



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

**PROJECT TYPE: Full-sized Project**

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

**PART I: PROJECT IDENTIFICATION**

Project Title:	Implementing Integrated Land, Water & Wastewater Management in Caribbean SIDS		
Country(ies):	Antigua & Barbuda; Cuba; Dominican Republic; Jamaica; Saint Kitts & Nevis; Saint Lucia; Saint Vincent & the Grenadines; Grenada, Barbados.	GEF Project ID: <sup>2</sup>	
GEF Agency(ies):	UNEP UNDP (select) (select)	GEF Agency Project ID:	00858 (UNEP)/4873 (UNDP)
Other Executing Partner(s):	CEHI; CAR/RCU; CAR/RCU LBS Regional Activity Centres – IMA and CIMAB.	Submission Date:	2012-03-28
GEF Focal Area (s):	Multi-focal: IW – BD – LD	Project Duration(Months)	48
Name of parent program (if applicable): • For SFM/REDD+ <input type="checkbox"/>	N/A	Agency Fee:	\$2,164,384.60

**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.	\$1,692,905.39	\$9,249,205.52
	<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.	\$1,692,905.39	\$9,141,689.08

<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>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.	\$1,692,905.39	\$9,141,689.08
<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.	\$1,692,905.39	\$9,141,689.08
	<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.	\$1,692,905.39	\$9,141,689.08
<b>LAND DEGRADATION 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.	\$1,872,000.00	\$10,108,800.00
	<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.	\$1,872,000.00	\$10,108,800.00
	<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.	\$1,872,000.00	\$10,108,800.00
<b>BIODIVERSITY 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.	\$5,605,961.40	\$30,272,191.56
Project management cost <sup>4</sup>			1,035,473.07	\$5,591,554.58
<b>Total project costs</b>			<b>\$20,721,961.40</b>	<b>\$112,006,108.00</b>

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

## B. PROJECT FRAMEWORK

<b>Project Objective:</b> To accelerate contribution to global targets on access to safe and reliable water supplies and improved sanitation by populations in the Caribbean, and contributing to the enhancement of the functioning of ecosystems of global importance within the Caribbean Sea basin and Caribbean SIDS in consideration of adaptation to climate change stressors, through the implementation of an integrated approach to water, land and ecosystems services management, supported by policy, institutional and legislative reforms, and implementation of more effective appropriate technologies and methodologies, and dissemination of best practices to beneficiaries across the globe.					
Project Component	Grant Type (TA/IN V)	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:\$4,764,314.30 LD:\$4,774,352.90 IW:\$1,700,000.00 -w/ 1M SGP	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).	\$11,238,667.19  <u>Breakdown funding at outcome level:</u>  C1.1= \$153,580.01 C1.2= \$7,679,000.39 C1.3= \$1,535,800.08 C1.4= \$204,773.34 C1.5= Cross-cutting C1.6=\$204,773.34 C1.7=\$460,740.02 C1.8=\$1,000,000.00	\$60,688,802.83
		<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.		

			<p><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.</p> <p><b>2.1 Investments in communal rainwater harvesting systems</b></p> <p>(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;</p> <p>(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> <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 20% 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> <hr/> <p><b>3 Land and watershed restoration and ecosystem resilience thematic area:</b> 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><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</p>		
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		<p>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.</p> <p>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);</p> <p>2. Reduction in risk posed by land degradation to communities (flood and landslide) and farmlands (soil loss and pollution);</p> <p>3. Increase in revenue generation within target communities through consumptive use of near-shore marine fisheries;</p> <p>4. Enhancement in economic activity within target communities from eco-touristic activity through ecological restoration;</p> <p>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</li> </ul>	

			<p>water supply systems;</p> <ul style="list-style-type: none"> <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>		
		<b>C1.7</b> Replication of strategies developed from each innovative interventions/solutions project and, where support and finances available, implemented	<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>		
		<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.	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><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:\$280,549.04 BD:\$280,549.04 IW:\$1,200,000.00</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>\$1,761,098.07</p> <p><u>Breakdown funding at outcome level:</u></p> <p>C2.1=\$1,056,658.84 C2.2=\$704,439.23</p>	\$9,509,929.58
		<b>C2.2</b> Strengthened national & regional capacity for IWRM and land resources (including ecosystems services) monitoring.	<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:\$280,549.04 BD:\$280,549.04 IW:\$4,264,526.93</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>\$4,825,625.00</p> <p><u>Breakdown funding at outcome level:</u></p> <p>C3.1=\$482,562.50 C3.2=\$1,688,968.75 C3.3=\$1,688,968.75 C3.4=\$965,125.00</p>	\$26,058,375.00
		<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:\$280,549.04 BD:\$280,549.04 IW:\$1,300,000.00	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.	\$1,861,098.07  <u>Breakdown funding at outcome level:</u>  C4.1=\$465,274.52 C4.2=\$372,219.61 C4.3=\$651,384.32 C4.4=\$372,219.61	\$10,157,446.02
		<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>				1,035,473.07	5,591,554.58
<b>Total project costs</b>				<b>20,721,961.40</b>	<b>112,006,108.00</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 and in-kind	\$9,000,000
GEF Agency	UNDP	In-kind	\$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	\$66,369,958
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
CSO	CWWA	Unknown at this stage	
CSO	CNIRD	Unknown at this stage	
CSO	CAWASA	Unknown at this stage	
<b>Total co-financing</b>			<b>\$112,006,108</b>

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

<b>GEF Agency</b>	<b>Type of Trust Fund</b>	<b>Focal area</b>	<b>Country name/Global</b>	<b>Project amount (a)</b>	<b>Agency Fee (b)<sup>2</sup></b>	<b>Total c=a+b</b>
UNEP	GEF TF	Multifocal	Antigua & Barbuda	\$3,996,000.00	\$444,000.00	\$4,440,000.00
UNEP	GEF TF	Biodiversity	Cuba	\$1,800,000.00	\$180,000.00	\$1,980,000.00
UNEP	GEF TF	Biodiversity	Dominican Republic	\$1,060,961.40	\$117,884.60	\$1,178,846.00
UNEP	GEF TF	Biodiversity	Jamaica	\$2,745,000.00	\$292,500.00	\$3,037,500.00
UNDP	GEF TF	Land degradation	St. Kitts and Nevis	\$630,000.00	\$70,000.00	\$700,000.00
UNEP	GEF TF	Land degradation	St. Lucia	\$360,000.00	\$40,000.00	\$400,000.00
UNEP	GEF TF	Land degradation	St Vincent & the Grenadines	\$630,000.00	\$70,000.00	\$700,000.00
UNEP	GEF TF	International Waters	All participating SIDS	\$6,710,000.00	\$671,000.00	\$7,381,000.00
UNDP	GEF TF	International Waters	All participating SIDS	\$2,790,000.00	\$279,000.00	\$3,069,000.00
<b>Total Grant Resources</b>				<b>\$20,721,961.40</b>	<b>\$2,164,384.60</b>	<b>\$22,886,346.00</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:**

Caribbean 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. These pressures are exacerbated by the extremely limited land space for sustainable settlement, industrial, commercial, touristic and agricultural development. Given the topographic constraints, development has expanded, in many cases unplanned, into the interior high-elevation areas of that are often unsuitable for supporting intensive development. These areas are sometimes within upper watershed and aquifer recharge areas, thereby posing risks of contamination of surface and ground waters, along with adverse impacts on biodiversity. The geomorphology and fragility of soils in many of the islands that are predisposed to intense rainfall events especially during the hurricane season (between June and November) can lead to acute land degradation with significant losses of topsoil under conditions of poor land management. Jamaica, Haiti, the Dominican Republic, the mountainous Windward Islands of Dominica, Grenada, Saint Lucia and Saint Vincent and the Grenadines are particularly vulnerable in this regard, where significant investment in bananas and other cash crops over decades, while building the economies and providing the base for economic diversification into other sectors, has also led to severe land degradation across many upper watershed areas in these islands.

Ever-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. Wastewater treatment in the Caribbean is below required levels. UNEP (TR-52 report, 2010<sup>6</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.

Heavy industries, oil and gas and minerals exploitation which are important in the larger countries of Jamaica, the Dominican Republic and Trinidad & Tobago, are also having marked impacts on the land and near-shore marine environments. For instance, bauxite exploitation in Jamaica over the past several decades has led to significant land degradation in upland areas with the deposit of red-mud sludge from the processing of alumina and has had negative impacts in terms of increased flood risk and deteriorating water quality in watersheds. The oil and gas industry in Trinidad & Tobago and in some of the other Caribbean countries is of concern, with the potential for large-scale pollution associated with accidental spillages and the smaller-scale, yet chronic discharges of oil-based residues into the environment. In the case of the manufacturing sector, which is varied across the islands in terms of manufacturing processes and commodity output, the effluents are similarly diverse, are more often than not, discharged untreated into receiving environments. The fact that the majority of these commercial investments tend to be clustered within port areas, the receiving coastal environments in many countries have become anoxic. The changes in the state of the coastal environments and a profile of the pollutant loads has been documented in numerous studies over the years, but is comprehensively captured in Technical Report 55 that was published by UNEP (2010).

The threats of land degradation and pollution of fresh and coastal waters has been emerging among the foremost concerns for the health and security of human populations and the environment. The

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<sup>6</sup> See report online at: <http://www.cep.unep.org/publications-and-resources/technical-reports/technical-reports>

impairment of both terrestrial and marine environments is being realized in many countries in terms of the diminished diversity of terrestrial and marine ecosystems with attendant negative economic impacts. These impacts are being manifested in fatigued soils resulting in decreased crop yields, contracted 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 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. The environment of the Caribbean, particularly its relatively pristine coastal waters, as the dominant asset of the tourism industry, is an asset that must be guarded.

Climate change now looms as the most significant driver which may accelerate the significant rate of degradation that is being imposed on the sensitive ecosystems in Caribbean SIDS. Pollution, including sedimentation of marine ecosystems will exacerbate the stresses imposed by rising sea surface temperatures (SSTs). Notwithstanding recovery of some reef areas from recent coral bleaching episodes associated with warmer sea temperatures, human-induced stresses will raise the risk of widespread die-off of weakened reef ecosystems. Under a scenario of increased 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. This will threaten water security in many areas where the water supply infrastructure is already compromised on account of operational challenges, or where demand simply outstrips supply.

While there have been commitments from Caribbean governments to increase both investments in human resource development and on-ground measures to address the issues, and most notably through the recent ratification of regional instruments such as the LBS Protocol allowing it to enter into force in 2012, governments remain challenged by availability of resources. To compound matters there remains the general perception amongst stakeholders that the state has the ultimate responsibility to make all such investments, shifting responsibility away from the private sector and civil society in general. Although these perceptions have been slowly changing, it is not at a rate that is commensurate with the urgency with which the response is needed. Reforms, from policy to legislative/regulatory and institutional levels are regarded as critical requirements in moving the agenda forward, reforms that must include the private sector as an integral partner in development. There also needs to be a paradigm shift in light of the prevailing adverse global economic climate to do more with less; demonstrate workable, innovative solutions that are culturally sensitive, make economic sense and are easily replicable across the Caribbean SIDS, drawing from experiences and lessons learnt from the GEF-IWCAM Project and other similar initiatives in the Caribbean and other SIDS regions.

In consideration of the foregoing, the project seeks to 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 ecosystem services in consideration of the urgent need to accelerate climate change resilience. This must be done within the overall framework of improved land and water (freshwater and coastal waters) resources governance; that is, the integrating watershed and coastal areas management ("IWCAM") approach. The GEF focal areas provide the opportunity to tailor interventions within a multi-focal project approach that is highly consistent with the objectives that the project is attempting to achieve. The key GEF focal areas through which the project will be implemented are International Waters (IW), Land Degradation (LD) and Biodiversity (BD).

The project objectives are highly consistent with the GEF International Waters (IW) Strategy as the project seeks to enhance the management of watershed areas, groundwater aquifers, and coastal and marine ecosystems within the Caribbean Sea basin. The GEF IW Strategy addresses the problems of fresh and coastal waters degradation through support to the development of strategic action programmes that are underpinned by integrated water resources and coastal zone management processes. The IW Strategy promotes institutional, legislative and regulatory reforms to facilitate the removal of barriers that hinder the adoption of sustainable resource management practices which is at the core of the project. The preservation of the integrity of coastal and marine fisheries is of critical concern and the strategy seeks to provide support in investments in sustainable livelihoods around utilization of marine biodiversity which is of high importance with regard to the economies that have been built using the resources of the Caribbean Sea. A critical element in the strategy is capacity building to strengthen the effectiveness of state agencies, community and civil society stakeholders in management of its national waters but also in 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.

The project is also closely consistent with the Land Degradation (LD) Strategy of the GEF that seeks to contribute towards the arresting and reversing current trends in land degradation, where 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 LD Strategy assists with the fostering of the ecosystem services approach and application of sustainable land management principles to maintain a sustainable flow of benefits from managed forest and agro-ecosystems while seeking integration with other GEF focal areas on Biodiversity, Climate Change, and International Waters. The project will incorporate all these themes within an integrated management approach using the IWRM framework, considering the watershed and associated coastal area as the spatial unit of planning. The project supports approaches on sustainable land management through National Plans of Action being advanced in the Caribbean SIDS.

The GEF Biodiversity (BD) Strategy seeks to achieve the conservation and sustainable use of biodiversity and the maintenance of ecosystem goods and services through the improvement of the sustainability of protected area systems via enhancement of sustainable financing mechanisms, the expansion in representation of terrestrial and marine ecosystems and threatened species, and enhancement of the management of existing protected areas. The BD strategic objective is a major underpinning for this project where the economic livelihoods are well represented by way of sustainable fisheries and tourism that are closely tied to maintenance of healthy ecosystems through improved pollution control measures. Watershed protection for water-related ecosystem services translates seamlessly to terrestrial biodiversity conservation. Of relevance also is the objective of mainstreaming through appropriate policy and regulatory frameworks of biodiversity conservation and sustainable use to maintain a flow of economic benefits to resource users, a consistent aim across all focal areas.

From policy to implementation level, the integrated water resources management (IWRM) framework will be applied as the overarching construct to realize the project outcomes. For management of water resources to be sustainable, consideration must be given to sustainable management of land resources given the very direct impacts of land management on water. In the case of small islands where there is a very close spatial nexus between fresh and coastal waters, coastal zone management themes are considered within IWRM. The protection of, and enhancement of ecosystems functioning from local to global scales are significant considerations in terms of flow of benefits and services in the context of water, whilst enhancing resilience to climate change-induced stresses.

**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:** The Bahamas (2006), Cuba (2003), Dominica (2004), Dominican 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)

**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). Countries that have NBSAPs under revision are the Bahamas and Saint Lucia. Other countries with completed NBSAPs (pending revision) include Barbados, Dominica, Grenada, Jamaica, Saint Kitts and Nevis, Saint Vincent and the Grenadines and Trinidad and Tobago. The Dominican Republic and Haiti are developing their first NBSAPs. 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/>

**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> National Communication to the Convention Secretariat and are in varying stages of completion of their Second National Communication, with Antigua and Barbuda, the Dominican Republic and Jamaica having submitted their 2<sup>nd</sup> National Communication. The status of submission of national communications is at the Convention website at [http://unfccc.int/national\\_reports/non-annex\\_i\\_natcom/items/2979.php](http://unfccc.int/national_reports/non-annex_i_natcom/items/2979.php). 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, and the effects on the agricultural sector and domestic water supply. With more intense hurricanes and rainfall events, the issues of flooding and land degradation through accelerated soil erosion is highlighted. Coastal zone impacts cited include shoreline erosion, saline intrusion of coastal aquifers, loss of ecosystem productivity associated with sedimentation and higher water

temperatures as related to the potential for coral bleaching. Public, plant and animal health impacts are noted in terms of proliferation of harmful vectors. The national communications propose adaptation measures in the main, given that the Caribbean countries are not significant GHG emitters, however, approaches to reduce on emissions and fuel import reduction and development of cleaner energy sources are also highlighted in national CC strategies. In the context of climate and land/water resources management, urgent interventions are needed to make water supply systems more resilient, increase water use efficiency, reduce the vulnerability of agriculture (through new agronomic and irrigation techniques) and enhance the protection of watersheds and aquifers. Effective adaptation to climate change requires changes in policy and institutional frameworks, adjustments in the incentives regimes and capacity building.

Within the NAPs, NBSAPs and National Communications to the UNFCCC, critical elements of land and water resources management are addressed which are of high relevance to the objectives that are to be met under this project.

## **B. PROJECT OVERVIEW:**

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

Small Island Developing States (SIDS) have particular needs and specific issues in relation to sustainable development and environment. Among these, water resource and quality, and wastewater management are now critical issues to nearly all SIDS throughout the world. This has been recognized through various formal statements and commitments at a number of globally significant conferences and high-level international meetings including the 5<sup>th</sup> World Water Forum (Istanbul, 2009), the United Nations Conference on Environment and Development (Rio de Janeiro) which adopted the Barbados Programme of Action, BPoA), and the Mauritius International Meeting (referred to as the SIDS+10 Meeting), which articulated the Mauritius Strategy in 2005. In 2002, at the World Summit on Sustainable Development (WSSD), in Johannesburg South Africa, a number of statements were issued related to SIDS that identified priorities, and requested that global resources be targeted to address these priorities. The requirements adopted by WSSD which are most pertinent to this concept/proposal include (i) the need to accelerate the implementation of the Barbados Programme of Action (ii) the need to provide support for development and implementation of freshwater programmes and work on marine and coastal biodiversity (iii) implementation of the GPA (Global Programme of Action for the Protection of the Marine Environment from Land-based Activities) in SIDS to control and prevent waste and pollution, (iv) the need to provide support to develop capacity to reduce and manage waste and pollution and for maintaining and managing systems to deliver water and sanitation services, (v) the need to address IWRM WSSD targets, (vi) the need to develop and implement integrated land management and water-use plans and strengthen the capacity of Governments, local authorities and communities to monitor and manage the quantity and quality of land and water resources, and (vii) the need to promote programmes to enhance in a sustainable manner the productivity of land and the efficient use of water resources in agriculture, forestry, wetlands, artisanal fisheries and aquaculture, especially through indigenous and local community-based approaches. In particular, WSSD identified the GEF as being a primary source of funding for the above initiatives.

The Caribbean Sea is an important natural resource for tourism, fisheries, maritime transportation and general recreation. The associated coastal and marine ecosystems are extremely fragile and vulnerable to human activities, especially those that take place on land. Regional and national actions are urgently needed to protect these vital marine resources within an integrative coastal zone management approach and overall public health in the Caribbean. The importance of protection of marine ecosystems in the Caribbean, particularly coral reefs in the context of economic benefits 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.

Directly related to the GPA but more specific to the Caribbean, is the Convention for the Protection and Development of the Marine Environment in the Wider Caribbean Region (Cartagena Convention) and its Protocol Concerning Pollution from Land-Based Sources and Activities (or LBS Protocol). The Cartagena Convention is a legally binding, regional agreement for the protection and development of the Wider Caribbean Region. It was developed by the countries of the Wider Caribbean and is the only legally binding agreement for the protection of the Caribbean Sea. The Convention was adopted in 1983 and entered into force in 1986. A total of 23 countries have ratified the Convention. The Convention includes focus 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; the Specially Protected Areas & Wildlife (SPA); and the LBS Protocol.

The LBS Protocol is a set of procedures developed to respond to the need to protect the marine environment and human health from land-based point and non-point sources of marine pollution. The main text of the Protocol sets forward general obligations and a legal framework for regional co-operation. It provides a list of priority source categories, activities and associated pollutants of concern. The LBS Protocol provides the framework for addressing pollution based on national and regional needs and priorities. It focuses on addressing the source of pollution and includes the promotion of Environmental Impact Assessments (EIAs), application of the most appropriate technologies and best management practices. It promotes the establishment of pollution standards and schedules for implementation. A number of the participating islands have signed and/or ratified the LBS Protocol, which has recently entered into force. Signatories now have obligations to meet, related to pollution discharges into the coastal areas of the region. As such, support (from the GEF) to address these obligations will be timely and critical, if the Protocol is to be meaningfully addressed.

Although the participating islands within this proposal differ in size and level of economic development, they share common environmental features that can have a profound influence on their development. In particular, these SIDS share problems related to high levels of pollution (both land-based and potentially marine), resultant contamination of already scarce water supplies, over-exploitation and poor management of water supplies and recharge sources, especially groundwater, increasing pressure on limited agricultural production, and rapidly disappearing unique biodiversity (particularly endemic species). Also worth mentioning is the inadequate availability of clean drinking water and health problems in many communities related to unsanitary drinking water, lack of access to sustainable sanitation services, and poor waste treatment. All of these concerns, and many other closely related issues, threaten the participating SIDS in the Caribbean.

Land degradation is a major threat to biodiversity, ecosystem stability, and society's ability to function. Because of the interconnectivity between ecosystems across scales, land degradation triggers destructive processes that can have cascading effects across the entire biosphere. Loss of biomass through vegetation clearance and increased soil erosion produce greenhouse gases that contribute to global warming and climate change. The same vegetation loss can make countries less resilient to the very effects of global warming and climate change, resulting in even more erosion, landslides, and flooding.

Several Caribbean countries party to the UNCCD and have developed final or draft National Action Plans (NAPs) that outline strategic actions to address land degradation. Principle barriers in implementation remain the general absence of mainstreaming of the concepts of sustainable land management in national developmental frameworks and administrative mechanisms associated with urban and rural land development. Human resource constraints limit effective implementation of existing legislative

and regulatory mechanisms while financial resource constraints limit investments in mitigating land degradation. 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 management. In some countries ministries with responsibility for mining also lend technical assistance for SLM. 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 but additional support is required.

Biodiversity management programmes are most effectively implemented within the national parks systems in the countries. All countries have to varying percentages of the total landmass, forests and special landscapes under protected area management. These areas are usually in the more inaccessible interior parts of the country which also serve important soil and water resource conservation functions. These areas often harbour higher species richness and diversity and in many cases, island and regional endemic fauna and flora. Many countries have either established national park authorities or otherwise manage these areas by forestry departments or via a combination of both entities. Most countries have some degree of capacity in wildlife management and flora studies with applied research often undertaken in partnership with external NGOs and universities.

Marine protected areas are associated with areas of outstanding coral reef quality which can be very expansive as in the case of the Bahamas, the Greater Antilles and in the Grenadines. Although the mountainous islands tend to have limited reef area due to the depths of the surrounding waters, these ecosystems are no less diverse and are highly important. Mangrove forests, while now degraded in many areas where development has encroached, tend to be included within some type protective management regime. The management of marine parks is usually done either through fisheries departments or by other special marine management authorities. A widely cited successful example of a multiple-use integrated stakeholder management mechanism for MPAs is the Soufriere Marine Management Area (SMMA) in Saint Lucia. The model has a self financing/sustainability mechanism which has been replicated elsewhere. A challenge that faces many of the MPAs is the issue of upland degradation that is the source for LBS of pollutants. These upland areas often lie beyond the areal jurisdiction of the MPA thereby calling for extension of the cooperation into areas outside the management authority of the competent agencies. However, few countries have developed guidelines and management protocols on integrated coastal zone management that will address the upland-marine interface in the protection of the marine assets. Applied research and advocacy around marine protected areas and other areas are active in the Caribbean with engagement of a wide range of NGO and university entities (both indigenous and external).

Economic models indicate that in some parts of the Caribbean, poverty will be rising. This poverty is directly and inevitably linked to water resources and the environment, both through cause and effect. GEF is already providing assistance on relevant issues to a large number of SIDS. The continuation of support through the GEF work programme will effectively ensure that these GEF-eligible insular global SIDS will be able to build on the assistance already provided to address their more pressing issues related to sustainable development within the context of the GEF-5 Focal Area Strategies.

This PIF proposes the development of a Full-Size GEF Multi-focal Area Project in partnership between UNEP and UNDP to address these constraints and barriers by reducing pressures on natural resources from competing land uses in the wider Caribbean landscape, and by development, adoption and implementation of an integrated approach to natural resources (including biodiversity) management (NRM), combined with Integrated Water Resource Management (IWRM) and Integrated Coastal Zone Management (ICZM) mechanisms as well as Water Use Efficiency (WUE) strategies, through a process of

policy and legislative reforms, institutional and human resource capacity building and on-the-ground innovative interventions. The PIF seeks to address multiple global environmental benefits, including those related to the protection and sustainable use of biodiversity, protection and sustainable use of land and forests, and international waters, and incorporating climate change mitigation and adaptation. Joint programming with the International Waters, Land Degradation and Biodiversity Focal Areas is being pursued, in the context of integrated watershed and coastal area management, with links to groundwater recharge. 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.

The PIF proposes the adoption of an integrated and participatory management approach; the development of more effective, appropriate technologies and methodologies; the adoption of strategies to deal with extreme and chronic events; and the adoption of more appropriate resource valuation and pricing policies. Particular emphasis will be given towards the protection and rational use of water supplies, both surface and ground waters (e.g. rainwater harvesting, groundwater recharge, pricing structures, improving efficient use, watershed management, flood control, climate change adaptation, etc) and improved pollution control and wastewater management (e.g. EcoSan, constructed wetlands, etc.). Full analysis/review of the new baseline situation priority actions will be undertaken during the project preparation phase of the project.

The IWRM approach (building on the well-tested concept of linking watershed and coastal area management as the approach for water resources management for SIDS) improves cross-sectoral efficiency and cooperation at all levels on sustainable water resources development and management, including specific sector interventions, supports the integration of water supply and use with the management of waste, sewage, coastal and groundwater protection, while recognizing that the protection and quality improvements of water are preconditions for sustaining both human livelihoods and natural ecosystems. Further, it assists realizing better allocation of water to different water user groups and in so doing stresses the importance of involving all stakeholders in the decision-making process. It also calls for gender mainstreaming in land and water management decision making. This approach is also recognized as a framework for the adaptation of water management to climate change and the management of floods and droughts. The importance of improved water management has been highlighted by the Water Forum of the Americas (2008/09) and further highlighted by the recent reports of the Intergovernmental Panel on Climate Change (IPCC) and others that have warned that climate change will have extensive impacts on water resources, particularly in SIDS. In the case of the Caribbean, the IWRM approach takes on added significance in the context of coastal area management and reduction of pollution from land-based sources (such as sewage and other wastewater) and activities (including watershed, agriculture and land management).

As part of the achievement of the Objectives and Outcomes of the project, **Component 1. Development of targeted innovative solutions in SLM 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. Expected outputs listed in the Project Framework will individually and collectively address surface, groundwater resource and coastal waters protection, land/ecosystem and watershed management, wastewater management and its impacts on the coastal zone, and water supply, water use efficiency and sanitation. The effective results can be transferred and replicated throughout the 13 Caribbean SIDS, and ideally throughout other SIDS on a global basis, as appropriate. 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 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;

Further 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. Emphasis will be put upon the protection and sustainable utilization of surface and groundwater resources and protection against groundwater pollution and sea water intrusion in the context of the threats from climate change and climate variability. Also, priorities identified in earlier projects (such as GEF-IWCAM) and as part of the National Portfolio Formulation Exercises (NPFE) will be given particular emphasis with the aim to strengthen the adaptation capacity of the SIDS through the better management of the land and water resources. During the project preparation phase, maximum synergies will be sought by coordinating activities with other WatSan, LD and related BD initiatives supporting SIDS. It should be noted that the project will seek to build synergies with the UNEP/IDB Caribbean Fund for Wastewater Management (CREW) Project that aims to develop and implement innovative, appropriate low-cost solutions to enhance community sanitation.

**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 demonstration projects 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 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 forests, 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>7</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>7</sup> In possible partnership with the Gender and Water Alliance.

**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:**

**BASELINE**

At present, Caribbean SIDS, at governmental agency and professional levels are 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 IWRM to the region, the GEF-IWCAM project brought significant resources to augment these efforts. After the closure of the GEF-IWCAM project, participating SIDS may receive further donor support in water resources management under some of the climate change resiliency interventions that are being supported by some of the donors. This is notwithstanding efforts being made to activate a CARICOM Consortium on Water, designed to coordinate the activities of regional organizations working in the area of IWRM. Most of the countries have been supported in IWRM planning or awareness-raising, and they recognize their national problems vis-à-vis water resource management within the watershed and coastal area landscape. Previous support from the GEF has led to definition of some potential solutions. Many of the islands have developed some type of action plans and strategies in relation to sustainable development issues and/or biodiversity management and conservation issues. Some have gone further and produced specific plans and strategies to address IWRM, ICZM, water use management, pollution reduction, wastewater and sewage management, drainage management etc. and some have identified or adopted authorities or other dedicated bodies to take responsibility for these issues. However, there are a number of constraints that are preventing the effective implementation of such strategies and the functioning of the responsible agencies, which include financial constraints (where policy and finances are prioritized towards development to resolve serious issues of human development and international debt); inadequacy of legislation, limited human resource capacity, low awareness, poor access to more realistic, cost-effective and practicable technologies and methodologies for mitigating the priority issues and no long-term strategy to address the repercussions of extreme events (droughts, hurricanes and flooding) and to act on chronic impacts such as saltwater intrusion.

Over two hundred years of low technology agriculture, slash and burn, down-slope tilling, absence of contour drainage, excessive land clearing and overgrazing on the majority of Caribbean islands has left indelible scars on the landscape, and has negatively influenced the lives of inhabitants. Efforts to reduce the impact, protect watersheds, and conserve endangered biodiversity while supporting traditional livelihoods have been frustrated by a weak legislative system, limited economic incentives, and a general lack of capacity at the institutional, systemic and individual level.

Inappropriate cropping systems (sugar cane until the 1990's in some islands followed by even more intensive banana cultivation in the case of the Windward Islands and Jamaica, shifting cultivation and overgrazing of livestock), and the expansion of agriculture into forested and marginal lands without the adoption of land and water conservation measures, are the most significant examples of unsustainable agriculture. In addition to the actual loss of soil, degradation is also related to the loss of soil fertility due to intensive farming systems without crop rotation, loss of soil physical structure due to soil compaction, and poor use of agricultural chemicals. The associated replacement of forests has had negative influences on biodiversity in many areas with the endangerment of species populations and in some cases, species loss altogether.

Attempts with donor agency support, have been made in the 1970s into the 1980s to implement soil conservation measures on farmlands. This corresponded to a period of expansion of banana and

sugarcane cultivation from larger estates in the less vulnerable areas, to smaller fragmented holdings located on hillsides. Distribution of tree crops to hillside farmers and the provision of technical advice were some of the support services provided by Ministries of Agriculture. These initiatives provided valuable technical contributions in terms of capacity building (for agricultural, forestry extension officers and farmers), and resulted in some short-term land degradation remediation. However, continuance of these interventions was not maintained, primarily due to inadequacies within the wider policy and institutional environments that did not allow for mainstreaming of these interventions beyond the realm of “project-driven, site-specific” actions. By extension, little consideration has been given to sourcing new mechanisms for financing sustainable land management (SLM) interventions outside of traditional government budgets. Consequently, as donor funding dried up, programmes were brought to a close. As the pressure on public funds from other sectors grows, alternative financing for SLM needs to be secured to ensure long-term continued investment in SLM in the interest of national development.

In the case of freshwater and coastal waters pollution, this is a growing area of concern. The main issue is with the extent of population growth and expansion of settlement, commercial, industrial areas and the impact that the effluent discharges are having on the receiving environment. The principle limitation is that urban landscapes were not initially planned with consideration for centralized wastewater treatment and as a result effluent is discharged with inadequate level of treatment from the numerous point and non-point land-based sources. For the newer planned settlements, hotels and industrial commercial parks, provisions are being made for wastewater management. However given the configuration of existing developed areas, the possibility of installation of WW systems is a challenge simply due to lack of space within these areas.

Although Caribbean governments have been attempting to address these issues using internal resources, the process has continued to be somewhat fragmented and has not been framed against the guiding principle of maintenance of ecosystem functionality, which forms part of the foundation for holistic sustainable development.

Recognizing the critical integrated and interlinked nature of watersheds and coastal areas in small islands and the need to develop a more sectorally-coordinated management approach, both at the national and the regional level, the GEF-IWCAM Project looked at the strengthening of participating country capacity to implement an integrated approach to the management of watersheds and coastal areas (IWCAM) through regional activities looking at 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 initiatives, which were designed for replication and up-scaling included innovative solutions in:

- **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.

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, the NGO created for the management of the Font 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), but these are mere signs of emerging process of change which need follow-up should the project have a long term impact.

#### **BUSINESS AS USUAL SCENARIO**

The business-as usual scenario is not a good one for any of the Caribbean SIDS, but particularly for the smaller countries, with limited manpower and natural resource constraints. Without any incremental intervention and assistance, the baseline can be expected to remain stagnant and the situation with respect to sustainable and efficient water use and wastewater management, SLM and BD/ecosystem services will predictably deteriorate. In the long term this will potentially result in some or all of the following: i) Deterioration in the availability and quality of freshwater resources, ii) Reduction in availability of water resources through degradation of surface and ground storage and recharge areas, iii) A general failure in coastal and watershed ecosystem functions along with the loss of associated natural habitats and biodiversity, iv) Increased LBS pollution into the watershed and coastal environment, v) Increased soil erosion (resulting in losses of topsoil, nutrients, worsening of runoff and resulting flash flooding, damage to infrastructure) and vi) General deterioration of human condition (increased poverty, reduced health and well-being, failed economies, political instability).

#### **INCREMENTAL REASONING**

The proposed alternative scenario aims to address the thematic areas of critical concern through reforms in policy, legislation and institutions; improvements to institutional and human resources capacity; development of more effective and coordinated intersectoral management approaches; identification, demonstration and up-scaling of more appropriate (to small island) technologies and strategies; adoption of 'extreme-event' strategies; adoption of cost-effective and sustainable water service pricing and tariffs; and 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 and ecosystem servicing into such plans and integrating same. A substantial proportion of the proposed GEF funding for this Concept would also be aimed at the development and implementation of on-the-ground demonstrations to remove barriers and alleviate problems preventing effective integrated water resources and wastewater management, ICZM, SLM/BD management and efficient water use within the individual participating SIDS, and to the transfer and replication of lessons and practices resulting from those demonstrations. The intended overall outcomes of a proposed Full Project will be improved and sustainable integrated land and water resources management, water supply protection and water use efficiency in all the participating SIDS.

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.

## GLOBAL ENVIRONMENTAL BENEFITS

The Caribbean Sea large marine ecosystem, sprawling over some 2.5 million square kilometres, is the second largest sea in the world, and the dominant water body connecting Caribbean SIDS, is home to second largest coral reef system of the world containing over 13% of the world's coral reefs, with many species endemic to the Caribbean. Similar can be said for the terrestrial biodiversity where the Caribbean ranks high in terms of global priority biodiversity conservation and sustainable management. As a result of their isolation, the Caribbean islands have developed a high level of endemism amongst their flora and fauna where it is estimated that upwards of 40% of floral species are found nowhere else on the planet. Further, the entire area constitutes migratory routes for birds moving between North and South America. The Caribbean region is of critical importance to global biodiversity in the context of uniqueness of species and habitats, while at a local level is of high importance to human health and well-being through priority ecosystem functions (such as clean water, agricultural capacity, availability of food, etc).

Global environmental benefits would accrue by Caribbean countries working together on priority concerns of the transboundary 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 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.

In terms of global benefits, 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 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 associated Global Environmental Benefits therefore include:

- Improved provision of agro-ecosystem and forest ecosystem goods and services with contributions to carbon sequestration, protection of terrestrial species abundance and diversity;
- Reduced vulnerability of agro-ecosystem and forest ecosystems to climate change and other human-induced impacts and;
- Contribution to maintenance of the ecosystem functioning and enhancement of resilience of fragile coastal and marine ecosystems and contribution to maintenance of reliant livelihoods dependant on marine resources.

**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 adaptative 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. Local communities and women groups would be involved in the designing and implementation of small-scale 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.

Coastal waters account for just 7% of the total area of the ocean. In the Caribbean SIDS, the entire island may be considered a coastal zone. However the productivity of ecosystems such as coral reefs and blue forest ecosystems means that this small area forms the basis of the world’s primary fishing grounds, supplying an estimated 50% of the world’s fisheries. They provide vital nutrition for close to 3 billion people, as well as 50% of animal protein and minerals to 400 million people of the least developed countries in the world. The coastal zones deliver a wide range of benefits to Caribbean society: filtering water, reducing effects of coastal pollution, nutrient loading, sedimentation, protecting the coast from erosion and buffering the effects of extreme weather events. Coastal ecosystem services have been estimated globally to be worth over US\$25 trillion annually, ranking among the most economically valuable of all ecosystems. Much of the degradation of these ecosystems in the Caribbean not only comes from unsustainable natural resource use practices, but also from poor watershed and land management, poor coastal development practices and poor waste management. The protection and restoration of coastal zones, through coordinated integrated management would also have significant and multiple benefits for health, labor productivity and food security of Caribbean communities. The project aims to ensure that terrestrial and coastal ecosystems continue to provide economic benefits within the regional sustainable development framework.

**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>

<b>Risk Statement</b>	<b>Risk Level</b>	<b>Risk Mitigation Strategy</b>
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.
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 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 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 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 over the life of the project.

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

#### **UNDP**

UNDP with its regional programmes and national presence will contribute in-kind and 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>	13 February 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/yy yy)	Project Contact Person	Telephone	Email Address
Maryam Niamir-Fuller, Director, GEF Coordination Office, UNEP		March 28, 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