support for policies and laws that reduce vulnerability to climate stresses
- Launching interventions in freshwater and coastal management to build resilience and demonstrate results
- Building institutional capacity and addressing information gaps through support for key practitioners in government and related sectors affected by climate change as well as support for institutions in the region such as training facilities, government departments and entities charged with developing data.
- Building awareness in the public on issues related to climate change and improving capacities for climate change adaptation.

Assistance will be provided to address the capacity needs of the region including working to strengthen technical organizations in the areas such as meteorology, coastal and marine science. This will be complemented with the strengthening of training institutions serving the region to support increasing the cadre of persons both at the technical level as well as decision-making level to address issues related to climate change.

In particular, the project will seek to build the enabling environment for reducing vulnerability to climate change by improving the regulatory framework in support of national adaptation strategies - demonstration initiatives that can be modeled or used as best practices throughout the region. The program will also provide direct support at the country level for initiatives focusing on adaptation measures in areas of coastal zone management and freshwater resource management. The program will be supported by appropriate public awareness and education programs to raise the level of awareness on climate change and steps being taken to address or reduce impacts across the region, which is vital to the long-term viability of these island states.

- **GIZ Project 1 - Improving the Management of Coastal Resources and the Conservation of the Marine Biodiversity in the Caribbean Region:** This is one of two initiatives the German Agency for International Cooperation (GIZ) is preparing for the region to address terrestrial and marine resources management. At the regional and national level, the project focuses on strengthening the capacity of stakeholders through a common institutional framework for integrated coastal management and the strengthening of management of marine protected areas (MPA) in the Caribbean Region. The project will also provide advice to local communities and relevant public and private stakeholders in selected member countries of CARICOM. Particular emphasis will be paid on improving the resilience and adaptation capacity of communities by implementing biodiversity and ecosystem conservation measures as well as the promotion of mechanisms for sustainable use of natural resources. The project anticipates close collaboration between various actors at the international, regional and local levels. The target group comprises the local communities in the participating countries and their organizations. They include fishers, farmers, individuals in the tourism sector and small to medium enterprises which are dependent on the use of coastal and marine resources. Mediators are staff of regional organizations within the CARICOM and OECS, policy and technical personnel of national Ministries (e.g. environment, agriculture, planning, and finance), women's organisations, youth, community-based and other non-governmental organisations as well as private sector representatives and researchers within academia.
- **GIZ Project 2 - Enhancing the adaptive capacity of rural economies and natural resources to climate change in selected Caribbean small island and low lying coastal developing states:** Additional resources have been committed for a complementary project on the management and protection of land based natural resources and agricultural production systems of the Caribbean small island and low lying coastal states. The new project is anticipated to complement the CARICOM/GIZ project which addresses some of the main threats and challenges posed by climate change to the marine and coastal resources of the Caribbean small island and low lying coastal states.

Components of support include technical and advisory services and the training of staff members of implementing and executing organisations at central and local level by two international long-term experts, national long-term and short-term experts and international short-term experts for special tasks. In addition to financing materials/equipment for operational needs (vehicles, office and computer equipment, expendable goods), local financing agreements will be provided for measures to support improved management of marine protected areas. Contributions by the Partner include the provision of premises for offices and associated operational costs (electricity, water, communications), and necessary organisational support for the implementation of activities through provision of personnel.

The executing organization for the projects will be the CARICOM Secretariat. The implementing organization is the Caribbean Environmental Health Institute (CEHI). The implementing agency on the German side will be GIZ. The proposed project area, for the first project, initially comprises the following CARICOM Member

States: Belize, Dominica, Grenada, Guyana, Jamaica, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines. The proposed project duration is four (4) years. These two projects will be prepared in full knowledge of the GEF initiative.

- **Lesser Developed Countries (LDCs) and Small Island Developing States (SIDS) Targeted Portfolio Approach for Capacity Development and Mainstreaming of Sustainable Land Management (LDC-SIDS SLM Portfolio Project):** In September 2004, the Global Environment Facility (GEF) approved a worldwide project titled Under the Project, 47 LDCs and SIDS (including 13 in the Caribbean) that had not yet completed their **National Action Plans (NAPs)** (as mandated under the United Nations Convention to Combat Desertification/Land Degradation, UNCCD) were able to access funding under expedited **Medium-Sized Projects (MSPs)** within GEF's Operational Programme 15 (OP-15) on Land Degradation.

The Project intended to develop individual, institutional and systemic capacities to mainstream sustainable land management into national policies and development planning. The Project also assisted national governments in identifying appropriate mechanisms for financing SLM. At the end of the Project, each participating country will have begun a process of capacity development and mainstreaming, elaborated their National Action Plan (under the UNCCD) through co-financing in a timely manner, and produced a creditable Medium-Term National Investment Plan for SLM and its coordinated resource mobilization plan (with projects identified for investment by specific Implementing Agencies, Executing Agencies and interested Donors) as part of the NAP elaboration process. CEHI, in collaboration with UNDP was able to finalize for approval by the GEF-Secretariat, MSPs for five participating OECS countries and Barbados. The projects are nearing completion.

- **NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION** – NOAA and UNEP GPA have signed a Memorandum of Agreement, in partnership with UNEP CAR/RCU to work together in the participating countries of Saint Lucia and the Dominican Republic, on National Programmes of Action (under the GPA). Under this MOA, NOAA provides technical assistance to these nations to develop watershed management plans to address issues related to environmental health, socio-economic monitoring, and nutrient reduction. NOAA has also indicated its willingness to support capacity-building in areas such as monitoring of the coastal environment, including nutrients, sediments, and pesticides. NOAA has supported the development of National Programmes of Action to control pollutant runoff with Trinidad and Tobago, Dominican Republic and other countries of the Wider Caribbean not part of this PIF.
- **Caribbean Pilot Program for Climate Resilience (PPCR), Regional Strategic Program for Climate Resilience (SPCR):** This program is financed by the Climate Investment Funds (CIF), which are a pair of funds to help developing countries in piloting transformations in clean technology, sustainable management of forests, increased energy access through renewable energy, and climate-resilient development. The program is designed to the Caribbean region to build on the adaptation efforts, as well as complement other climate related activities within the region. The PPCR objectives are (i) to pilot and demonstrate approaches for integration of climate risk and resilience into development policies and planning, (ii) to strengthen capacities at the national levels to integrates climate resilience into development planning, (iii) to scale up and leverage climate resilient investment, building upon other ongoing initiatives; and (iv) to enable learning-by-doing and sharing lessons at the country, regional and global levels. The objectives of the Caribbean PPCR will be pursued through separate multi-year Strategic Programs for Climate Resilience (SPCRs) for the six national tracks and single regional track of PPCR pilots. The following are the priority areas at the national level for the 6 participating countries: **Dominica:** Agriculture and food security, water quality and quantity, Fisheries, climate change impacts on coastal and marine resources, infrastructure and human settlements, tourism, forestry; **Grenada:** Integrated water resource management, capacity building at the sector level, and data management; **Haiti:** Agriculture and food security, coastal zone management and reconstruction (sectors/themes) are the main areas, with sub-sectors/themes being infrastructure, land planning and data management; **Jamaica:** Agriculture, land-use planning, health, water resources, integrated coastal zone management, climate proofing of national and sectoral plans, tourism, and data management; **Saint**

**Lucia:** Agriculture, coastal and marine resources, financial sector, forestry, biodiversity, health, human settlement, critical infrastructure, tourism, and water resource management. Data needs were also highlighted for Saint Lucia particularly the need for Bathymetric and Hydrometric data; **Saint Vincent and Grenadines:** Monitoring and evaluation of environmental hazards, watershed management, public sensitization and awareness, integrated planning, and data management. The regional strategic program for climate resilience comprises of four main components, each focused on a clearly identifiable stage of climate adaptation. These stages are mainly (1) collection of climate relevant data, (2) data analysis, (3) impact modeling and (4) applied adaptation.

- **University of the West Indies – Centre for Resource Management and Environmental Studies (CERMES)** has been engaged with the research component of integrated water resources management through national level policy analysis supported by field study building capacity at Masters and Doctoral levels. The Centre was recently engaged with the Government of Grenada in partnership with the Food and Agricultural Organization in the development of a national water resources management policy and recommendations for supportive regulatory and institutional reforms. The Centre presently has funded collaboration with the Australian Government through AusAID, and the United States State Department with the focus on water resources management and climate change.
- **PISLM** - the Partnership Initiative on Sustainable Land Management (PISLM) was formulated based on a decision made at the Caribbean Sub-Regional Workshop on Land Degradation held in Trinidad and Tobago in February 2004. The work programme for the PISLM includes south-south cooperation, in specific thematic areas, with other countries in the LAC region, including Cuba and the Dominican Republic. Due to institutional and political changes in the various countries and organizations of the region, the PISLM has not been fully functional. The PISLM consists of a series of commitments and action-oriented coalitions focused on deliverables, intended to translate political commitment into action. The PISLM serves as a mechanism to facilitate exchange of experiences and good land management practices between participating countries. Furthermore, the initiative serves as a mechanism for stimulating the replication of various approaches, tools and methodologies throughout the region. The Caribbean Network for Integrated Rural Development (CNIRD), located in Trinidad and Tobago, is the entity which hosts the support office for the **PISLM**. Efforts will be made to support the Work Programme of the PISLM and coordinate with the CNIRD.
- The Caribbean Natural Resources Institute (CANARI) is implementing the **Critical Ecosystem Partnership Fund (CEPF) in the Caribbean Islands Biodiversity Hotspots** which is a US\$6.9 million grant fund to support civil society's contribution to biodiversity conservation in eleven Caribbean islands for 2010-2015. The CEPF is a joint initiative of l'Agence Française de Développement, Conservation International, the Global Environment Facility, the Government of Japan, the John D. and Catherine T. MacArthur Foundation, and the World Bank. The goal of the CEPF is to support the work of civil society in developing and implementing conservation strategies, as well as in raising public awareness on the implications of loss of biodiversity. Civil society organisations from 11 countries eligible to receive CEPF; these include Antigua and Barbuda, Dominica, the Dominican Republic, Grenada, Haiti, Jamaica, St Kitts and Nevis, Saint Lucia and St. Vincent and the Grenadines, as signatories to the Convention on Biological Diversity and World Bank client countries. In addition, the Bahamas and Barbados will be priorities for CEPF investment because of their eligibility to receive Global Environment Facility (GEF) funds specifically. The Greater Antilles nations of Jamaica, Haiti and the Dominican Republic are of highest priority for CEPF investment as they have the highest priority KBAs.
- The **Caribbean Challenge** is a region-wide effort led by the Nature Conservancy (TNC) that aims to protect the health of the Caribbean's lands and waters and provides an opportunity to create a model of sustainable, multi-country funding that could help solve the problem of unfunded, ineffective national parks in the Caribbean. The Challenge seeks to encourage governments of the Caribbean to establish a network of 20 million acres of marine parks across the territorial waters of at least 10 countries, and ensure that once established, that the protected areas also receive sufficient, permanent funding through sustainable

financing tools. To date, participating countries in the Caribbean Challenge include: Antigua and Barbuda, The Bahamas, Cayman Islands, the Dominican Republic, Grenada, Jamaica, St. Kitts and Nevis, St. Lucia, and St. Vincent and the Grenadines. A few examples of work under the Caribbean Challenge are cited here. Active support from the TNC is being provided in the Lesser Antilles, where in St. Vincent and the Grenadines and Grenada it is working with local partners to survey all of the Grenadines, identify threats and conservation strategies, and map priority sites in need of protection. Part of the plan includes developing and managing a system of marine protected areas. Efforts are also underway in Dominica with the Department of Forestry, with the hosting of an annual volunteer work trip to Morne Trois Pitons National Park where Conservancy members and staff work alongside Dominican forestry employees to provide much-needed facility and trail maintenance in the park. In Jamaica, the Pedro Bank Management Project aims to reduce coral reef degradation by providing solutions to two main threats not currently addressed on the bank-direct over-fishing of resources and degradation of coral reefs and coral cays due to unsustainable development.

### **C. DESCRIBE THE GEF AGENCY'S COMPARATIVE ADVANTAGE TO IMPLEMENT THIS PROJECT:**

The Project will be jointly implemented by UNEP and UNDP and recognizes the comparative advantages of the two agencies. The project activities are consistent with the delivery of **UNEP's** work programme at the regional and national levels across three of its sub-programmes – ecosystems management, climate change and resource efficiency. At the technical level, complementary activities include the promotion of an ecosystem management approach through its marine and freshwater programme, **ridge to reef** activities embodied in the **GPA** programme for which it serves as the Secretariat, dedicated programme on SIDS addressing Climate Change adaptation, promoting the IWRM approach with special attention on waste management, and supporting the creation of MPAs and pollution prevention through the Caribbean Regional Seas Programme (**CAR/RCU**). The framework provided by the UNEP Administered International Environmental Conventions on Climate Change, Biodiversity and Land Degradation and the network of UNEP national and technical focal points along with the country presence of **UNDP** and the linkages between project activities and UNDP's country assistance strategies, will enable the project to take advantage of the opportunities for synergy and complementarity among the two agencies. UNEP will serve as the lead Implementing Agency.

### **UNEP**

The proposed project is in line with **UNEP's role in the GEF** to catalyze the development of scientific and technical analysis and advancing environmental management in GEF-financed activities. In particular, during the GEF CEO's visit to UNEP in January 2011, three primary strengths or comparative advantages within the GEF IW focal area were identified for UNEP, namely: catalyzing regional and multi-country cooperation especially related to environmental governance, scientific assessment, and development and implementation of innovative approaches and tools.

Further, **UNEP's comparative advantage** derives from its mandate to coordinate UN activities with regard to the environment, including its convening power, its ability to engage with different stakeholders to develop **innovative solutions** and its capacity **to transform these into policy- and implementation-relevant tools**. UNEP's comparative advantages in this proposed project are aligned with its mandate, functions and Medium Term Strategy and its biennial Programme of Work (2012- 2013). The proposed project is fully consistent with the ecosystem management, but also with the climate change and resource efficiency thematic priorities outlined in UNEP's Medium-term Strategy. UNEP's programmatic efforts thrive to build capacity of stakeholders for integrating an ecosystem approach into national economic and development frameworks.

UNEP Division for Environmental Policy Implementation (DEPI) offers a strong relationship with its **Regional Seas Programme** and associated international environmental conventions. UNEP is implementing a Freshwater Programme (**IWRM**, International Waters, **Rainwater Harvesting and SIDS**); and the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (**GPA**), including its commitment to address the linkages between the upstream (freshwater) and downstream (coasts and oceans) links. Global and regional partnerships with NGOs and research institutions will be leveraged using **CAR/RCU** as to provide both the regional and national relevance and coordination mechanisms to ensure buy in, support and a wide range of stakeholders, to



assist with delivering and implementing critical activities at the national level.

In particular, UNEP will support the project through the work of its Coordination Office for the **GPA**. The Programme of Work for the implementation of the GPA over the period 2012–2016 was approved by member states in January 2012. It underwent review utilizing the Intergovernmental Mechanism available to the GPA and expresses the current priorities which governments, including those of the Caribbean wish to see addressed. It will help Governments to develop national programmes of action, and move towards ecosystem-based management approaches. The focus is on the promotion, facilitation and implementation of the GPA in an integrated and cross-sectoral manner at the national, regional and international levels. Following the approach set out in the policy guidance for the implementation of the GPA, the GPA Coordination Office is establishing and/or supporting relevant global partnerships on nutrients, wastewater and marine litter, thereby enabling the GPA to add value to the work being conducted within the Caribbean region and in the context of this proposed project.

As such, the Office's role and actions in relation to the **Global Partnership on Nutrient Management** and on wastewater includes amongst others; mobilizing actions for sustainable use of nutrients and improve nutrient uptake efficiency; the promotion of a network of experts, institutions and Governments, including from the private sector, along with a supportive online information management system, to facilitate the sharing of lessons learned, good practices and available and acceptable technologies; support to test innovative approaches and technologies; and provision of capacity-building support to facilitate the implementation of nationally and regionally defined priority activities.

Since the **International Environmental Technology Centre (IETC)**'s inception in May 1991 when UNEP's Governing Council took a decision to further strengthen UNEP's role in sustainable urban and freshwater basin management, water has been a key focal area with initiatives on the management of lakes and reservoirs, Integrated Water Resource Management (IWRM) based on the ecosystem approach, and promotion of water-related Environmentally Sound Technologies (**EST**) including the phytotechnology concept and **eco-sanitation technologies**. The current IETC work programme of relevance to this proposed project includes activities in Jamaica to promote environmentally sound water and wastewater provision at the community level, a work programme on EST "Every Drop Counts: Environmentally Sound Technologies for Urban and Domestic Water Use Efficiency," as well as modelling applications to support EST design. IETC's Water and Sanitation projects within the 2012-13 UNEP Programme of Work are anchored in two thematic areas of UNEP Medium Term Strategy, namely Ecosystem Management and Resource Efficiency and Sustainable Consumption and Production.

Just like with the GEF IWCAM project, this proposed project will also benefit from UNEP long standing work in IWRM and its dedicated SIDS programme looking at building climate change resilience through integrated water resources management as well as mainstreaming resources efficiency at all levels of production and service provision. The delivery of its IWRM programme is done through a unique partnership with the UNEP-DHI Center.

The project will also benefit from the recognized expertise of the **Caribbean Environment Programme Regional Coordinating Unit/Secretariat** to the Cartagena Convention in matters related to the marine and coastal environment and in working in a multi-lingual environment, as well as its expertise in implementing the Cartagena Convention and particularly its LBS and SPAW Protocols.

CAR/RCU through the Cartagena Convention and its Protocols has established formal collaborative relationships with global environmental convention secretariats and serves as a regional platform and mechanism through which these and other global commitments such as the GPA, Barbados SIDS POA, MDGs and the WSSD are implemented at the country level. The primary focus for the work of the Cartagena Convention Secretariat is on capacity building and training through innovative partnership arrangements that ensure that programmes and project activities contribute to poverty alleviation, social resilience and economic and environmental sustainability. Partnerships have already been established by the Secretariat with several multilateral and bilateral stakeholders, the private sector, regional research and educational institutions as well as the civil society and major groups working in Caribbean SIDS. Capacity building projects and activities are therefore being implemented in collaboration with,

and in support of the governments of the region who compose the IGM. They are thus ideally positioned to continue to support the delivery of a Ridge to Reef integrated land and water approach to prevent pollution on the marine environment and build on the successes of the GEF IWCAM Project.

Other important regional stakeholders include CAR RCU's specialized **Regional Activity Centres (RACs)** for the Implementation of the Protocols on Land-based Sources of Pollution and Specially Protected Areas and Wildlife. The RACs for pollution prevention are located at the Centre for Coastal and Marine Engineering and Management (CIMAB) in Cuba, and the Institute of Marine Affairs (IMA) in Trinidad and Tobago, while the RAC for biodiversity management is located in Guadeloupe and supported by the Government of France. The project will include these specialized technical RACs in its networking and coordination activities, in any stakeholder and partnership arrangements, and as part of the overall execution by CAR/RCU.

UNEP's comparative advantage thus includes a platform for regional and national coordination provided by the UNEP Regional Seas Programme (s.a. the Cartagena Convention) and affiliated centers with the UNEP Caribbean Regional Coordinating Unit in Jamaica including its RACS in Cuba, Trinidad and Tobago and Guadeloupe, but also counts on the presence of a UNEP country office in Haiti and UNEP's Regional Office for Latin America and the Caribbean (UNEP/ROLAC) in Panama as to ensure close proximity to most of the wider Caribbean nations. Their respective technical cadre of staff will support countries conscious of their specific cultural and linguistic sensitivities. Such regional and national representation will be fully captured and built into the management process to support both national and regional activities as to ensure the effective implementation of the project and its integration into a long-term sustainable process.

Finally, UNEP supervision of the project is to be carried out by UNEP/DEPI-GEF staff posted in UNEP's Regional Office for North America (UNEP/RONA) in Washington DC with direct flights to Caribbean making this a particularly expedient location. UNEP supervision will be further enhanced by technical staff located in UNEP's Regional Office for Latin America and the Caribbean (UNEP/ROLAC) in Panama City, Panama, and UNEP's headquarter staff in Nairobi, Kenya.

### **UNDP**

For UNDP, its comparative advantage includes extensive experience and networks of UNDP promoting improved water governance, including both IWRM (CapNet), and MDG GoAL-WASH (Governance, Advocacy and Leadership for Water, Sanitation and Hygiene), UNDP's new water supply and sanitation governance reform program. UNDP is targeting capacity reinforcement and legislative reforms necessary to achieve MDGs, including MDG 1 and MDG7, including its water and sanitation targets, and to promote inter-sectoral management of natural resources. On a global level, UNDP Water Governance Programme is active in UN-Water and currently chairs the IWRM Task Force. UNDP also supports the Global Water Partnership, the leading NGO promoting IWRM, which responds to the need for participatory institutional mechanisms that are related to water management, and the need for a new global coordination mechanism for IWRM.

UNDP's Strategic Plan for 2008-2013 approved by the UNDP Executive Board includes Managing Energy and the Environment for Sustainable Development (Goal 4). UNDP has taken further internal steps to operationalize the mainstreaming elements of the Strategic Plan at a subsidiary level through its Water Governance Strategy endorsed by the UNDP Management Group in 2007. The Water Governance Strategy includes as one of its three Strategic Priorities Regional and Global Cooperation and the associated Outcome, Enhanced regional and global cooperation, peace, security and socio-economic development through adaptive governance of shared water and marine resources, and the principal Output, Assist countries to develop and implement cooperation on transboundary waters through multi-country agreements on priority concerns, governance reforms, investments, legal frameworks, institutions and strategic action programmes.

Notably, UNDP's work on improving governance of shared water and ocean resources incorporates both freshwater and marine waterbodies and has for some time applied a "ridge-to-reef" approach recognizing the freshwater-marine continuum and important linkages between upstream water and land management and the health and

integrity of downstream coastal and marine ecosystems. The Caribbean, with most people living in the coastal areas and major challenges with both land-based pollution and ocean-based ecosystem stressors, represents an ideal setting for piloting and refining approaches to marine ecosystem restoration. Underscoring this approach is UNDP's poverty reduction mandate and commitment to preserving and enhancing food security and livelihoods of the nearly 1 billion people who depend on healthy, functioning marine ecosystems like the Caribbean.

In managing its Water Governance programmes, UNDP draws on a wide range of staff expertise in water and marine/coastal resources management at HQ, in its Regional Centers, and through its network of Country Offices. Senior advisors at HQ and in regional centers all have relevant Ph.D.'s (marine biology, environmental management/policy etc.).

In terms of implementing GEF IW projects, UNDP has consistently delivered results through a broad range of international transboundary water interventions including the high-level adoption of 17 SAPs, eight of which are currently being implemented. UNDP has strengthened or established 20 multi-country marine/coastal, river and lake basin management agencies or commissions.

Lastly, UNDP builds on both its field presence in the region and with its partner organizations in the participating countries. In addition, the project will be directly supported by an experienced UNDP Regional Technical Advisor based in the region and by the UNDP Principal Technical Advisor at UNDP Headquarters with responsibility for global oversight of the UNDP Ocean Governance programme.

#### **C.1 INDICATE THE CO-FINANCING AMOUNT THE GEF AGENCY IS BRINGING TO THE PROJECT:**

##### **UNEP**

The GPA will focus its efforts within the Caribbean primarily through its involvement in the project. As such, it will dedicate 20% of its personnel time and other financial resources towards the common objectives. This is estimated to be USD1M of in-cash contribution over the life of the project.

CAR/RCU with its regional and national presence will contribute in-kind (USD6M) and cash (USD2M) resources from activities of around USD8M over the life of the project.

##### **UNDP**

UNDP with its regional programmes and national presence will contribute in-cash resources from activities of around USD1M over the life of the project.

#### **C.2 HOW DOES THE PROJECT FIT INTO THE GEF AGENCY'S PROGRAM (REFLECTED IN DOCUMENTS SUCH AS UNDAF, CAS, ETC.) AND STAFF CAPACITY IN THE COUNTRY TO FOLLOW UP PROJECT IMPLEMENTATION:**

**UNEP** serves as the Secretariat for the Global Programme of Action for the Protection of the Marine Environment from land-based sources of marine pollution. UNEP CAR/RCU is the Secretariat for the Regional Seas Caribbean Environment Programme (CEP) adopted in 1981 and the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (Cartagena Convention) adopted in 1986. Its mission is to promote regional co-operation for the protection and development of the Wider Caribbean Region with the major objective being the sustainable development and use of marine and coastal resources in the Wider Caribbean Region through effective, integrated management that allows for economic growth and sustainable livelihoods. Based on these, the Secretariat helps to coordinate scientific and technical projects conducted by national and regional agencies, scientific, technical and academic institutions; non-governmental organizations and the private sector. It facilitates Capacity Building & Technology Support, Public Awareness & Education, Sharing of Lessons Learnt & Best Practices through collection, review and dissemination of case studies and publications, Research, Monitoring & Assessment and national Legal, Institutional & Policy Reforms. In addition, UNEP CAR/RCU has established a network of **national and technical focal points** at the country level in each of the 28 member Governments of the Caribbean Environment Programme. Additionally UNEP and NOAA entered into a

Memorandum of Understanding in March 2004 under which NOAA will provide technical assistance to countries in the wider Caribbean region in the development and implementation of National Programs of Action to address land-based sources of pollution.

Four GEF funded projects under the International Waters Portfolio – on Reducing Contamination of the Caribbean Sea in Central America by Pesticide Run Off (RepCar); Integrating Watershed and Coastal Area Management in Caribbean SIDS (IWCAM); the Caribbean Regional Fund for Wastewater (CRew); and Demonstration of Innovative Approaches to the Rehabilitation of Contaminated Bays in the Wider Caribbean Region – are being implemented and executed and/or co-implemented and co-executed by UNEP with CAR/RCU. Additional support by UNEP CAR/RCU is being provided to Regional GEF Projects on the Caribbean Large Marine Ecosystem, Invasive Species and Ballast Water. Finally UNEP CAR/RCU is coordinating activities under GEF IW:LEARN to test the effectiveness of cross-focal-area networking among a ‘regional cluster’ of ongoing and pipeline GEF projects in the Wider Caribbean.

**UNDP** has been promoting awareness on the principles of mainstreaming SLM into policy frameworks, building capacities at national and local levels, and providing technical assistance for implementing and monitoring innovative on-the-ground initiatives in sustainable land management, through, inter-alia, the LDC-SIDS SLM Portfolio project previously mentioned.

## LIST OF ACRONYMS

CANARI	Caribbean Natural Resources Institute
CARICOM	Caribbean Community
CAWASA	Caribbean Water and Sewerage Association
CEHI	Caribbean Environmental Health Institute
CEP	Caribbean Environment Programme
CERMES	Centre for Resource Management and Environmental Studies
CIF	Climate Investment Funds
CNIRD	Caribbean Network For Integrated Rural Development
CRew	Caribbean Regional Fund for Wastewater Management Project
CWWA	Caribbean Water and Wastewater Association
GEF-IWCAM	GEF-funded Integrating Watershed and Coastal Areas Management Project
GIZ	German Agency for International Cooperation
GWP-C	Global Water Partnership - Caribbean
ICZM	Integrated Coastal Zone Management
LBS	Land-Based Sources (of marine pollution)
MPA	marine protected area
NOAA	National Oceanic and Atmospheric Administration
OECS	Organisation Of Eastern Caribbean States
RepCar	Reducing Contamination of the Caribbean Sea in Central America by Pesticide Runoff Project
RWH	Rainwater Harvesting
TNC	The Nature Conservancy
UNEP CAR/RCU	UNEP Caribbean Regional Coordinating Unit
USAID	United States Agency for International Development
UWI	University of the West Indies
WCR	wider Caribbean region
WSSD	World Summit on Sustainable Development



## **PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)**

**A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S):** (Please attach the [Operational Focal Point endorsement letter\(s\)](#) with this template. For SGP, use this [OFP endorsement letter](#)).

<b>NAME</b>	<b>POSITION</b>	<b>MINISTRY</b>	<b>DATE (MM/dd/yyyy)</b>
Leonie Barnaby	Operational Focal Point	Ministry of Water, Land, Environment and Climate Change - <b>Jamaica</b>	20 February 2012
Patricia Abreu Fernandez	Operational Focal Point	Ministry of Environment and Natural Resources – <b>Dominican Republic</b>	22 February 2011
Enrique Moret Hernandez	Political and Operational Focal Point	Ministry of Science Technology and Environment - <b>Cuba</b>	16 February 2012
Diann Black-Layne	Operational Focal Point	Environment Division, Ministry of Agriculture, Lands, Housing and Environment – <b>Antigua and Barbuda</b>	19 April 2012
Edmund Jackson and Shirla Francis	Director, Environmental Management Department  Permanent Secretary	Ministry of Health, Wellness and the Environment - <b>St Vincent and the Grenadines</b>	29 February 2012
Lavern Queely	Director Economic Affairs & PSPI	Ministry of Sustainable Development – <b>St Kitts and Nevis</b>	15 February 2012
Caroline Eugene	GEF Focal Point	Ministry of Sustainable Development, Energy, Science and Technology – <b>St Lucia</b>	01 March 2012
Timothy N.J. Antoine	GEF Operational Focal Point and Permanent Secretary	Ministry of Finance, Planning, Economy, Energy and Co-operative Financial Complex - <b>Grenada</b>	08 March 2012
Gayle Francis Vaughan	GEF Operational Focal Point and Permanent Secretary	Ministry of Environment and Drainage - <b>Barbados</b>	27 March 2012

**B. GEF AGENCY(IES) CERTIFICATION**

This request has been prepared in accordance with GEF/LDCF/SCCF policies and procedures and meets the GEF/LDCF/SCCF criteria for project identification and preparation.

Agency Coordinator, Agency name	Signature	DATE (MM/dd/yyyy)	Project Contact Person	Telephone	Email Address
Maryam Niamir-Fuller, Director, GEF Coordination Office, UNEP		04/23/2012	Isabelle Van der Beck	+1-202-974-1314	Isabelle.vanderbeck@unep.org
Adriana Dinu, UNDP-GEF Officer-in-Charge		27 March 2012	Jose Troya	+ 507- 302-4636	Jose.troya@undp.org