REQUEST FOR CEO APPROVAL[1]

PROJECT TYPE: Full-sized Project
TYPE OF TRUST FUND: GEF Trust Fund

PART I: PROJECT INFORMATION

Project Title: Integrating Water, Land and Ecosystems Management in Caribbean Small Island Developing States (IWEco)			
Country(ies):	Antigua & Barbuda; Cuba; Barbados; Dominican Republic; Grenada; Jamaica; Saint Kitts & Nevis; Saint Lucia; Saint Vincent & the Grenadines; Trinidad & Tobago	GEF Project ID:[2]	4932
GEF Agency(ies):	UNEP UNDP	GEF Agency Project ID:	00858 (UNEP)/4873 (UNDP)
Other Executing Partner(s):	UNEP CAR/RCU; CARPHA	Submission Date:	16/12/2014
GEF Focal Area (s):	Multifocal Area	Project Duration(Months)	60
Name of Parent Program (if applicable): For SFM/REDD+ ☒	SFM	Agency Fee ($):	$2,070,887

A. FOCAL AREA STRATEGY FRAMEWORK[3]:

Focal Area Objectives	Expected FA Outcomes	Expected FA Outputs	Trust Fund	Grant Amount ($)	Cofinancing ($)
IW-1	**Outcome 1.1:** 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.	GEF-TF	$1,655,705	$7,986,367
	Outcome 1.3: 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	Types of technologies and measures implemented in local demonstrations and investments.		$2,800,599	$10,864,953

[1] It is important to consult the GEF Preparation Guidelines when completing this template
[2] Project ID number will be assigned by GEFSEC.
[3] Refer to the reference attached on the Focal Area Results Framework when filling up the table in item A.

	protection.				
	Outcome 1.4: 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.		$1,557,237	$7,570,472
IW-2	**Outcome 2.1:** 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.	GEF-TF	$2,579,817	$11,144,878
	Outcome 2.3: 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.		$2,514,989	$8,944,626
LD-3	**Outcome 3.1:** Enhanced cross-sector enabling environment for integrated landscape management.	**Output 3.1** Integrated land management plans developed and implemented.	GEF-TF	$279,085	$1,566,634
	Outcome 3.2: Integrated landscape management practices adopted by local communities.	**Output 3.2** INRM tools and methodologies developed and tested.		$346,399	$1,681,233
	Outcome 3.3: Increased investments in integrated landscape management.	**Output 3.4** Information on INRM technologies and good practice guidelines disseminated.		$1,416,490	$1,440,464
BD-2	**Outcome 2.1:** Increase in sustainably managed landscapes and seascapes that integrate biodiversity conservation.	**Output 2.** National and sub-national land-use plans (at least 4) that incorporate biodiversity and ecosystem services valuation.	GEF-TF	$2,945,973	$7,206,703
SFM-1	**Outcome 1.1**: Enhanced enabling environment within the	**Output** 1.1: Effectiveness of policies	GEF-TF	$623,428	$2,040,594

	forest sector and across sectors.	that integrate SFM principles (score as recorded by tracking tool).			
	Outcome 1.2: Good management practices applied in existing forests	**Output** 1.2 (b): Enhanced carbon sinks from reduced forest degradation in over 4,500 ha.		$1,758,984	$3,906,635
	Outcome 1.3: Good management practices adopted by relevant economic actors.	**Output** 1.3 (b): Services generated in the wider landscape.		$558,393	$1,579,632
Support to Small Grant Programme				$1,000,000	--
Project management costs[4]				535,473	$1,927,703
Midterm and Terminal Evaluation costs				150,000	$156,297
		Total project costs		**$20,722,572**	**$68,017,191**

[4] GEF will finance management cost that is solely linked to GEF financing of the project.

B. PROJECT FRAMEWORK

Project Objective: to contribute to the preservation of Caribbean ecosystems that are of global significance and the sustainability of livelihoods through the application of existing proven technologies and approaches that are appropriate for small island developing states through improved fresh and coastal water resources management, sustainable land management and sustainable forest management that also seek to enhance resilience of socio-ecological systems to the impacts of climate change.

Project Component	Grant Type	Expected Outcomes	Expected Outputs	Trust Fund ($)	Grant Amount ($)	Cofinancing ($)
Component C1 - Development and Implementation of Integrated Targeted Innovative, climate-change resilient approaches in SLM, IWRM (including WUE), ICZM and maintenance of ecosystem services	TA	**Outcome C1.1** Verifiable, evidence-based stress reduction at project sites through appropriate sustainable water, land and ecosystems management interventions that account for climate change.	**Output 1.1.a.** Watershed protection and restoration measures	GEF-TF	1,480,543	1,980,591
			Output 1.1.b. Riparian restoration solutions, particularly upstream of surface water sources and recharge zone		655,800	1,209,257
			Output 1.1.c. Coastal forest and estuarine (mangrove) armoring measures especially in high risk areas for storm inundation		1,715,420	3,635,630
			Output C1.1.d. Effluent management (water reuse, recycling) and pollution reduction measures for commercial/industrial entities, agricultural and settlement areas		1,173,685	1,392,778
			OUTPUT 1.1.e. Biodiversity enhancement measures for increasing native and endemic population species abundance and diversity		2,983,390	8,376,464
		Outcome C1.2 Enhanced livelihood opportunities and socio-economic co-benefits for targeted communities from improved ecosystem services functioning	**Output C1.2.a.** Augmented water supply systems employing rainwater harvesting within critically water-stressed communities		50,500	50,000
			Output C1.2.b. Upgraded water supply systems for delivery and greater access to safe water supply within critically water-stressed communities		15,800	503,104
			Output C1.2.c. Employment and revenue generation opportunities by communities and private sector associated with project activities (SGP)		1,245,000	1,755,770
			Output C2 Strengthened national monitoring systems		1,424,500	5,121,524

			Output C3: Strengthened national policy, legislation and enhanced capacity		960,390	5,091,953
			Output C4: Knowledge products, tools and methods		598,386	1,394,620
Component C2 - Strengthening of the Sustainable Land Management (SLM), Integrating Water Resources Management (IWRM) (and Water Use Efficiency (WUE)) and ecosystems Monitoring, and Indicators framework	TA	**Outcome C2.1** Strengthened national and regional systems for monitoring of environmental status with respect to key international agreements	**Output 2.1.1** Regional environmental indicators compendium		132,910	4,292,200
			Output 2.1.2 Scientific research protocols and studies to support monitoring at national projects		639,252	3,693,350
			Output 2.1.3. Installed field monitoring and assessment capabilities		265,810	2,712,125
			Output 2.1.4 Decision support system (DSS) tools		265,810	1,572,825
Component C3 - Strengthening of the Policy, legislative and institutional reforms and capacity building for Sustainable Land Management (SLM), Integrating Water Resources Management (IWRM)/Water Use Efficiency (WUE) and ecosystem services management	TA	**Outcome C3.1** Strengthened policy and legislation for the effective management of water, land and ecosystems resources that account for climate change	**Output 3.1.1** New and/or revised national-level policies and regulations for water, land and ecosystems management		1,798,930	2,576,400
			Output 3.1.2 New and/or upgraded national and regional-level plans and strategies for improved water, land and ecosystems management		1,798,930	3,101,800
		Outcome 3.2 Strengthened capacity of national and regional institutions and other stakeholders for water, land, and ecosystems management that accounts for climate change	**Output 3.2.1** Strengthened national participatory consultative and coordination mechanisms		416,188	2,012,400
			Output 3.2.2 Training and capacity building programmes to support implementation of water, land and ecosystems management across government, private sector agencies and civil society organizations		1,027,960	3,920,400
Component C4 - Enhancing knowledge exchange, best-practices, replication and stakeholder involvement	TA	**Outcome C4.1.** Improved engagement and information access for practitioners and other stakeholders through targeted knowledge sharing networks	**Output 4.1.1** Public awareness / Public education (PA/PE) Strategy for the regional and national project components		28,300	1,310,960
			Output 4.1.2 Knowledge, Attitude and Practice (KAP) assessments during the project		28,300	597,000

			Output 4.1.3 Best practice guidelines, Lessons learnt outputs and Communities of Practice		307,811	1,981,000
			Output 4.1.4 Innovative communications and learning tools		226,370	2,800,540
			Output 4.1.5. Project website (according to IW:LEARN guidelines) and media products		154,070	1,595,500
			Output 4.1.6 Professional exchanges; participation at regional and international fora		99,040	1,760,500
			Output 4.1.7 7th GEF-International Waters Conference		345,930	290,000
			Output 4.1.8 Two GEF-IWECO Project Partnership Conferences		198,074	1,204,500
			Subtotal		**20,037,099**	**65,933,191**
			Project Management Cost (PMC)		535,473	1,927,703
			Monitoring & Evaluation (MTE/TE)		150,000	156,297
			Total project costs		**20,722,572**	**68,017,191**

SOURCES OF CONFIRMED COFINANCING FOR THE PROJECT BY SOURCE AND BY NAME ($)

Sources of Co-financing	Name of Co-financier (Source)	Type of Co-financing	Co-financing Amount ($)
GEF Agency	UNEP Global Programme of Action	In-kind	3,000,000
GEF Agency	UNEP Car/RCU	In-kind	7,000,000
GEF Agency	UNDP	In-kind	700,000
Other Multilateral Agency (ies)	Caribbean Public Health Agency (CARPHA)	In-kind	17,100,000
Other Multilateral Agency (ies)	Organization of Eastern Caribbean States (OECS)	In-kind	12,000,000
Other Multilateral Agency (ies)	Food and Agricultural Organization (FAO)	In-kind	325,500
National Government	National Oceanic and Atmospheric Administration (NOAA)	In-kind	1,200,000
National Governments	National governments of the Caribbean	In-kind	19,670,691
Other	University of the West Indies (UWI)	In-kind	3,000,000
Other	Global Water Partnership - Caribbean (GWP-C)	In-kind	346,000
Other	The Nature Conservancy (TNC)	In-kind	350,000
CSO	Caribbean Natural Resources Institute (CANARI)	In-kind	2,070,000
Other Multilateral Agency (ies)	Organization of American States (OAS)	In-kind	180,000
Other - University	Institute for Water, Environment & Health (UNU-INWEH)	In-kind	100,000
Other Multilateral Agency (ies)	Water Centre for the Humid Tropics of Latin America and the Caribbean (CATHALAC)	In-kind	100,000
CSO	Caribbean Student Environmental Alliance (Caribbean SEA)	In-kind	200,000
Other	International Union for Conservation of Nature (IUCN)	In-kind	120,000
CSO	Caribbean Water & Sewerage Association (CAWASA)	In-kind	100,000
CSO	PCI Media Impact	In-kind	455,000
Total Co-financing			**$ 68,017,191**

C. GEF/LDCF/SCCF/NPIF RESOURCES REQUESTED BY AGENCY, FOCAL AREA AND COUNTRY[1]

GEF Agency	Type of Trust Fund	Focal area	Country name/Global	(in $)		
				Project amount (a)	Agency Fee (b)[2]	Total c=a+b
UNEP	GEF TF	Land degradation	Antigua & Barbuda	$846,000	$84,600	$930,600
UNEP	GEF TF	Biodiversity	Cuba	$1,800,000	$180,000	$1,980,000
UNEP	GEF TF	Biodiversity	Dominican Republic	$1,060,961	$106,096	$1,167,057
UNEP	GEF TF	Biodiversity	Jamaica	$2,745,000	$274,500	$3,019,500
UNEP	GEF TF	Land degradation	St. Kitts and Nevis	$630,000	$63,000	$693,000
UNEP	GEF TF	Land degradation	St. Lucia	$360,000	$36,000	$396,000
UNEP	GEF TF	Land degradation	St Vincent & the Grenadines	$630,000	$63,000	$693,000
UNEP	GEF TF	Land degradation	Trinidad & Tobago	$273,973	$26,027	$300,000
UNEP	GEF TF	International Waters	All participating SIDS	$8,000,000	$800,000	$8,800,000
UNDP	GEF TF	International Waters	All participating SIDS	$1,500,000	$150,000	$1,650,000
UNEP	GEF TF	Multi-focal Areas (SFM)	Regional	$2,876,637	$287,664	$3,164,301
Total Grant Resources				**$20,722,571**	**$2,070,887**	**$22,793,458**

D. CONSULTANTS WORKING FOR TECHNICAL ASSISTANCE COMPONENTS:

Component	Grant Amount ($)	Cofinancing ($)	Project Total ($)
Local consultants*	4,680,968	4,378,795	9,059,763
International consultants	100,000	1,042,000	1,142,000
Total	**4,780,968**	**5,420,795**	**10,201,763**

*Local consultants are from within the Caribbean region

E. DOES THE PROJECT INCLUDE A "NON-GRANT" INSTRUMENT? No

(If non-grant instruments are used, provide in Annex E an indicative calendar of expected reflows to your Agency and to the GEF/LDCF/SCCF/NPIF Trust Fund).

PART II: PROJECT JUSTIFICATION

A. DESCRIBE ANY CHANGES IN ALIGNMENT WITH THE PROJECT DESIGN OF THE ORIGINAL PIF

1. PROJECT NAME CHANGE

At PIF submission the project title was Implementing Integrated Land, Water & Wastewater Management in Caribbean SIDS. In consultation with stakeholders, the name of the project was changed to **Implementing Integrated Land, Water & Ecosystems Management in Caribbean SIDS (IWEco Project)** in consideration of the significant funding from biodiversity and the sustainable forest management focal areas.

2. COUNTRY ENDORSEMENT OF THE PROJECT SUBSEQUENT TO PIF APPROVAL

Trinidad and Tobago endorsed the project after PIF approval, committing US$300,000 under their national STAR allocation toward the land degradation focal area. The area of focus for the country is addressing acute land degradation within the Valencia area of northern Trinidad. The additional resources from Trinidad and Tobago raised the overall value of project from US$20,448,598 to US$20,722,571 (considering $273,973 for on-ground activities and $26,027 for agency fee).

3. CHANGES IN SCOPE OF NATIONAL INTERVENTIONS UNDER COMPONENT 1

The following are the changes to the national project investments from the PIF submission that evolved based on agreed priority during national stakeholder consultations in the FSP design phase. The design of the national interventions are decidedly more integrative across the GEF focal areas in keeping with the overall design of the project.

Antigua and Barbuda: The targeted investment will focus on addressing acute land degradation associated with the illicit and widespread sewage and waste oil disposal into the ambient environment that affects many locations across the country, and has adverse human and ecosystem health impacts. Poor regulation and enforcement are underlying factors. The project will build on technical pollution and land degradation control investments and innovative fiscal incentive policy and regulatory measures to enhance recycling of both wastewater and oily waste and, support local enterprise development and to reduce land degradation.

Cuba: National stakeholder consultations resulted in selection of the following areas for national targeted interventions; (1) the Guanabo watershed in the East Havana Area along the country's northern coast, (2) the Arimao watershed in the Cumanayagua-Cienfuegos Area in the country's southeast, (3) the Agabama River Basin in the Trinidad-Sancti Spiritus Area in the country's southeast and (4) the San Juan watershed within the Santiago de Cuba Area in the country's east. The selection of these areas was intended to broaden the scope of learning over a wider geographical area, contribute to impacts at the national level and engage more stakeholders in a network, deemed to be more integrative and scalable to the national level.

Saint Kitts and Nevis: In the stakeholder dialogues during FSP design the locations for targeted investments are now more focused than at PIF submission. The selected area for St Kitts is the College Ghaut, the main river that drains areas the eastern part of the country in the vicinity of the capital city Basseterre which is prone to flooding and loss of property due to severe land degradation in the ghaut. In Nevis, project will address the destructive sand mining and quarrying practices that are negatively impacting the near-shore environment particularly in terms of the fisheries resources.

St. Vincent and the Grenadines: The Georgetown watershed in the eastern part of the country is now the target for investment. The watershed was severely impacted by the passage of Hurricane Tomas in October 2010 and storms in April 2011 that damaged infrastructure and caused damage and losses to agricultural investments. Under the project, riparian reforestation along the main river and installation of land stabilization measures will demonstrate innovative land

degradation control solutions for replication across the country. These investments are heavily oriented toward enhancing climate resilience.

4. GENDER MAINSTREAMING AND TREATMENT/PLACEMENT WITHIN THE PROJECT FRAMEWORK

In line with the CARICOM strategy on "Strengthening Capacity in the Compilation of Social/Gender and Environment Statistics and Indicators" and in compliance with its social and gender implementation plan, keeping with national commitments to the implementation of their national gender policies such as in Antigua Barbuda, Cuba, the Dominican Republic, Jamaica, Saint Lucia and, Saint Vincent and the Grenadines, and in response to the GEF-6 strategy on gender mainstreaming
(PL.SD_.02.Policy_on_Gender_Mainstreaming.05012012.Final_-1), it is envisaged that gender mainstreaming will be an integral part of the project and process towards the achievement of equity in social development.

In recognition of the relevance of gender to national development, most CARICOM governments have indeed established national machineries for the advancement of women and gender equality, however, despite the espoused commitments there are still many areas of inequalities that remain problematic. The promotion of gender equality continues to be relegated to a lower level of national priority. The findings from the mainstreaming of gender emanating from this project will contribute greatly to understanding the gender components of human development, the kernel of any effective environmental development strategy.

As described in the project documentation both in the umbrella document and in the national interventions project descriptions, the component on gender mainstreaming listed as C4.4 (under Component 4) of the PIF is being integrated within execution of the national sub-projects under Component 1 and under Regional Component (sub-project) 3 related to policy, mainstreaming and capacity building. Gender-based considerations will be more appropriately accounted for within the scope of the on-ground investments, and during project implementation, gender-based indicators will be tracked so as to facilitate appropriate analyses. At the project regional level, gender mainstreaming will be evaluated and supported under Component 3 with respect to contributions to design of gender-sensitive policy and enhanced capacity building.

The project will promote equitable gender participation in project implementation and replication. Emphasis will be placed on advancing gender mainstreaming within policy and capacity building in support of all the components. Gender audits and targeted analyses to ascertain derived benefits by stakeholders will be conducted, along with training that will strengthen gender-equitable access to ecosystem services, safe and adequate water, sanitation, food security and other benefits derived from project implementation. An "How to Manual" on gender mainstreaming will be prepared as an important contribution of the project to the region. Importantly, support in this area will also assist in positioning the countries in alignment of the enabling frameworks that respond to the policy directions of the GEF6 replenishment around the theme of the Food, Water, Energy and Ecosystems nexus.

5. CHANGE IN THE INSTITUTIONAL STATUS OF THE CO-EXECUTING AGENCY

Since the submission of the PIF the co-executing agency, the Caribbean Environmental Health Institute (CEHI), one of 5 regional health institutes of the Caribbean Community (CARICOM) was integrated within an umbrella agency, the Caribbean Public Health Agency (CARPHA) as of 1st January 2013. The ex-CEHI is now the Environmental and Sustainable Development Department (EHSD) of CARPHA. It must be underscored that the Department still operates within the same scope of responsibilities as under CEHI and retains the technical capability as well as the diagnostic capability of its accredited environmental laboratory. CARPHA's EHSD retains at the CARICOM level, lead responsibility for matters of pollution control related to wastewater, solid waste management, chemicals and hazardous substances management, and continues to service the CARICOM Member States in providing technical and policy level assistance in environmental resource management. As such CARPHA, through its EHSD, remains well-placed to continue support to the IWEco Project as a co-executing partner. Under the wider CARPHA agency arrangement the Department has access to additional technical,

research and diagnostic resources to strengthen linkages between the state of environment, health and maintenance of quality of livelihoods.

6. CHANGE IN PROJECT TIMEFRAME

At PIF submission the project timeframe was 4 years. However, the overall project timeframe was increased by one year given the complexity and scope of the project. However the national project interventions all remain to be implemented over 4 years (in the case of Saint Lucia, the implementation timeframe is 3 years).

7. AGENCY PARTNERSHIPS

New partners since PIF submission: Over the course of FSP development additional partners have committed co-financing to the project (over those identified at PIF submission). They are as follows:

- Food and Agricultural Organization (FAO)
- Global Water Partnership - Caribbean (GWP-C)
- Organization of American States (OAS)
- Institute for Water, Environment & Health (UNU-INWEH)
- Water Centre for the Humid Tropics of Latin America and the Caribbean (CATHALAC)
- Caribbean Student Environmental Alliance (Caribbean SEA)
- International Union for Conservation of Nature (IUCN)
- Caribbean Water & Sewerage Association (CAWASA)
- PCI Media Impact

These partners account for an additional US$1,580,500 co-financing.

Changes in partnerships since PIF submission: McGill University listed as a co-financing partner at PIF submission stated that they no longer have active complementary initiatives and therefore should not be listed as a co-financing partner. Sandals Resorts was listed at PIF submission as providing 'nominal' co-financing. As at FSP submission they have not been able to provide written commitment but continue to express interest for collaboration. Similarly, negotiations were held with Coca Cola's business unit and while there was positive reaction, they stated that they are unable to undertake further commitments at this time. During FSP implementation there may be possibilities for collaboration.

8. CO-FINANCING COMMITMENT

The total co-financing raised at FSP submission was US$68,017,191; this is a shortfall of US$49,988,917 or attainment of 58% of the US$118,006,108 target at PIF approval. This was due mainly to shortfall in commitment from the countries from governments. It must be stressed however that all national (government) partners and the agency partners remain confident that this shortfall will not compromise project execution. The project has established very strong linkages with core Caribbean regional agencies and international partners that have traditionally have supported environmental resources management and response to climate change adaptation and mitigation in the Caribbean. Further partnerships will be built during project implementation with access to new co-financing.

National co-financing shortfall: At PIF submission the estimate of CF from national governments was $72,369,958, however at FSP submission the amount raised amounted to $19,670,691. This is attributed to (i) changing circumstances in terms of implementation of national complementary projects and (ii) inability to obtain formal co-financing letters from local partner government agencies and other organizations. It should also be noted that a significant factor in raising national-level co-finance (to meet the required 1:5 co-financing ratio) are the relatively small sizes of relevant public and private sector investments in small Caribbean countries. It should be noted that at the GEF 5 Assembly convened in May 2014, the GEF Caribbean and Pacific Constituencies advocated a 'considered approach' for SIDS in meeting co-financing requirements, noting that the stated co-financing ratio of 6:1 for the whole GEF-6 portfolio will place LDCs and SIDS in an extremely

difficult position given their limited co-financing raising opportunities, drawing directly on experiences with project co-financing requirements, the GEF-IWEco Project development process bearing evidence.

Agency partner co-financing shortfall: As noted previously some partners listed at PIF have not offered written co-financing by FSP submission. These are McGill University, the Caribbean Development Bank, the Climate Investment Funds (under the Caribbean Community Climate Change Centre and the Inter-American Development Bank), Sandals Resorts and Coca-Cola. The combined total of co-financing was US$3,394,150. These agencies however remain listed as partners during the implementation phase and will be engaged with the good possibility of formalized co-financing contribution. UNDP's co-financing was also revised downwards from US$1 million at PIF submission to US$700,000.

Assignment of co-finance: A portion of agency co-financing was assigned to countries. Co-financing from UNEP and UNDP was assigned to all countries; from the OECS Secretariat to the OECS Member Countries and from CARPHA and UWI to CARICOM Member States. The assignment is as follows:

Country	UNEP Car/RCU	UNDP	CARPHA	OECS	UWI	Total CF
Antigua & Barbuda	210,000	35,000	448,875	840,000	75,000	**1,608,875**
Barbados	210,000	35,000	448,875		75,000	**768,875**
Cuba	210,000	35,000				**245,000**
Dominican Republic	210,000	35,000				**245,000**
Grenada	210,000	35,000	448,875	840,000	75,000	**1,608,875**
Jamaica	210,000	35,000	448,875		75,000	**768,875**
St.Kitts & Nevis	210,000	35,000	448,875	840,000	75,000	**1,608,875**
Saint Lucia	210,000	35,000	448,875	840,000	75,000	**1,608,875**
St Vincent & the Grenadines	210,000	35,000	448,875	840,000	75,000	**1,608,875**
Trinidad & Tobago	210,000	35,000	448,875		75,000	**768,875**

The overall co-financing assignments to project component is as follows:

Contributor	Amount (US$)	Component 1	Component 2	Component 3	Component 4	Component 5	Component 6
UNEP GPA	3,000,000	0	1,020,000	990,000	990,000	0	0
UNEP Car/RCU	7,000,000	2,100,000	1,050,000	1,050,000	1,400,000	1,321,852	78,148
UNDP	700,000	350,000	0	0	350,000	0	0
Caribbean Public Health Agency (CARPHA)	17,100,000	3,591,000	4,275,000	4,275,000	4,275,000	605,852	78,148
Organization of Eastern Caribbean States (OECS)	12,000,000	4,200,000	2,400,000	3,600,000	1,800,000	0	0
Food and Agricultural Organization (FAO)	325,500	0	325,500	0	0	0	0
National Oceanic and Atmospheric Administration (NOAA)	1,200,000	0	1,200,000	0	0	0	0
Governments of the Caribbean	19,670,691	19,670,691	0	0	0	0	0
University of the West Indies (UWI)	3,000,000	600,000	1,800,000	600,000	0	0	0
Global Water Partnership - Caribbean (GWP-C)	346,000	0	0	346,000	0	0	0

Contributor	Amount (US$)	Component 1	Component 2	Component 3	Component 4	Component 5	Component 6
The Nature Conservancy (TNC)	350,000	0	0	350,000	0	0	0
Caribbean Natural Resources Institute (CANARI)	2,070,000	0	0	0	2,070,000	0	0
Organization of American States (OAS)	180,000	0	0	180,000	0	0	0
Institute for Water, Environment & Health (UNU-INWEH)	100,000	0	100,000	0	0	0	0
Water Centre for the Humid Tropics of Latin America and the Caribbean (CATHALAC)	100,000	0	100,000	0	0	0	0
Caribbean Student Environmental Alliance (Caribbean SEA)	200,000	0	0	0	200,000	0	0
International Union for Conservation of Nature (IUCN)	120,000	0	0	120,000	0	0	0
Caribbean Water & Sewerage Association (CAWASA)	100,000	0	0	100,000	0	0	0
PCI Media Impact	455,000	0	0	0	455,000	0	0
Totals	**68,017,191**	**30,511,691**	**12,270,500**	**11,611,000**	**11,540,000**	**1,927,704**	**156,296**

A1. National strategies and plans or reports and assessments under relevant conventions, if applicable, i.e. NAPAS, NBSAPs, national communications, TNAs, NCSA, NIPs, PRSPs, NPFE, Biennial Update Reports, etc. NA

A.2. GEF focal area and/or fund(s) strategies, eligibility criteria and priorities. NA

A.3 The GEF Agency's comparative advantage: NA

A4. Describe the project baseline and the problem(s) that the intervention seeks to address:

The Caribbean Region lies between the North and South American sub-continents between 10° and 23° north latitude and 59° and 80° west longitude with countries within the region bordering the Caribbean Sea. Cuba has the largest area of 110,900 square kilometers, followed by Hispaniola [5] with an area of 76,480 km² and Jamaica with a land area of 10,831 km². The islands of the Eastern Caribbean are substantially smaller, the largest of these (not including the French overseas Departments of Martinique and Guadeloupe) being Dominica at 750 km² while St. Kitts and Nevis is the smallest independent state with a land area of 269 km². The Caribbean islands have varying geological and topographical characteristics ranging from predominantly low-lying coral limestone formations (e.g. Barbados) to mixed volcanic and sedimentary limestone formations (e.g. the larger islands such as Jamaica and Cuba), to rugged volcanic formations where the elevations exceed 900 metres. The interior landscapes of Jamaica and Hispaniola are also very rugged with high mountain ranges of over 2,000 metres in

[5] Made up of the Dominican Republic which has a total area of 48,700 square kilometers, and Haiti with an area of 27,800 square kilometers

elevation.

The populations of the Caribbean countries vary mainly in relation to size[6]; Cuba - 11.3 million, Dominican Republic – 9.5 million; Jamaica – 2.7 million; Barbados – 273,000; Saint Lucia – 160,000; Saint Kitts & Nevis - 49,300. The larger islands of the Greater Antilles have relatively higher population densities with more diversified economies with a high proportion dedicated to farming and other agricultural practices. The smaller eastern Caribbean (Lesser Antilles) islands are characterized by relatively lower population densities and agriculture and other small-scale industries confined to the narrow coastal zones. Caribbean economies have been gradually transitioning away from agriculture, which was the traditional mainstay, to manufacturing, tourism and financial services. The tourism sector, contributes approximately 20% of overall foreign exchange earnings, and about 12% of total employment[7] although in several of the smaller countries, tourism contributions by far exceeds that of other sectors. It should be noted that however the tourism sector is just as vulnerable as the agricultural sector to external shocks; heightening this vulnerability is the threat posed by climate change and associated sea level rise, compounded by increased hurricane occurrence and damaging storm surges.

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

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

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

[6] 2005 data sourced from databases from the Caribbean Development Bank the World Bank and the United Nations Development Programme; referenced in the Caribbean Position Paper to the 5th World Water Forum

[7] World Travel and Tourism Council. 2007

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

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

According to the Conservation International (CI), the Caribbean Islands 'hotspot' support exceptionally diverse ecosystems. The Hotspot has dozens of highly threatened species, and also remarkable for the diminutive nature of much of its fauna, boasting the world's smallest bird (the tiny bee hummingbird, endemic to Cuba) and smallest snake found on St. Lucia. The region contains some 6,550 endemic plant and just over 200 threatened endemic bird, reptile and amphibian species. BirdLife International (2010) notes that of 11,000 plant species, 72% are endemic; 95% of the reptile and 100% of the amphibian species are endemic to the Caribbean. According to CI, of the original extent of hotspot vegetation of 229,549 km², only some 22,955 km² remains. Birdlife International (2010) adds that roughly 8 to 35% of species within the major marine taxa found globally are endemic to the Caribbean hotspot.

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

Water, land, forest and biodiversity challenges

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

Given the spatial and temporal scarcity of water resources in many countries of the Caribbean, in terms of supply reliability, numerous communities suffer from inadequate availability of clean drinking water and are faced with associated health problems due to unsanitary drinking water, lack of access to sustainable sanitation services, and poor wastewater treatment. Investments by water utilities are hampered by under-capitalization and there is a lack of appropriate governance arrangements to facilitate coordinated management of the water resources along

with service provision. IWRM approaches, while becoming better appreciated in the Caribbean have not seen the level of evolution required to make significant changes in mainstreamed inter-sectoral governance for water and sanitation. Water source availability in terms of quality and quantity of the resource has been negatively impacted by poor land management practices.

Expanding development pressures have seen the dramatic increase in the generation of land-based sources of marine pollution from a wide range of point and non-point sources. UNEP (TR-52 report, 2010[8]) estimates that as much as 60 % of wastewater entering the Caribbean Sea is currently untreated. The Pan American Health Organization (PAHO) estimated in 2001 that 51.5 % of households in the Caribbean Region lacked sewer connections of any kind (many rely on on-site septic/soak away systems); only 17 % of households were connected to acceptable collection and treatment systems. Anecdotal evidence suggests that these figures have improved somewhat since 2001 but the overall situation remains inadequate. Effluents from heavy industries, manufacturing, oil and gas and minerals exploitation are also having marked impacts within the land and near-shore marine environments. The receiving coastal environments off most industrial/commercial centres and commercial ports in many countries have become anoxic. Pollution and land degradation impacts are being manifested in the near-shore coastal environment resulting in loss of productivity of near-shore fisheries with an increase in catch effort from having to exploit deeper water resources, degraded beaches and recreational areas with adverse human health risks and compromised quality of touristic investments.

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

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

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

[8] See report online at: http://www.cep.unep.org/publications-and-resources/technical-reports/technical-reports

aquifer recharge threatening water security in many in areas where the water supply infrastructure is already compromised on account of operational challenges, or where demand simply outstrips supply.

Capacity and mainstreaming challenges

Efforts to reduce the negative environmental impacts, protect watersheds, and conserve endangered biodiversity while supporting traditional livelihoods have been frustrated by generally weak policy, regulatory and institutional environments. Human and financial resources availability within responsible state agencies remain constrained and compounded by limited economic incentives that will support private sector engagement to invest in greener, cleaner production processes.

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

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

BASELINE: Country profiles:

In the response to the challenges outlined above, the following are policy and institutional responses and priority interventions by the lead national agencies in the thematic areas of (i) water resources, (ii) sustainable land management and (iii) biodiversity resources management (**note**: sustainable forest management is treated as cross-cutting in this narrative) that have been deemed of priority at the national level and constitutes the baseline.

Antigua and Barbuda

Water resources management: The key issue for the country is water scarcity against demands. This is as a consequence of very limited available natural surface and ground water resources. Another issue of concern is pollution of surface water bodies and coastal waters. The Water Business Unit of the Antigua Public Utilities Authority (APUA) has lead statutory responsibility for water resource management, however this role is limited largely to water abstraction. The APUA invests approximately US$15.1 million in the operational cost and management of the Water Business Unit on an annual basis. The Environment Division supports technical and policy backstopping for water resources management with an estimated value of US$50,000 per annum. The Central Board of Health participates in this process by assuming responsibilities for water safety, conducting random sampling interventions on a monthly basis. Its annual investment in these programmes approximates US$200,000.

Sustainable land management: The main issue relating to sustainable land management on mainland Antigua is land degradation associated with improper land development. This is mainly concentrated in urban areas but is also the main cause of chronic erosion in elevated areas. Another area of concern is land-based liquid and solid waste pollution sourced particularly from sewerage sludge and oily waste residues. On Barbuda, critical issues associated with unsustainable land management include sand mining, and improper sewage disposal. Land management in Antigua and Barbuda is controlled by many Government Agencies that are supported by various Acts of legislation. The lead agencies charged with the responsibility of land management and development include the Development Control Authority (DCA), Central Housing and Planning Authority (CHAPA), Lands Division, and the Surveys Division. The estimated value of government support to sustainable land management programmes through these agencies on an annual basis is approximately US$300,000. The main interventions on sustainable land management have been associated with the GEF full-sized project, the Sustainable Island Resource Management Mechanism (SIRMM) Project that included the development of a National Sustainable Land Zoning Plan, wastewater guidelines with regulations and a GIS-based management information tool were all developed. These allowed for the identification of priorities for intervention and capacity building. The value of that project was US$7 million.

Biodiversity resources management: Key threats to biodiversity include improper and unsustainable land use conversion, degradation and fragmentation of forested ecosystems particularly in lowland coastal areas, intensive grazing, land-based pollution into the littoral and coastal environments, and direct impacts on coral reefs from dredging and anchor mooring. In Barbuda, economic activities, such as sand mining and over fishing threaten the integrity of the coastal ecosystem. Proliferation of alien invasive species is also of concern, notably rats, mongoose, Giant African Snails, Cuban Frogs and the Lionfish. The Great Bird Island, offshore Antigua, is home to the Antiguan Racer which is listed as critically endangered (IUCN) and protection of its habitat is of utmost priority to the country. The Environment Division has lead responsibility for biodiversity conservation and is supported by the Plant Protection Unit, the Fisheries Division and the Environmental Awareness Group (EAG). The estimated annual support from government is valued at US$60,000. The EAG is a non-governmental organization (NGO) that promotes environmental stewardship in the country. Recent major initiatives for biodiversity conservation has included the Fern Project which focused on the research and conservation of native ferns of Antigua, Barbuda and Redonda offshore island, and the Redonda Rat Eradication Project.

Barbados

Water resources management: The country is among most water-scarce SIDS in the world on account of its limited water availability and high population and demands. Pollution of its kharstic aquifer is a major concern and high density development along the western corridor in particular. The lead agency for water resources is the Ministry of Environment and Drainage. The Barbados Water Authority has statutory responsibility for management of water resources although this role is more related to water supply and sewerage services

provision. The Environmental Protection Department (EPD) and the Coastal Zone Management Unit (CZMU) contribute significantly to regulation, policy development and monitoring of the status of the environment in respect to the nexus between water and environment.

Sustainable land management: The main land resources management concerns continue to be focused in the Scotland District in the northern part of the country that is particularly prone to erosion given the geology of the region. Development encroachment over the years has resulted in significant landscape modification and protective vegetative cover loss and there has been investments in promoting improved drainage and land stabilization. Land degradation concerns over the rest of the country are associated with quarrying and indiscriminate disposal of waste residues such as oily waste over the landscape. The key agencies charged with sustainable land resources management are Soil Conservation Unit within the Ministry of Agriculture and the Environmental Protection Department.

Biodiversity resources management: Given the country's long settlement history and relatively gentle terrain that lended itself to intensive development, the island's native terrestrial ecosystems have been heavily modified and the biological diversity is relatively low compared to its other island neighbours. Avian biodiversity is best represented. The key threats to biodiversity are land development and forest fragmentation, land based pollution and proliferation of alien invasive species. The Environmental Protection department has lead responsibility for biodiversity management in the country, supported by the Coastal Zone Management Unit.

Cuba

Water resources management: Integrated water resource management is challenged by weak legal, political and social policy frameworks. Law 81, through Articles 110 and 111, defines the objectives of integrated watershed management and assigns to the National Watershed Council (CNCH for the Spanish acronym) the responsibility of enabling integrated watershed management activities, in coordination with other central government entities. The CNCH works to promote synergies among its members without assuming their functional responsibilities. In 1994, Cuba's Academy of Science, the National Commission for Environment and Natural Resources and the Executive Secretariat for Nuclear Energy were merged into the Ministry of Science, Technology and Environment (CITMA for the Spanish acronym). Today CITMA is the lead ministry in the country on proposing and implementing government policies in science, technology, environment and the use of nuclear energy, promoting their cross-sectoral coherent integration. CITMA chairs the National Watershed Council, with the National Hydrological Institute serving as the vice-chair of the CNCH.

Sustainable land management: The primary issues related to sustainable land management include degradation associated with intensive agriculture and grazing particularly and pollution from land based sources that include domestic and industrial waste discharges and polluted agricultural runoff. The lead agencies with responsibility for land resources management include the Ministry of Science, Technology and the Environment (CITMA), the Ministry of Planning and the Ministry of Agriculture. Recent interventions have been made in the National Reforestation Program, the National Program for Land Conservation and Improvement, and the National System of Protected Areas.

Biodiversity resources management: Given the size of the country Cuba is by far the most important island in the region in terms of biodiversity, particularly for plant diversity, with more than 6,500 vascular plants, of which about half are endemic. Cuba accounts for about 48 percent of the land area of the entire hotspot and is home to more than half of the region's endemic plants, making it a top conservation priority for the Caribbean[9]. The main threats to biodiversity in the country are associated with the direct encroachment of human activity into sensitive biological areas and the resultant impacts from deforestation, habitat fragmentation, pollution and proliferation of

[9] Conservation International – Caribbean Islands, Unique biodiversity - http://www.conservation.org/where/priority_areas/hotspots/north_central_america/Caribbean-Islands/Pages/biodiversity.aspx

alien invasive species. The country has a system of National System of Protected Areas (SNAPs) and while well-established on paper, these designated landscapes are poorly managed due to insufficient funding, lack of trained manpower, and lack of understanding of the importance of protecting these ecosystems by the very populations who stand most to benefit from their proper management, conservation and sustainable use. The lead responsible agencies include Ministry of Science, Technology and Environment (CITMA) and the state forestry service of the provinces.

Dominican Republic

Water resources management: The main water resources challenges are declining spring and river discharges, lake levels, shortage of water for irrigation and domestic uses (drinking) and deteriorating water quality. The lead agency with overall responsibility for water resources management in the country is the National Hydraulic Resources Institute (INDRHI). Watershed management is the responsibility of the Vice Ministry of Soil and Water and is supported by the National Hydraulic Resources Institute and Ministry of Health. During 2013 INDRHI had responsibility for implementation of projects with external financing amounting to US$467 million, in addition to the governmental allocation of US$25 million to support the work of the agencies. The most significant recent investments in water resources management in the country under INDRHI include the Monte Grande dam, with funding of US$250 million and the Guaigüí, with a US$88 million contribution, along with Project Azua II, with financing to the tune of US$70 million, and support to recovery efforts from tropical storms Noel and Olga (both occurring in the 2007 Atlantic hurricane season) valued at US$34 million. All these initiatives are financed by the World Bank.

Sustainable land management: Priority sustainable land management interventions are directed at control of soil erosion and depletion, salinization, compaction and sterilization. The sustainable land management demonstration project upstream of Sabana Yegua addresses problems of land degradation in the Dominican Republic. The lead agency with responsibility for land resources management is the Ministry of Environment and Natural Resources via the Vice Ministry of Soil and Water, supported by other institutions including the National Hydraulic Resources Institute (INDRHI), the National Institute of Water and Sewerage (INAP), the Ministry of Public Works and Communications, the General Mining Bureau, the Ministry of Agriculture and the Water and Sewerage Corporations. Sustainable land management interventions in the country focus on integrated watershed management, protection, conservation and restoration of soils and inland waters, and the careful exploitation of minerals in compliance with environmental regulations and is supported through annual contributions from government at approximately US$12 million. It should be noted however that that exact national investment in SLM is difficult to isolate to due to the many different investments that are made in the areas of agriculture, irrigation and other activities, that also benefits land resource conservation; it is therefore likely that the overall national investments may be much higher. Other major initiatives have included the national Quisqeya Verde Program within the Ministry of Environment's "Green Border" initiative to promote conservation initiatives along the border zone with Haiti. The shared Artibonito Watershed with Haiti has been the focus of management interventions. These programmes are valued to the tune of about US$4.5 million.

Biodiversity resources management: The large size of the country and the great elevation and topographic variability has translated to the evolution of many different ecotypes with a high level of biological diversity with over 2,830 endemic species of animals (mostly arthropods) and about 2,050 species of plants. The key threats to biodiversity resources continue to be land use conversion and habitat fragmentation, including land and water degradation through pollution. The lead agencies charged with biodiversity conservation in the country are the Vice Ministry of Protected Areas and Biodiversity, supported by the Coastal Marine Vice Ministry and Forest Vice Ministry. There are numerous targeted initiatives in the country related to i implementation of national actions associated with the CBD, contributions to the legal, institutional and regulatory progress in the improved management of protected areas, management of marine and coastal resources, management of forest resources,

implementation of actions in terms of scientific research and monitoring, and priority actions for in-situ and ex-situ conservation. The global Critical Ecosystems Partnership Fund (CEPF) executed by Conservation International and CANARI (the Regional Implementation Team for the Caribbean) has supported community-based action for biodiversity management in the country. Grants have been awarded to Grupo Jaragua for a project titled Agroforestry Model for Biodiversity in Neighbouring Communities of the Jaragua and Bahoruco National Parks. Another CEPF grant is supporting Local Management Capacity and Conservation Plans to Save Endangered Frogs in Four High Priority Key Biodiversity Areas in Hispaniola through the support of the Zoological Society of Philadelphia.

Grenada

Water resources management: The country is facing challenges with maintaining a reliable supply of water especially during the drier months when demand exceeds supply and particularly at distal ends of the water distribution network. Carriacou and Petit Martinique are water-scarce since they have very limited ground water and no appreciable surface water on account of their small size. Pollution of freshwater surface and coastal waters are of increasing concern. A UN Division of Sustainable Development 2012 publication on climate change adaptation in Grenada identifies Grenada's water resources as a critical sector for priority adaptation action and for integration into national plans for sustainable development. Water resources management by statute continues to be the statutory responsibility of the National Water and Sewerage Authority (NAWASA). A 2007 FAO-funded initiative valued at approximately US$50,000 resulted in the development of a national policy for water resources management along with recommendations for legislative changes. The legislative provisions are yet to be effected but the Land Use Division has in its workplan for 2014 efforts to pursue its movement to Cabinet and Parliament. The Land Use Division of the Ministry of Agriculture and the Forestry Department have responsibility for land-water resources use and watershed management, while the Environmental Health Department has responsibility for the health-water safety programme. The estimated annual value of support from the government in these areas is US$100,000. There are other local and regional programs from which the country benefits, with training and capacity building provided by regional organisations, such as CEHI (CARPHA), the OECS Secretariat, GWP-C, CIMH and the CCCCC. These contributions are augmented by local funding support to irrigation, sustainable land management and water quality analysis initiatives, along with support to NAWASA. A number of climate change adaptation measures in the water sector have been recommended including rainwater harvesting ponds, energy efficient irrigation systems.

Sustainable land management: Main issues of concern on mainland Grenada include unsustainable land management associated with agricultural development and degradation of lowland coastal forests. Intensive grazing is of concern in the sister islands of Carriacou and Petit Martinique. The lead agencies charged with sustainable land management are the Ministry of Agriculture through the Land Use Division and the Forestry Department. Government's annual support to land management programmes amount to approximately US$100,000. Hurricane Ivan of 2004 severely impacted agriculture and forests within upper watershed areas and recovery has been of major focus in the years since then with interventions in land and forest rehabilitation estimated at US$2 million.

Biodiversity resources management: The key issues threatening biodiversity include climate change influences, invasive alien specie proliferation, habitat degradation and fragmentation particularly in lowland forests, and pollution of freshwater and coastal receiving environments. The country has some 3 endemic animals (Grenada Frog, Grenada Dove and the Tree Boa) and at least 5 endemic plants. The flagship specie that is most highly threatened is the endemic Grenada Dove. The lead agency charged with biodiversity management is the Forestry Department and is supported by the Division of the environment, Fisheries Division, the Land Use Division, St. Georges University, local NGO's and CBO's and regional/international NGO's such as TNC. In 2013 a US$20,000 CEPF grant was awarded to the Society for the Conservation and Study of Caribbean Birds for Building Capacity for

Sustainable Tourism and Livelihoods for the Long-term Conservation and Management of Key Biodiversity Areas in Grenada. A review of the Biodiversity Strategy and Action Plan and preparation of Grenada's 5th National Report to the Convention on Biological Diversity is ongoing through a GEF Umbrella Project valued at US$274,000. The project will be completed by June 2014.

Jamaica

Water resources management: The key issues in Jamaica are the spatial distribution of water resources relative to the demands and consequent localized water scarcity and acute degradation of surface and ground water due to pollution. The country has what can be described as a mature institutional and regulatory framework for water resources management. The Water Resources Agency (WRA) has lead responsibility of water resource management and service regulation is governed by the Office of Utility Regulation. The main service provider is the National Water Commission (NWC). The National Environmental and Planning Agency (NEPA) has responsibility over land and environment development regulation and assessment and watershed management. The Environmental Health Department has jurisdiction over water safety and human health. The Forestry Department also has a significant role in watershed protection. The estimated quantum of government support to water resources management amounts to approximately US$357,794,360[10] on an annual basis. The National Water Resources Master Plan for the country is under review and a drought policy remains in draft. Other interventions include the ground water recharge project funded by the International Atomic Energy Agency titled "Evaluating Ground Water Recharge in the upper Rio Cobre Basin" aimed at assessing the potential for water related developments and the resources capacity to meet present and future demand. It also extends to the continuous updating of the Master Plan. The project is valuated at US$130,120.

Sustainable land management: Areas of priority focus continue to be on abatement of land degradation in cultivated areas including the Blue and John Crow Mountain National Park and pollution control particularly from urban and industrialized environments that pose threats to surface and ground waters and the off-shore marine environment. The lead agency is the National Environment and Planning Agency (NEPA) with integrative responsibility, supported by the Forestry Department and the Water Resources Authority. Estimated annual government support to land degradation management programmes amount to approximately US$12,944,030. Special projects on sustainable land management including the *EU/UNEP/GOJ Climate Change Adaption and Disaster Risk Reduction -Rehabilitated watersheds* through slope stabilization measures such as reforestation of denuded hillsides, *JA REEACH Forestry Project* within the Rio Bueno Watershed Management Unit and the *Integrated Management of the Yallahs-Hope Watershed Management Area*. The Forestry department recently completed a Sustainable Land Management Policy through funding received from the GEF/UNDP. It is anticipated that this SLM Policy will serve as the roadmap for the implementation of SLM techniques and methodology within the next few years.

Biodiversity resources management: The country similarly harbours a wide diversity of biodiversity owing to its large size and highly varied geography. Jamaica has at least 719 species of animals and 923 species of plants that are endemic to the country. Some of the critically endangered species include leatherback turtle and the Jamaica Petrel and threatened ecosystems include coral reef, mangrove forests and watershed areas such as the Dolphin Head Forest Reserve. Key threats include forest destruction and fragmentation for agriculture and development particularly outside protected areas, and land-based pollution. Watershed, areas of particular concern include Montego River, Rio-Bueno/White River, Orcabessa-Pagee, Wag Water, Buff Bay-Pencar, and the Rio Grande, and the least impacted WMUs were Lucea River, Plantain Garden and Deans. . The lead agencies with responsibility for biodiversity management include NEPA and the Forestry Department, supported by a number of NGOs that include the Jamaica Conservation Development Trust (JCDT), Jamaica Environment Trust, Negril Area Environmental Protection Trust (NEPT), Negril Coral Reef Preservation Society (NCRPS) among others. The value of

[10] Estimates of Expenditure 2013-14. Ministry of Finance, Jamaica April 2013

government support programmes approximate US$11,499,760[11].

Saint Kitts and Nevis

Water resources management: The main issues of concern for water resources management is water quality degradation mainly from pollution as a result of settlement and commercial development encroachment. On St Kitts statutory responsibility for water resources management is assigned to the Water Services Department, while on Nevis it is the Nevis Water Department. The watershed and land management aspects are shared between the Ministry of Public Works, Ministry of Planning and Ministry of Agriculture. On Nevis, a similar role is played by the Department of Physical Planning, Natural Resources and Environment under the Nevis Island administration. On both islands the Ministry of Health through the public health departments have responsibility for water quality and health-related aspects. On Nevis the CDB has been supporting the country in the water enhancement project inclusive of institutional strengthening and infrastructure supply upgrades. The value of the support is US$11 million.

Sustainable land management: Current SLM focus is on soil conservation on former sugar production lands that are being converted into alternative uses, both agricultural and non-agricultural. Unsustainable quarrying and sand mining is also causing acute land degradation within ghauts and along shoreline areas in both islands. The lead agencies with responsibility for land management on Saint Kitts include the Ministry of Environment, Department of Agriculture and the Public Works Department. On Nevis lead responsibility falls to the Department of Physical Planning, Natural Resources and the Environment under the Nevis Island Administration. Government support to land management programmes amount to approximately US$107,000 annually.

Biodiversity resources management: The terrestrial biodiversity on mainland St. Kitts is clustered within the St Kitts Central Forest Reserve, a designated protected area. On Nevis the Nevis Peak forest area harbours most of the terrestrial biodiversity. The marine ecosystems exhibit the high conservation value. Given the highly modified environments of the lowlands of the islands, concerns are related mainly to degradation of watercourses and the impacts to the marine environment due to sedimentation. On mainland St. Kitts the Southern Peninsula including the Salt Pond has been noted as having special conservation significance. The lead national agencies for biodiversity management include the Department of Physical Planning, Natural Resources and the Environment and the Department of Marine Resources on St. Kitts. On Nevis the lead agency is the Physical Planning, Natural Resources and Environment Department. The Nevis Historical & Conservation Society also plays a role in research and advocacy.

Saint Lucia

Water resources management: Key water resources issues are declining water availability in the context of supply capacity (inadequate infrastructure in parts of the service areas) and pollution of ambient fresh and coastal waters. Under the European Union Special Framework of Assistance (SFA) programmes between 2000 and 2005, support to policy, legal and institutional strengthening for the water sector was provided. This effort, in parallel with the Water Sector Reform Project led to the creation of a Water Resources Management Agency (WRMA) with responsibility for resource management and a Water and Sewerage Commission as the regulator for water and wastewater service providers. Following the devastation by Hurricane Tomas in 2010, the country has received foreign assistance for building resilience in the sector. The Global Programme of Action (GPA) for the Protection of the Marine Environment from Land-Based Activities financed the development of a protocol for hotspot characterization and development of best management practices for LBS pollution. This initiative implemented by CEHI, and was completed in 2013. The Water Resources Management Agency has received support from AusAID

[11] Estimates of Expenditure 2013-14. Ministry of Finance, Jamaica April 2013

toward the institutional strengthening of the Agency, strengthening of its data collection and information management systems. The Government of Saint Lucia supports watershed management programmes valued at approximately US$74,000 annually. A partnership between the CEHI and the US Centers for Disease Control and Prevention (US-CDC) provided support to WASCO in the formulation of a Water Safety Plan (WSP) for the Dennery and Mabouya Valley water supply systems. Saint Lucia is also participating in the Pilot Programme for Climate Resilience (PPCR) that is being implemented between 2011 and 2017 within the Disaster Vulnerability Reduction Programme (DVRP).

Sustainable land management: Management focus remains on land degradation rehabilitation within agricultural peripheral areas around the forest reserve, particularly within water catchment areas that are sources for drinking water supply. Pollution and sedimentation of coastal ecosystems is of concern. The lead responsible agencies are the Ministry of Agriculture, The Forestry Department and the Water Resources Management Agency with support from the Ministry of Agriculture. Post-Hurricane Tomas (2010) rehabilitation efforts continue to address the significant watershed degradation associated with landslides and heavy siltation of rivers. Saint Lucia is also participating in the Pilot Programme for Climate Resilience (PPCR) that is being implemented between 2011 and 2017 within the Disaster Vulnerability Reduction Programme (DVRP).

Biodiversity resources management: The country has significant biodiversity resources relative to the small size of the island. There are some 16 endemic animal (with a further 19 endemic sub-species) and at least 10 endemic plant species of which several are endangered. The country boasts the world's rarest snake, the Saint Lucia Racer. The key threat to biological resources has been land conversion to agricultural development (in past decades) and more recently in the lower dry forest elevations for development. The Forestry Department has lead responsibility for biodiversity management supported by the Sustainable Development and Environment Division. The country is preparing a GEF full-sized proposal to implement the 'Iyanola - Natural Resource Management of the North East Coast Project' with financing expected in the latter part of 2014.

Saint Vincent and the Grenadines

Water resources management: Water management issues of concern on mainland St. Vincent are mainly associated with freshwater pollution and impacts to the coastal waters. This is particularly the case in the more developed southwest part of the island. The Grenadines are small and arid with very limited volumes of ground water making them water-scarce. Rainwater is the primary source of water for residents. The Central Water and Sewerage Authority has the lead responsibility for water resources management by statute. The St. Vincent Electricity Services shares access rights to water resources for hydropower generation. The Forestry Department has primary responsibility for watershed management and the Environmental Health Department has responsibility for water quality and pollution control. The country benefitted from an US$1.9 million EU-financed National Water Resources Management Study (completed in 2009) that delivered a complete assessment of the water resources in the country with the development of appropriate policies and institutional frameworks.

Sustainable land management: Land stabilization within steep agricultural zones remains a concern as well as land degradation from illicit cultivations on the slopes of the La Soufriere volcano in the north of the island. The lead agencies with responsibility for SLM are the Ministry of Agriculture and the Forestry Department. The St. Vincent Electricity Services Ltd and the Central Water and Sewerage Authority was at one time mandated to contribute to forestry conservation efforts related to the watershed services associated with hydropower generation and potable water abstraction. The approximate annual costs for investments by government stand at US$220,000.

Biodiversity resources management: On mainland St. Vincent, the central forest reserves harbour the bulk of the indigenous biodiversity. In total, more than 1,150 species of flowering plants, 163 species of ferns, 4 species of amphibians, 16 species of reptiles, 111 species of birds, and 15 species of mammals have been identified in the

country[12]. Conservation threats include land degradation along the margins of the higher elevation forest areas in Central Mountain Range that encompass the Colonaire and Cumberland Forest Reserves along with La Soufriere National Park, Mount Pleasant and Richmond Forest Reserves. In the Grenadines, the Tobago Keys is a national park of noted significance within the Eastern Caribbean. The lead local agencies responsible for biodoversity management are the Forestry Department and the National Parks, Rivers and Beaches Authority. The country is participating in the Critical Ecosystems Partnership Fund and has accessed a small grant valued at US$20,000 for an Ecotourism and Biodiversity Protection Project for the Kamacroubou Mountain and Diamond Village Community.

Trinidad and Tobago

Water resources management: Understanding that Trinidad and Tobago is heavily industrialized due to oil and gas resources exploitation and infrastructurally development-centred, water resources are placed under significant risk of degradation where development controls and/or mitigative measures are poorly exercised. Some of the key water resources management challenges are outlined as follows. Watersheds and freshwater ecosystems are often impacted by increased soil erosion caused by deforestation due construction and agriculture on steep slopes, annual bush and forest fires in dry season, quarrying operations, poor logging systems and inability of authorities to monitor deforestation activities. The intensity and frequency of impacts vary, depending on location. Polluted discharges from industries (typical ones include petro-chemical, paint and metal finishing, agro-processing and distilleries) and improper liquid waste disposals (e.g. vehicle oils into open drains, leaking tanks, washings) foul fresh and coastal waters. Indiscriminate dumping of refuse, solid waste, agricultural and industrial waste, cleaning agents, animal offal, sewage from poorly constructed and overflowing septic tanks and cesspit latrines also present significant pollution hazards. Challenges to water resources use and management in relation to municipal supplies include the heavy draw-down on stressed aquifers particularly from industrial users, inefficient ageing water supply systems (with high water losses), poor coordination between water management and environmental agencies and challenges in implementing legislation. Climate change in terms of sea level and impacts on coastal aquifers is of concern.

The lead agency with overall responsibility for water resources management is the Water and Sewerage Authority (WASA). Watershed management is the responsibility of The Ministry of the Environment and Water Resources (which Forestry Division, WASA, The Water Resources Agency (WRA), the Environmental Management Authority (EMA), Institute of Marine Affairs (IMA) and Drainage Division among others fall under). It is supported by the agencies mentioned under the Ministry of the Environment and Water Resources, the Ministry of Health, The Tobago House of Assembly (THA), Town and Country Planning Division of the Ministry of Planning and Sustainable Development. The Government of Trinidad and Tobago provides annual support estimated at US$802.6 million across these agencies. The most significant recent investments in water resources management in the country include – demand side investments such as repairs to transmission mains to reduce leakage, initiation of metering programme and revenue collection drive, plans for wastewater treatment and recycling. Supply side investments such as protection and effective management of watersheds, initiation of zoning for activities, new investments into desalination technologies, initiation of groundwater resources mapping, rainwater harvesting in rural areas and promotion of centralized wastewater treatment facilities. Estimated costs would range between US$50 to $100 million.

Sustainable land management: The priority SLM issues include deforestation, erosion, coastal erosion and accretion, land based pollution, poor agricultural practices, general and hazardous waste management, oil and gas-related spills, illegal quarries and lack of environmental controls in legal quarries, effects of flooding and land

[12] The Fourth National Biodiversity Report of St. Vincent and the Grenadines to the UNCBD - http://www.cbd.int/doc/world/vc/vc-nr-04-en.pdf

salinization. The lead agencies charged with management responsibility for SLM are the Ministry of Planning and Sustainable Development which houses the TCPD, Economic Development Board (EDB), Advisory Town Planning, National Transformation Unit, National Economic Policy and Planning, Central Statistical Office, Chaguaramas Development Authority (CDA) and East Port of Spain Development Company Limited. Other agencies and ministries include the Ministry of the Environment and Water Resources and its agencies, THA, Regional Corporations, Ministry of Housing and Urban Development and its agencies; the Housing Development Agency (HDC), the Urban Development Corporation (UDECOTT), the Land Settlement Agency (LSA), the Office of the Commissioner of State Lands and the Community-Based Environmental Protection and Enhancement Programme (CEPEP), the Ministry of Food Production and its agencies. Key interventions targeting land degradation include: land zoning and physical development planning policy development, sustainable forest resources policy development, regulation and reduction of illegal land management, sustainable management of oil and gas resources, sustainable management of quarry operations, sustainable agricultural practices options, integrated watershed management practices, national oil spill contingency planning, early warning systems implementation for flood, landslides and hazards, empowerment of enforcement agencies, community options and education.

Biodiversity resources management: The proximity of the twin-island state so close to mainland South America has resulted in similar biodiversity as on the mainland although there are some 23 island endemic animals and at least 55 endemic plants. Of conservation concern are the Trinidad Piping Guan or Pawi, White-tailed Sabre Wing Hummingbird, Ocelot, West Indian Manatee, Golden Tree Frog, Bloody Bay Poison Frog, Silky Anteater, Scarlet Ibis, River Otter or Neotropical Otter, the five species of marine turtles, including the Leatherback, Green, Hawksbill, Olive Ridley and Loggerhead turtles. Also of conservation priority are all orchids, Stony Corals and Black Coral. Threatened ecosystems from land clearing for settlements, agriculture and other development on Trinidad include the Aripo Savannas Strict Nature Reserve, Matura National Park, Nariva Swamp Managed Resource Protected Area, Maracas, Las Cuevas, Blanchiceusse, Caroni Swamp, and Buccoo Reef, Speyside, and MainRidge on Tobago.

The main agency with responsibility for biodiversity management is the Ministry of the Environment and Water Resources and its agencies supported by the University of the West Indies, specific NGOs and CBOs, stakeholder management committees and Ministry of Agriculture. Core government contributions to the biodiversity management programmes approximates US$10 million annually. Significant biodiversity initiatives include an inventory of plant species for the country has been completed (under the Darwin Initiative), Designation of specific vulnerable species and threatened areas as Environmentally Sensitive Areas and Species under the Environmental Management Act Chapter 35:05 and the establishment of the National Green Fund facility for community and non-governmental environmental (biodiversity included projects). Important GEF-funded projects include Biosafety Regional Project for implementing National Biosafety Frameworks in the Caribbean Sub-Region, Mitigating the threats of Invasive Alien Species in the Insular Caribbean and Project for Ecosystem Services - ProEcoServ.

BASELINE: Regional actions

The following is the actions at the regional level that are of relevance to this project in the areas of water resources, sustainable land and biodiversity resources management (**NOTE**: as in prior section, sustainable forest management a cross-cutting over the three main thematic areas). It should be noted that this account is not exhaustive. Section B6 should be referenced for further information.

Regional-level baseline - Water Resources Management

At the regional level the, **GEF-IWCAM Project** focused on strengthening of capacity to implement the integrated approach to the management of watersheds and coastal areas (IWCAM) or “ridge to reef” through regional

activities, equipping agencies and stakeholders 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. Through the regionally coordinated efforts IWRM governance regimes were strengthened and the capabilities of water and environmental diagnostic laboratories were enhanced. The project piloted the development of the GEF International Waters indicators framework and contributed to the legislative support process for implementation of the obligations of the LBS Protocol. The project fostered closer regional agency linkages through technical collaboration between the Caribbean Environmental Health Institute, the Global Water Partnership–Caribbean, the Caribbean Water and Wastewater Association, the Caribbean Water & Sewerage Association and the University of the West Indies. An Informal Working Group on Integrated Water Resource Management (IWRM) started by the Project contributed to the work of the CARICOM Consortium on Water, which was mandated by the Council of Ministers for Trade and Economic Development (COTED) in 2008.

The Cartagena Convention - **Protocol Concerning Pollution from Land-Based Sources and Activities (or LBS Protocol):** The LBS Protocol is a regional mechanism assisting the United Nations Member States in the Wider Caribbean Region to meet the goals and obligations of two international agreements: The United Nations Convention on the Law of the Sea (UNCLOS) and the Global Plan of Action for the Protection of the Marine Environment from Land-Based Activities (GPA). To date a total of 11 countries have ratified the Protocol bringing it into effect. The CEP Secretariat continues its assistance to countries in the implementation of the provisions of the Protocol whereby countries must commence mainstreaming the Protocol into national laws and regulations and work toward meeting effluent discharge quality standards over time. Approximately US$500,000 is contributed by Member Governments annually to the Secretariat to support the work of the Secretariat for the ratification and implementation of the Protocol through the Assessment and Management of Environmental Pollution Sub Programme.

The **OECS Secretariat** through the US-Aid funded OECS RRACC Project has supported the development of Model Policy and Legislation for the water resources management sector in the OECS sub-region through collaboration with CEHI (CARPHA). The model policy and law, completed in 2013, will be used by six OECS Member States (Antigua & Barbuda, Dominica, Grenada, St. Kitts & Nevis, Saint Lucia and St. Vincent & the Grenadines) to either strengthen existing policies and legislation or contribute to new instruments. This work builds on existing contributions through the GEF IWCAM Project applying the IWRM principles following the IWCAM or ridge-to-reef approach for water resources management in SIDS.

In 2012 the **Caribbean Development Bank** launched a Regional Water Sector Review valued at US$275,000 to assess the state of the water sector in its Borrowing Member Countries (with the exception of Haiti). The review focused on valuating and rationalizing the major development challenges facing the sector so as to inform the bank's support strategies.

GWP-Caribbean has hosted a series of sensitization and capacity building workshops across the Caribbean that focused on various topics of relevance to professionals. GWP-C has been the lead host of the High-Level Session for Ministers for water in the Caribbean in partnership with the CWWA. Between 2009 and 2011 GWP-C partnered with the Caribbean Environmental Health Institute in the promotion of best practices for rainwater harvesting with the production of a toolkit and demonstration model. This collaboration was valued at US$29,800. GWP-C is implementing the Water, Climate and Development Programme (WACDEP) across the region, contributing to building resilience in the water sector. The overall programme for the Caribbean is valued at EUR 700,000 (US$ 947,500).

The **Caribbean Water and Wastewater Association** continues to promote networking and advocatory for improved water and wastewater resource management at the regional level through its annual conference. A

feature of the conference has been the Ministerial High-Level Session (HLS) that has been co-hosted with the Global Water Partnership-Caribbean which focuses on policy themes in the sector for action by countries supported by ministers. The CWWA HLS in 2013 marked the 9th hosting of the HLS. Recent HLS sessions have focused on wastewater management through partnership and support by the GEF CReW Project.

The **Caribbean Water and Sewerage Association** completed a tariff study of the potable water rates across its member constituent utilities in 2009. The study was used to inform policy and restructuring of the rates to be more in line with operating costs. The organization has engaged into a partnership in year with the Global water Operators (GOWOPA) to assist with capacity building of water operators amongst its member utilities. CAWASA runs a training and certification programme for water operators and hosts its annual Caribbean water Operators Conference that features presentation and special training sessions for water operators.

Regional-level baseline - Sustainable land management

Enhancing the adaptive capacity of rural economies and natural resources to climate change in selected Caribbean small island and low lying coastal developing states: This project is a sub-component under the Caribbean Aqua-Terrestrial Solutions (CATS) Programme that is being implementation by the German Agency for International Cooperation (GIZ) and executed by The Environmental management Unit of CARPHA in behalf of CARICOM. This project valued at EUR 5.525 million (US$7.47 million) focusses 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 participating CARICOM Member States are Belize, Dominica, Grenada, Guyana, Jamaica, St. Kitts & Nevis, Saint Lucia, St. Vincent & the Grenadines with implementation having commenced mid-2013. The proposed project duration is four (4) years.

The **Supporting the Eastern Caribbean States to Improve Land Policies and Management** financed by the Australian Government through UN-Habitat is being implemented by the OECS Secretariat. This project that targets the OECS Member States will develop OECS land policy guidelines and national land policies and will include capacity enhancement and the use of relevant SLM tools. The value of this project is US$217,300 and will run into 2014.

The **Climate Change Adaptation and Sustainable Land Management in the Eastern Caribbean** is another SLM project that will be implemented by the OECS Secretariat in the sub-region. This US$6.5 million project financed by the European Union within Global Climate Change Alliance (GCCA) framework also aims to build institutional capacities and provide suitable technical tools and training to support SLM.

The **UNDP Mainstreaming Sustainable Land Management Project** commenced implementation over the majority of the Caribbean SIDS from 2007 into 2008 and has been winding down from 2011 in some countries up to present. Regional capacity building and sustainable financing workshops for national SLM focal points were held in 2006 and 2007 in association with technical support from CEHI. The FAO has been supporting countries in the Caribbean in tools for sustainable land management based on application of the **Land Degradation Assessment Methodology (LADA)**. The **GEF IWCAM Project**, through its national demonstration initiatives and regional and national capacity building efforts contributed to SLM in the context of improved watershed management.

Regional-level baseline – Biodiversity resources management

The **Protocol concerning Specially Protected Areas and Wildlife (SPAW Protocol)** of the Cartagena Convention is tailored to address biodiversity issues in the Wider Caribbean and as such it is also a vehicle to assist with regional implementation of the broader and more demanding global Convention on Biological Diversity (CBD). The Protocol also assists with the promotion and linkages of the Ramsar and CITES Conventions. The Protocol seeks the

protection of rare and fragile ecosystems and habitats, thereby protecting the endangered and threatened species residing therein. CAR/RCU facilitates through the Protocol, the establishment , proper management and strengthening of Protected Areas (PAs) and PA networks, promotes sustainable management (and use) of species to prevent their endangerment and provides assistance to governments of the region in conserving their coastal ecosystems. Approximately US$700,000 is contributed to the work of the Protocol annually through the SPAW Sub-Programme. Supported under the SPAW-CEP Secretariat is the Caribbean Marine Protected Area Management (CaMPAM) network established to strengthen management of marine protected areas (MPAs) and improve their effectiveness in the Wider Caribbean region.

Caribbean Challenge (CCI) initiative Phase II was launched in May 2013 at the Caribbean Challenge Summit in the British Virgin Islands, being supported by The Nature Conservancy (TNC) through the CCI Secretariat. The CCI is committed to by 10 governments (seven countries and three territories) countries in the Caribbean, seeks to facilitate the conservation of at least 20% of their nearshore marine and coastal environments in national marine protected areas systems by 2020 and trigger the creation of National Conservation Trust Funds. These national funds once established will be funded via the earnings from their national endowments managed under the Caribbean Biodiversity Fund (CBF), as well as funds raised by the national trusts. The CBF has been established and is currently managing US$20 million, with another US$23million to be provided via the GEF and TNC in the near-term. The UNEP-CEP supports Parties of the Cartagena Convention with their CCI objectives.

The **Ramsar Convention's Caribbean Regional Initiative of Wetlands (CARIWET)** is promoting the implementation of the Convention in the Caribbean, through the development of a Regional Strategy that engages participation at the national level governmental agencies, communities, the private sector, NGOs, academic and research institutions. CARIWET ran between 2009 and 2012.

Critical Ecosystems Partnership Fund (CEPF) is a global fund that finances initiatives to empower civil society to manage critically threatened Key Biodiversity Areas (KBAs). Eligible participating countries that can benefit from the US$6.9 million investment strategy within the Caribbean programme include Antigua and Barbuda, Barbados, The Bahamas, Dominica, Dominican Republic, Grenada, Haiti, Jamaica, St. Kitts and Nevis, Saint Lucia, and St. Vincent and the Grenadines. 45 priority key biodiversity areas and six priority conservation corridors have been identified across the Caribbean countries and the partnership seeks to improve protection and management of these KBAs and corridors, integrate biodiversity conservation into landscape and development planning and empower Caribbean civil society to gaining related economic benefits from conservation. The Caribbean Regional Implementation Team (RIT) for the CEPF is CANARI.

Improving the Management of Coastal Resources and the Conservation of the Marine Biodiversity in the Caribbean Region: This EUR 5 million (US$6.76 million) project falls within the Caribbean Aqua-Terrestrial Solutions (CATS) Programme that is being implemented by the German Agency for International Cooperation (GIZ) and executed by The Environmental Management Unit of CARPHA on behalf of CARICOM. The initiative will support some eight countries (Belize, Dominica, Grenada, Guyana, Jamaica, St. Kitts & Nevis, Saint Lucia, St. Vincent & the Grenadines) to address marine resources management and strengthen capacity of stakeholders through a common institutional framework for 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 placed 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.

IUCN is implementing the **Biodiversity and Protected Area Management (BIOPAMA) Programme** which aims to address threats to biodiversity in African, Caribbean and Pacific (ACP) countries, while reducing poverty in communities in and around protected areas. BIOPAMA will contribute to improving data availability with capacity

development to strengthen protected area management. It has two main components: one concerning protected areas, jointly implemented by the International Union for Conservation of Nature (IUCN) and the EC's Joint Research Centre (JRC), and another dealing with access and benefit sharing (ABS), implemented by the Multi-Donor ABS Capacity Development Initiative managed by the GIZ. The Programme is financed by the European Commission's (EC) 10th European Development Fund (EDF). The Caribbean component of the Programme is valued close to EUR 1.9 million (US$2.56 million).

The Centre for Resource Management and Environmental Studies (CERMES) of the University of the West Indies promotes and facilitates sustainable development in the Caribbean and beyond through graduate education, applied research and professional training and the implementation of innovative projects in natural resource management. In terms of biodiversity resource conservation the Centre has been involved primarily with marine conservation with the **Caribbean Large Marine Ecosystems Project, the Future of Coral Reefs in a Changing Environment (FORCE) Project, Adaptive capacity for MPA governance in the eastern Caribbean,** and **Socio-economic Monitoring for Caribbean Coastal Management**. The Centre plays an active role in the technical and advisory services to governments, NGOs and the private sector. In addition CERMES has active research projects in the field of water and land management with the **Sustainable Water Management under Climate Change in Small Island States of the Caribbean (Water-aCCSIS), Global-Local Caribbean Climate Change Adaptation and Mitigation Scenarios (GoLo CarSce)** and **Conset Bay Pilot Project**.

The **long-term goal** of the project is to enhance the sustainable flow of ecosystem services and their contribution to sustainable socio-economic development in the Caribbean through the application of appropriate solutions for the improved integrated management of water, land and biological resources.

The **global environment objective** is to promote innovative systemic methodologies and approaches for the integrated sustainable management of water, land and globally threatened biodiversity resources that are relevant, replicable and up-scalable for small island developing states (SIDS). These efforts will mitigate further environmental degradation and create enabling conditions for environmentally sustainable development of the Caribbean region.

The **Project Objective** is to contribute to the preservation of Caribbean ecosystems that are of global significance and the sustainability of livelihoods through the application of existing proven technologies and approaches that are appropriate for small island developing states through improved fresh and coastal water resources management, sustainable land management and sustainable forest management that also seek to enhance resilience of socio-ecological systems to the impacts of climate change.

The full details of the project are contained in the project document attached as Annex 1 to this document.

A5. Incremental /Additional cost reasoning: describe the incremental (GEF Trust Fund/NPIF) or additional (LDCF/SCCF) activities requested for GEF/LDCF/SCCF/NPIF financing and the associated global environmental benefits (GEF Trust Fund) or associated adaptation benefits (LDCF/SCCF) to be delivered by the project:

Incremental cost reasoning

In the Caribbean natural resource degradation has had impacts on the ecosystem functioning with consequent influences on socio-economic development, in some locations more severe than others. Land degradation and pollution resulting from the impacts of agriculture, settlement, commercial and industrial development has compromised the integrity of the hydrologic response of watersheds, the ecosystem regulatory functioning and habitat integrity. The trend continues in spite of the collection of laws and regulations and agencies that have been established to manage environmental resources. Countries are now also aware of the added negative impacts that

climate change will likely have with weakened natural systems or landscapes that do not have the ability to regulate destructive effects of excessive rainfall or prolonged drought conditions. In this regard, many countries, under obligations of the UNFCCC as well and national policies and priorities have commenced the process of increasing resiliency to climate events. In the main, countries are still at the stages of drafting policy pronouncements and conducting vulnerability assessments across the various productive and service sectors. Implementation of solutions to enhance resilience remain several steps behind however and the process needs to be hastened to ward off or minimize damages and losses to communities and ecosystems. There are a relatively large number of donor-supported projects under implementation across the Caribbean, many in fact linked to climate change vulnerability reduction as has been outlined in an account of the baseline.

While national interventions associated with water, land and biodiversity resource management have resulted in the generation of a large array of useful knowledge products, proposed approaches for improved management, draft policy and regulatory instruments, the absorptive capacities at the national levels remain challenged for various reasons that include internal resource constraints, inadequate organizational arrangements and limited buy-in from top-level policy in many cases. Further compounding situation is the fact that in the main, communities and the private sector are not sufficiently mobilized so as to gain buy-in and active participation. Approaches invariably tend to be top-down driven and led by government agencies. Agencies charged with environmental management are still not able to effectively utilize indicators in making compelling cases for investment in improved environment resource management in spite of empirical evidence that suggest degradation is contributing to adverse socio-economic outcomes. Monitoring of environmental indicators are typically not featured as part of the mainstream development framework and core economic development decisions mainly due to the fact that such data are often not linked to national statutory requirements associated with laws and regulations. This in turn limits the importance accorded to monitoring and upkeep of monitoring systems.

Effective communication strategies to 'sell' investment in best practices for improved environmental management have been recognized to be important although this aspect is often neglected or not given sufficient attention in designing and executing projects and programmes. Public awareness and public education efforts for the most part tend to be associated with short-term project interventions, often not designed as stand-alone, institutionalized programmes that have longevity. As a result stakeholders may not remained engaged so as to gain constructive buy-in and ownership of interventions and associated outputs and outcomes so as to realize behavioural change. There are examples of education campaigns and communications strategies that have been effective in mobilizing society to action; at the Caribbean regional level, among the most noteworthy was the campaign to fight HIV/AIDS where consistent messages delivered via a variety of platforms and messengers served as the backdrop to health care providers and educators in delivery of services. Emerging work that bridges environment and human development has been championed by Panos Caribbean and PCI Media Impact that employ the tried and tested mass communications approaches but now augmented with social media applications.

The business as usual scenario

In consideration of the foregoing, under the business as usual scenario (BAU) the outcome will be an environment where decisions are made without taking due consideration of environmental stressors. It can be expected that environmental versus socio-economic trade-offs will not be appropriately balanced thereby leading to potentially undesirous outcomes that may further endanger ecosystems and benefits that can be potentially accrued that could in the long-run, with deleterious effects on national economies. Without contained support to strengthening the monitoring and assessment frameworks using appropriate indicators, the evidence base to adequately understand the full impact of environmental degradation will not evolve to adequately drive decision-making. This perpetuate a condition where civil society and the private sector remain generally unaware of the implications of poor resource management and how it impacts socio-economic development in terms of quality of health and livelihoods in general. Under the BAU knowledge generated from monitoring efforts from project interventions will remain

generally within the domain of technical professionals and not communicated to wider non-technical audiences on levels that can be understood or internalized.

Without further investment in harvesting and promotion of best case examples of researched and tested solutions for improved water, land and ecosystems resource management, uptake and replication will remain generally poor. This has much to do with the fact that 'communities of practice' that includes and links technical professionals, practitioners and beneficiaries remain poorly developed or non-existent. It should be noted however that there is an emerging community pf practice in management of marine protected areas in the Caribbean and some of the lessons from this could be emulated and strengthened for management of terrestrial protected areas, water and land resources in general.

Caribbean countries are still very much need on-going support in strengthening policy and regulatory environments and building capacity. Under weak policy and regulatory environments, coordination of the actions of the various agencies charged with environmental resource management will remain fragmented with duplication of effort. This in turn will limit effective multi-stakeholder engagement leading to low level of buy-in to initiatives and programmes. The private sector is typically not integrated in natural resources management programmes as appropriate policy and fiscal incentives do not exist to encourage investments in cleaner production and environmentally friendly practices. Under a BAU scenario where trained professionals cycle through organizations with career advancement, knowledge is often not passed down given that institutional arrangements are often not structured to maintain continuous capacity building regimen. Limited institutional memory as a result of challenges in retaining capacity means that sustainability of initiatives is jeopardized.

The GEF Increment

The project will continue to contribute to the uptake of appropriate solutions to address water, land and biodiversity resource degradation in the Caribbean. The solutions will be built on the knowledge base generated from the GEF-IWCAM Project and other relevant initiatives in the Caribbean. The methodologies will be further refined and rolled out within the interventions at the country level and designed for replication at the national and regional levels. A key feature of the project design is that the interventions will need to be necessity focus on low-cost, yet effective solutions give the resource constraints of the countries that can be easily mainstreamed into common practice. The project will contribute to national efforts to build capability and capacity amongst the non-traditional stakeholders to also monitor the state of the environment over which they have immediate connection with whether in the context of enhancing local sanitary conditions within communities or over natural resources that business enterprises rely on for economic growth. The project will foster linkages with the academic community through universities and applied research institutes and agencies both within the Caribbean and outside the region to make technical contributions to the knowledge and evidence base, both in the design and implementation of the national projects, and in assessing the effectiveness of implementation. The importance of monitoring and assessment of the impacts of the national project interventions will be paramount and the results will be effectively communicated through appropriate means to the relevant stakeholders in formats that are useful to them. The project will therefore expand the networking and knowledge sharing from community to the global level.

The sub-project will contribute to continued strengthening of the enabling environment for sound environmental resource management policy that will facilitate sustained adoption of effective interventions in water, land and biodiversity resource management. The project design recognizes that the process of policy and regulatory reform in the Caribbean will continue to be an incremental one and that the support interventions will be catalytic to wider development processes. The IWEco Project will build on the lessons learnt from the IWCAM Project with particular focus on enhancing the fiscal incentive environments that will encourage private sector investment and participation by communities for livelihoods building. The project intends to strengthen how research is integrated

within policy formulation and decision making through monitoring frameworks that will be established for the national sub-projects. The project will deliver on upgraded policy and legislative instruments for water, land and biodiversity resources management at the local level. At the regional level the project will contribute to the development of a common framework for water resources management in the Caribbean.

The project will make important contributions to strengthening the enabling environment that will further build sustainability to project outcomes in alignment with national priorities and strategies and the GEF focal areas. Within the scope of the International Waters focal area the project will support the national and local policy reforms linked to national socio-economic development agendas and the MDGs, and support regional cooperation in pollution control and protection of the quality of the Caribbean large marine ecosystem. The effort will continue to support the countries particularly in meeting the obligations of the LBS Protocol. In respect of the land degradation focal area, the project will support the national interventions in addressing mainstreaming sustainable land management into polices and contribution to development of integrated landscape management protocols. Land policies and appropriate legislation and regulations will be strengthened in line with the pronouncements of the National Action Plans. Policy contributions to meeting the GEF biodiversity focal area will strengthen integrated landscape management for biodiversity conservation through the integration of biodiversity and ecosystems valuation considerations within the scope of the National Biodiversity Strategy and Action Plans. The sustainable forest management focal area objective will be contributed to through the enhancing the integration of forest resource management considerations in planning and development.

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

Global environmental benefits

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

Global benefits would be generated indirectly as the enabling environment leads to projects with on-the-ground

investments in improved practices, and directly as sustainable land and ecosystems management is taken into consideration at the policy and institutional levels through better policies and incorporation of those concepts into the national development framework. The integrated and multi-faceted approach to natural resources management within a ridge to reef (or IWCAM) framework in the small island context serves to demonstrate how resources can be effectively utilised to realize added benefits across several thematic areas (water, LD and BD) as opposed to discrete sectoral interventions. This is also particularly useful given the resource poor circumstances that exist in many SIDS regions.

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

Water resources (fresh and coastal): enhancement of resilience of fragile coastal and marine ecosystems of the Caribbean Sea and contribution to maintenance of reliant livelihoods dependant on freshwater and coastal resources through reduced nutrient loading and other harmful pollutant discharges. IWEco builds on the multi-country cooperation approach reduce threats to the Caribbean Sea basin.

Land degradation (and SFM): Improved provision of agro-ecosystem and forest ecosystem goods and services with contributions to carbon sequestration through sustainable forest management, reduced upland erosion rates and reduced rates of sedimentation from watersheds into receiving environments. In terms of carbon benefits the following is estimated based on project interventions around sustainable forest/watershed management:

Carbon sequestration: through restoration and reforestation (and afforestation) investments over an estimated 2,700 hectares of degraded upland forests, riparian zones and coastal ecotypes across all eight countries. Based on spatial estimates of conversion of degraded lands within the target watersheds across the eight countries to (i) plantation forest-equivalent systems (overall 66% of total acreage) and perennial agricultural systems (overall 33% of total acreage) an estimated 227,400 tCO_2 eq will be sequestered over the project period[13].

Avoided carbon emissions: Through in-situ conservation and sustainable forest management over approximately 46,000 hectares in upland watersheds areas and riparian zones that are typically dominated by broad-leaved wet forests, secondary woodlands, dry forest types and mangroves: Total of 408,103 tCO_2 eq (based on the FAO estimate of biomass of 280 tonnes/ha applying a conversion factor of 3.76 with estimates of annual deforestation rates from available sources).

Biodiversity: protection, maintenance and enhancement of terrestrial and aquatic ecosystems and associated species abundance and diversity. The Caribbean has been noted as being a biodiversity hotpot given the high level of endemism that occurs due to genetic isolation and evolution. Of the plant species, more than 70% are endemic and with respect to reptiles and amphibians, over 95% are endemic. Between 8 and 35% of species within the major marine taxa found globally are endemic to the Caribbean hotspot.

Through national actions the project seeks to place under protected management regimes at least 2,700 hectares of ecologically important biological corridors (comprising of riparian zones, dry coastal forest ecotypes and upland forest ecosystems) and contribute to reduced pollutant loadings, particularly of sediments and nutrients (phosphates and nitrates to within LBS Protocols limits) in avoidance of excessive eutrophication of nearshore waters and smothering of coral reef systems. Of highest conservation interest in the countries are the rare and/or endemic wildlife species (such as the Amazona parrots, manatees) and economically importantly species, particularly sedentary species such as conch and sea urchins that are particularly impacted by heavy sediment and

[13] Based on estimated land use conversions using the FAO Ex-Ante Carbon-balance Tool (EX-ACT) tool http://www.fao.org/tc/exact/en/

nutrient loads.

Up-scaling and replication from the GEF-IWCAM Project: It should be noted that the GEF-IWCAM Project, not only initiated a process of reforms to implement an integrated approach to the management of watersheds and coastal areas (IWCAM) through activities to plan and manage aquatic resources and ecosystems on a sustainable basis, developing toolkits to support IWCAM reforms in policy, legislation and institutional arrangements, but also implemented pilot demonstration interventions aimed at improving the quality of fresh and coastal water resource for up-scaling and replication. In spite of these recent useful contributions, enabling environments in participating countries to foster replication and sustainability remain sub-optimal hence additional support is needed to drive toward reforms and wider implementation/replication of these solutions through joint programming with the GEF International Waters, Land Degradation and Biodiversity Focal Areas, within the integrated watershed and coastal area management (IWCAM), or "ridge to reef" framework. IWEco will therefore pay particular attention to the successes of the IWCAM Project in application of approaches, methods and technologies, and draw on approaches from other national and regional interventions within the Caribbean and other SIDS regions in implementation across the national and regional components.

Project design and component description

The IWEco Project will be implemented through 4 main Project Components. These components are as follows:

- **Component 1:** contributes to the development and implementation of **integrated targeted innovative, climate-change resilient solutions** appropriate for Caribbean and global SIDS for further replication in integrated water resources management (including water use efficiency), sustainable land management (with relevant elements of integrated coastal zone management), and maintenance and/or enhancement of biodiversity resources and ecosystem services.
- **Component 2:** contributes to the strengthening of the integrated water resources management (including water use efficiency), sustainable land management (and ICZM) and ecosystems **monitoring, and indicators framework** that already exist at the national and regional levels and enhance mainstreaming for evidence-based decision making.
- **Component 3:** contributes to strengthening of **policy, legislative and institutional reforms and capacity building** for integrated water resources management (including water use efficiency), sustainable land management (and ICZM) and ecosystem services management taking into consideration climate change resilience building.
- **Component 4:** contributes to enhancing **knowledge exchange**, best-practices, replication and stakeholder involvement within and amongst beneficiary communities, professionals, and the private sector at the national, regional and global levels

Component 5 provides overall project management and **Component 6** is the implementation of mid-term and terminal evaluation for the project.

Component 1 comprises of 8 National Sub-Projects that focus on country project interventions. Each project component under the National Sub-project is designed to deliver on key Project Outcomes as follows:

Project Component	Key Project Outcomes
1. Technical solutions and socio-economic benefits	**C1.1** Measurable **stress reduction at project sites** through appropriate sustainable water, land and ecosystems management interventions that account for climate change.
	C1.2 Enhanced **livelihood opportunities and socio-economic co-benefits** for targeted communities from improved ecosystem services functioning.
2. Monitoring systems	**C2.1** Strengthened **national and regional systems for monitoring** of environmental status with

	respect to key international agreements.
3. Policy and capacity building	**C3.1** Strengthened **policy and legislation** for the effective management of water, land and ecosystems resources that account for climate change.
	C3.2 Strengthened **capacity of national and regional institutions** and other stakeholders for water, land, and ecosystems management that accounts for climate change.
4. Knowledge management	**C4.1** Improved **engagement and information access** for practitioners and other stakeholders through targeted knowledge sharing networks.

The project will deliver supportive actions to the national sub-projects at the regional level through Components 2, 3 and 4.

The following is an account of the project components and associated sub-projects:

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

It should be noted that Barbados and Grenada did not commit national GEF STAR allocation to support national project investment; these countries will participate at the regional level, benefitting through the regional sub-projects. The following are summaries of the National Sub-Project interventions in the eight countries.

National Sub-project 1.1: Targeting land degradation and effective land management through the development of Innovative Financing methodologies in Antigua and Barbuda

The project will build from the investments made under the GEF-IWCAM Project that will champion an innovative approach to sustainable financing to address and mitigate further land degradation on mainland Antigua that is caused by the disposal of sewage and sewage sludge and other contaminants and waste oil into the environment. The project geographic focus will be on the Cedar Grove Watershed which extends over approximately 1,419 hectares, with forest coverage over 424 hectares although direct investments will be confined to some 15 hectares. The Project will complement existing and future efforts of the government to address the land degradation and pollutant loading issues by targeting the pollution and land degradation sources within the Cedar Grove watershed and installation of and upgrading control measures for reducing sediment, nutrient and chemical loadings. A best practice approach will be adopted as was the case under the GEF-IWCAM project through further demonstration of best practices in the diversion of effluent, collection and reuse of treated wastewater through downstream users that include farmers and hotel operators.

This project will contribute to a further expansion of the McKinnons wastewater treatment plant up to 379

m^3 per day to increase the service catchment to service an area that extends up to Friars Hill over some 1,419 hectares within the watershed. Additionally, the project will effectively assist in removing the burden of an estimated 13 tonnes of sewage and sewage sludge (with other contaminated waste) from entering the environment at the Cooks Landfill annually. The project will demonstrate the ability to self-finance the investments through the Sustainable Island Resource Fund (SIRF). The upgraded WWTP processing plant will be powered by solar arrays, thereby reducing conventional power requirements. Revenue generated from the WWTP through service connection and sale of outputs such as treated water for irrigation (and other non-potable purposes) and processed sludge (as soil ameliorants) will feed into the SRIF and build the capital base for further investment.

The project will support the establishment of runoff control measures to the McKinnon's pond through the installation of vegetated drainage channels to minimize sediment eroded from and transported along the main watercourses to the wetland. Additionally, to enhance the ecological and landscape value of the area and make more resilient to coastal erosion in consideration of rising sea levels associated with climate change, reforestation and afforestation of mangroves will be undertaken along the pond's periphery. These mangroves will lend further benefits to phyto-remediation. The project will also undertake reforestation of mangroves adjacent to the Cooks Landfill coastal area to mitigate contamination of the adjoining bay from leachate from the landfill with particular focus on the areas used for disposal of effluent. To support sustainability, the project will strengthen the policy and regulatory environment along with appropriate fiscal incentives.

Through on-site land and forest cover investments within 15 hectares over the target watershed areas, it is expected that an estimated 1,223.5 equivalent tonnes of CO_2 over the life of the project, or an average of 244.7 tCO_2eqv/year will be sequestered.

National Sub-project 1.2: Conservation and sustainability of biodiversity in Cuba from the integrated watershed and coastal area management approach.

The loss of biological diversity particularly within the more populated areas where almost half of Cuba's population reside is considered among Cuba's principal environmental problems. This is due to alteration and fragmentation of landscapes and ecosystems with the consequent decline in threatened populations of flora and fauna. This sub-project will implement improved environmental management approaches, including more integrated land-use planning and foster good agricultural practices through strengthened management capabilities of agencies and relevant stakeholders in Cuba. Special emphasis will being placed on threatened and endangered species, targeting four nationally important biologically important areas. The project will also seek to identify and build the capabilities to monitor appropriate environmental indicators, utilize mechanisms for strengthening cross-sectoral and inter-institutional coordination, and provide capacity-building in sub-project intervention areas. This initiative will contribute to the development of innovative approaches, tools and technologies for effectively addressing stresses that pose risk to terrestrial and marine biodiversity resources in the target areas, with a view to replication across the country.

The four intervention areas to be targeted within the project are situated within the western, central and eastern regions of the country and cover a combined area of 2,952 km^2, or 2.69% of Cuba's landmass. Within For three of the four selected watersheds, the Guanabo, Arimao and San Juan some 13,670 hectares of existing forest cover will be protected and sustainably managed (specifics on the Agabama watershed will be defined at inception phase). Within these selected watersheds, the project will support the reforestation of 1,690 hectares. The project target areas harbour at least 13 species of amphibian and reptiles and some

130 species of birds of which 15 are endemic. Within the target areas some thirty-three floral species are critically endangered, 41 are endangered and 21 are vulnerable. Of these 64 % are endemic. Through a combination of direct on-ground interventions that include reforestation, control of land-based sources of pollution and sustainable agriculture, the stresses on populations of these nationally and globally important biodiversity will be reduced. The project will make contributions to the strengthening the National System of Protected Areas (SNAP) (which covers 22% of the national territory in all its categories) which will not only assist conserve biodiversity but will of itself generate employment for local populations as rangers and other park employees.

Through on-site land and forest cover investments within 1,690 hectares over the target watershed areas, it is expected that an estimated 134,737.8 equivalent tonnes of CO_2 over the life of the project, or an average of 26,947.6 tCO_2eqv/year will be sequestered.

National Sub-project 1.3: Integrated management of the biodiversity, freshwater and land resources of the Higüamo River watershed and its associated coastal zone, including mitigating climate change impacts in the Dominican Republic

The sub-project seeks to address the significant concerns associated with acute environmental resource degradation and the impacts on the state of the biodiversity resources within the Higüamo River basin. The watershed is the largest in the eastern region of the country and ranks as the sixth largest in the country with an area of 1,182 km^2, equivalent to 2.4% of the country's total area. The watershed's estuarine zone contains two important protected areas; (i) the 141-hectare Laguna Mallen Wildlife Refuge for the protection of numerous species of egrets, migratory ducks and native and endemic species, and (ii) the 1,848-hectare Higüamo River Wildlife Reserve located in the upper part of the estuary which is dominated by mangroves and habitats for a large number of native, endemic and migratory species of birds, as well as other estuarine, coastal and marine species. Within the Higüamo River Wildlife Refuge numerous native plant species are classified as threatened, of which many are endemic. The Higüamo River is one of the most polluted rivers in the country, particularly within the lower one-fourth of the river running through San Pedro de Macoris where industry is concentrated and the province's urban center is located. Despite the river's estuary containing mangroves that are an important natural nurseries for a wide variety of fish, crustaceans and other fauna, biodiversity degradation on account of the pollutant influx into the environment is having detrimental impacts on sustainable livelihoods of communities that are reliant on the natural resource.

The objective of the sub-project is the conservation and sustainable use of biodiversity through the strengthening of national capacities of stakeholders for the integrated management of the resources of the Higüamo River watershed for the maintenance, restoration and sustainability of ecosystem services, supported by appropriate policies, institutional reforms and legislation. Creation of an enabling environment will facilitate the implementation of sustainable innovate solutions and effective technologies for mitigating environmental degradation. Some 27,574 hectares of existing forest cover in the Higüamo River watershed will be protected and sustainably managed through the project for the conservation of terrestrial biodiversity resources. The project will therefore seek to conserve the 221 species of vascular plants have been identified within the Higüamo River Wildlife Refuge of which 10 are endemic. Also to benefit will be the 3 endemic amphibian and 10 endemic reptile species found in the target area (seven are listed as endangered) and the 38 species of birds known to occur within the area, of which seven are endemic. The target area also includes the adjacent coral reef environment of the Southeast Marine Sanctuary that is important for the large number of marine species, including threatened species such as the Basking Shark (*Cetorhinus maximus*), the manati (*Trichechus manatus*).

Through on-site land and forest cover investments within 500 hectares over the target watershed areas, it is expected that an estimated 41,861.1 equivalent tonnes of CO_2 over the life of the project, or an average of 8,372.2 tCO_2eqv/year will be sequestered.

National Sub-project 1.4: Biodiversity Mainstreaming in Coastal Landscapes within the Negril Environmental Protection Area of Jamaica The **Negril Great Morass**

The Negril Great Morass (Negril Environmental Protection Area) encompassing some 40,670 hectares of coastal and marine ecosystems, is the island's second largest coastal wetland and one of the largest natural coastal ecosystems in the Caribbean region, supporting internationally significant species and high species endemism. Its biodiversity is threatened by human-induced drainage of its wetlands, coastal development and unsustainable agricultural practices. Dropping water levels and depletion of its flora and fauna are further exacerbated by frequent brush fires, peat subsidence, sedimentation, aquatic nutrient enrichment and invasive species. More recently, increasing brush fires are threatening the tourism industry and human health in nearby adjacent areas.

This national sub-component project aims to promote conservation of internationally significant wetland biodiversity through the restoration of wetland ecosystem services and sustainable use of wetland biological resources. To this end, actions will be undertaken to (1) restore historical hydrological and other physical processes, (2) enhance and re-establish native vegetation communities to provide habitat to wetland fauna, (3) eliminate conflicts that degrade ecosystem functions and (4) implement institutional arrangements to ensure the long-term sustainability of wetland biological resources. The project will also seek the declaration of the wetland as a Ramsar site of international importance, along with the creation of the Negril Royal Palm Reserve as a national park to expand representation of inland water ecosystems in the PA system. Furthermore, it targets extending protective coverage to threathened species such as Royal Palm (*Roystonea princeps*) and West Indian Whistling Duck (*Dendrocygna arborea*). The project will contribute to the GEF focal area of biodiversity, including the GEF operational programmes on mainstreaming biodiversity conservation and sustainable use and improving the sustainability of protected area systems. It will also further enable the Government of Jamaica to meet its obligations under the Convention on Biological Diversity (CBD) and to achieve national goals in Vision 2030 on the sustainable management and utilization of natural resources.

Through on-site land and forest cover investments within 230 hectares over the target watershed areas, it is expected that an estimated 21,955.0 equivalent tonnes of CO_2 over the life of the project, or an average of 4,391.0 tCO_2eqv/year will be sequestered.

National Sub-project 1.5: Addressing Impacts of Acute Land Degradation in the College Street Ghaut in St Kitts and Quarry and Sand Mining Hotspots on Nevis

On St. Kitts, the College Ghaut and associated watershed area covering approximately 662 hectares has been subjected to acute land degradation on account of significant encroachment associated with agriculture and settlements, along with the indiscriminate disposal of solid and liquid (grey waters) waste. Removal of protective vegetation has resulted in increased erosion rates from the river banks and across the upper reaches of the watershed. This has resulted in sedimentation of the river channel with heightened risk of flooding and loss to life and property particularly within the lower watershed reaches. The main watercourse of the College Street Ghaut watershed originates north of the Olivees Mountain and runs past the west of the airport runway, through to the capital city of Basseterre, discharging to the sea. There is evidence of increasing sedimentation of the marine environment in the Basseterre Bay and some impacts to

the coral reefs, which are prime recreational dive sites and thus foreign revenue earners.

On the sister island of Nevis, land degradation is associated with poor quarry management practices that results in excessive sediment discharge into the streams and the marine environment. There are seven seasonally active, privately operated quarries on the island, of which five are on lands leased from the Government, while two are on private land. These quarry sites cover a combined 27 hectares and are located in the area of Hicks Estate, Butlers Mountain, Indian Castle and Dogwood Estate along the eastern and southern sides of Nevis. In addition to excessive sedimentation from quarry operations, numerous beaches are exploited for sand with similar impacts in terms of acute erosion particularly around Indian Castle.

On St. Kitts the project interventions will focus on the installation of soil conservation measures within the College Ghaut. These measures will include establishment of vegetative contour rows, protection of existing forests, installation of new gabions and maintenance of existing ones along the main watercourse, stabilization of existing retaining walls and bridges and clearing of culverts, drains, outfalls and roads of debris and sediment. On Nevis on-site investments will include stabilization of ghauts and water harvesting systems to reduce quarry run-off into the ocean; replanting of mangroves and other coastal plant species towards restoration of coastal wetlands, deployment of artificial reefs at New River, Indian Castle, Dogwood and Long Haul, beach restoration at Indian Castle and restoration and reforestation of non-productive quarry areas. For both islands the project will provide support for long-term sustainability and replication through policy, regulatory support, exchange of best practices. The project will support selected final steps in the legislative drafting of the National Conservation and Environmental Management Act (NCEMA), a federal law, to ensure quarrying and sand mining are adequately covered, as well as development of a Sand Mining and Quarrying Ordinance for Nevis and will introduce sector standards together with a licensing system for quarry operators that is conditional on training and compliance.

Through on-site land and forest cover investments within 135 hectares over the target watershed areas, it is expected that an estimated 13,169.5 equivalent tonnes of CO_2 over the life of the project, or an average of 2,633.9 tCO_2eqv/year will be sequestered.

National Sub-project 1.6: Addressing problems of land degradation and ecosystem degradation in the upper reaches of the Soufriere Watershed in Saint Lucia

The project seeks to address land degradation within the Fond St. Jacques / Migny area in the upper reaches of the Soufriere watershed due to unsustainable land management practices which has and continues to impact negatively on the livelihoods of the population that depends on the land and adjacent coastal resources. The project will introduce innovative solutions for erosion control, agricultural non-point source mitigation, land stabilization and runoff/flood control to degraded sites located over 84 hectares. The intervention approach adopted will be highly participatory, involving at least 30 farmers, agricultural and forestry extension officers and community representatives. The project will seek to introduce livelihood alternatives to include cut flower and ornamental production and agouti rearing amongst others. The intervention will also support the development of a protocol for science-based monitoring with respect to LD, IW and socioeconomic indicators in assessment of achievement of the project objectives. The project will provide the necessary training to targeted stakeholders in SLM techniques as well as appropriate business models required for sustainable livelihoods. The GEF Small Grants Programme will provide support in building capacity of stakeholders and other community members toward the development of livelihood initiatives associated with the project.

Through on-site land and forest cover investments within 50 hectares over the target watershed areas, it is expected that an estimated 3,878.7 equivalent tonnes of CO2 over the life of the project, or an average of 775.7 tCO2eqv/year will be sequestered.

National Sub-project 1.7: Addressing Land Degradation in the Georgetown Watershed, Saint Vincent in St. Vincent & the Grenadines

The Georgetown Watershed management area on Saint Vincent encompasses some 5,750 hectares, including the drainage basins for the (a) Byera River, (b) Congo Valley River and Jennings River, which merge midway to form Grand Sable river, that flows to the coast, (c) Caratal River and Perseverance River and (d) the Langley Park River. The Georgetown community was severely impacted by Hurricane Tomas in October 2010 and destructive floods associated with an extreme rain event in April 2011. The watershed has also been undergoing gradual degradation, mainly associated with agricultural development. In the upper-most reaches of the watershed the illicit cultivation of marijuana is contributing to the problem. Pig rearing with consequent pollution hazard has been increasing particularly in the Jennings/Congo valley. Effluent from manufacturing is discharged into the mouth of the Perseverance River, creating a nuisance to the community and impacting the aquatic biodiversity downstream. The watershed area falls within a national biodiversity hotspot, which, among other rare and threatened species, is home to the endemic St Vincent Parrot (*Amazona guildingii*), a national flagship for conservation in the country, and five endemic reptiles.

The project will target reforestation and conservation forestry interventions over at least 7.5 hectares within upland areas where landslides have occurred and along some 1.8 km of riverbank that continue to actively erode. Approximately 10 hectares of farmland was impacted by the severe flooding. At least 2 hectares of the most severely degraded areas will be reclaimed using a range of soil stabilization and forest management techniques which will serve to demonstrate innovative approaches as a learning centre for sustainable land management practices. It is expected that some 15 to 20 farm holdings will be positively impacted, bringing lands back into productive potential in the medium to long-term. The project will include commercial thinnings over approximately 5 hectares within mahogany and blue mahoe forest plantations located at Perseverance. The project will also target the reduction of harmful discharges of pig effluent into the environment through the employment of dry manure techniques. The project will also contribute to the development of the Jennings Bird watching Trail; an upgrade to an existing forest patrol trail which will result in spin-off economic benefits to the community.

Through on-site land and forest cover investments within 15 hectares over the target watershed areas, it is expected that an estimated 1,403.3 equivalent tonnes of CO_2 over the life of the project, or an average of 280.7 tCO_2eqv/year will be sequestered.

National Sub-project 1.8: Reduce and reverse land degradation at selected Quarry site(s) around Valencia, Trinidad and Tobago, by an integrated water, land and ecosystems management approach

The project seeks to reduce the acute degradation that is occurring over some 100 hectares of degraded quarry areas within the Valencia region on north-east Trinidad through the implementation of innovative land rehabilitation methods and reduce the impact on communities through the application and adherence to international best practice for quarry operators, and improved adherence to local legal parameters. The major activities proposed to achieve these outcomes include (i) the establishment and implementation of an effective public awareness campaign to increase voluntary compliance and monitoring of quarries by legislative agencies, (ii) the maintenance and enhancement of the natural ecosystems for the benefit of

biodiversity health and eco-tourism operators through the establishment of an effective and operational stakeholder management committee and (iii) the revision and operationalization of existing relevant policies and/or development and operationalization of new policies along with relevant legislative requirements. Ultimately, the project will lead to increased land cover and carbon sequestration, protection of surface and groundwater resources, conservation of biodiversity of global significance and create an enhanced enabling environment including the institutional capacity for good forest management practices.

Through on-site land and forest cover investments within 100 hectares over the target watershed areas, it is expected that an estimated 9,171.4 equivalent tonnes of CO_2 over the life of the project, or an average of 1,834.3 tCO_2eqv/year will be sequestered.

Approaches for effective realization of the GEF Increment in national project implementation: The national projects will all be implemented within a harmonized approach in the context of socio-economic feasibility, spatial planning at the watershed scale, the indicators for monitoring impact, monitoring installations, capacity building, generation of results and abstraction of lessons learnt, awareness raising and integration of community/private sector level entrepreneurial engagement with support from the GEF Small Grants Programme. The following is a brief description of these approaches to be implemented in support of all the projects.

Inception stage socio-economic feasibility analysis: All projects will be subject at inception to a socio-economic feasibility screening and baseline assessment that will assess the potential economic benefits from the projects and identify gaps in the baseline that need to be addressed to fine-tune the project execution so that it yields expected results. The socio-economic analysis will seek to identify avenues for participation by the community and the private sector so as to build revenue generation opportunities economic partnerships for sustainability of the actions post-project. The evaluations will follow a participatory approach thereby gaining buy-in from the onset and facilitate the development of the project workplans.

The watershed management planning framework: The project will adopt a "ridge-to-reef" watershed basin management approach building on the experiences from the GEF-IWCAM project where the national project interventions will be executed within a watershed management unit framework where the indicators of changes in environmental quality will be tracked at the watershed scale. These plans will therefore represent the operational template for land use planning/zoning for climate-resilient land, biodiversity and water resource conservation and minimization of LBS pollution from point and non-point sources. The watershed management approach is the foundational basis for translation of National Action Plans (NPAs) to on-ground spatial implementation toward compliance in meeting the obligations of the LBS Protocol (in alignment with the UNEP GPA at the global level). It should be noted that only those elements of relevance to the national project will be elaborated. It is anticipated that this watershed planning framework will serve as a spatial platform upon which physical development and other environmental and socio-economic sector plans can be integrated. It is anticipated that the processes applied in the development of these plans will be up-scaled and replicated in the other countries.

Capacity building: Training needs assessments will be conducted based on the implementation requirements for the national projects. This will be done at both the institutional support level and at the community and private sector levels depending on the nature of local partnerships. Where countries share common interventions on-site training will be supported through regional cooperation via technical exchanges between countries further supported by the project umbrella under the various regional components. Project stakeholders will also participate in regional and international level-fora to present the

results and lessons learnt from project implementation and contribute to the global knowledge network. Gender sensitivity will be built into capacity building so that maximum benefits may be derived based on specific stakeholder needs.

Monitoring and assessment: For all project sites a monitoring and assessment protocol will be established. This will allow for the tracking of changes to the baseline as contributed to by the project and provide a measure of continual assessment post-project that will inform upgrades/enhancements to the interventions and/or policy measure for up-scaling and replication. The monitoring protocol will be prepared for each country so as to reliably measure against the GEF IW, LD, BD and SFM Tracking Tools, where the most appropriate indicators that can be monitored within the capacity established under the project. To capture the data defined by the protocol the requisite environmental monitoring tools and equipment will be installed. This can include *inter-alia* hydro-meteorological instrumentation, pollutant samplers, other environmental sensors to track parameters specific to the project needs as well as the systems for data storage and analysis. The project will not duplicate existing national systems but rather build on those in existence. The monitoring and assessment will be supported by through a Research Partnership (through the regional project umbrella) consisting of partner research institutions from within the countries or externally (other Caribbean countries or from outside the region). The Partnership will foster the supervised deployment of researchers (including students at graduate and post-graduate level) to the projects to assist with scientific observation, analysis and reporting, thereby strengthening the overall project M&E while contributing to academic certification and the global scientific knowledge base. The Research Partnership Framework is detailed further in Component 2.

Community engagement and empowerment: For each of the national interventions, the requisite capacity will be developed for stakeholders who are directly charged with execution of the various project actions. This will be done under resources allocated for the national project itself, to be augmented by resources form the GEF Small Grants Programme for the elements of the project that community groups may become engaged with and economic opportunities derived. The GEF SGP provides an excellent entry-point for supporting grassroots innovation in sustainable livelihoods development drawing from years of collective experiences of the programme at the global level and at the SIDS level. The engagement of the wider beneficiary communities is essential for sustainability of the project interventions and the financial models developed as part of the inception activities will seek to identify those areas that socio-economic benefits can be gained. The enhancement of livelihoods of beneficiary communities is a high priority for the overall project. UNDP will be responsible for supporting this element.

Gender mainstreaming: For all interventions, the participation of stakeholders whether at the level of the agency implementers or at the community level the dimensions of gender engagement will be assessed. Analysis of participation and benefits across the traditional male versus female dimension will be augmented by analyses in respect of special needs/interest groups and other societal segments such as vulnerable 'at-risk' groups. These analyses will be carried out in parallel with project implementation and as such, will not represent stand-alone assessments. These analyses to be done over the course of project implementation, will be nested mainly within national and region Component 3 that is concerned with policy and strengthening of the enabling frameworks. Based on the principle of adaptive learning the project interventions will be modified to appropriately within acceptable limits of change to realize gender mainstreaming within implementation.

Component 2. Strengthening of the Sustainable Land Management (SLM), Integrating Water Resources Management (IWRM) (and Water Use Efficiency (WUE)) and ecosystems Monitoring, and Indicators framework. The component will develop further and apply regional/national the IW, LD, BD and SFM indicators

that have been identified within the GEF focal area tracking tools. The suite of indicators will be elaborated at project inception in close advisory 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 also provide the mechanism to track project impact on the implementation of the LBS Protocol (of 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 methodologies for monitoring land degradation trends and changes in biodiversity and ecosystem health and services. This will build on existing and on-going GEF-financed initiatives to fully integrate methods for establishment of project baselines, identifying measureable indicators, and subsequent monitoring. In this regard, an important support mechanism to this component is a **Research Partnership** composed of lead project partners whose primary mandate is scientific investigation. This partnership will therefore include academic institutions and research organizations within the Caribbean and from outside the region. These agencies will provide a coordinated approach at the regional level to the monitoring of project achievements through the various GEF tracking tools that form the basis of the project M&E framework. Through the Research Partnership researchers (graduate, post-graduate and other) will work with national projects within Component 1 to assist with scientific monitoring and reporting on the project outcomes. The monitoring mechanism developed for the project will include climate considerations and gender mainstreaming in participating SIDS.

Feedback will be incorporated from other regional and nationally related projects developing indicators and monitoring and evaluation plans and regional agreements (i.e. GEF-IWCAM and TDA and SAP process in CLME, among others) and will work closely with all national stakeholders to ensure that the monitoring and data analysis approach developed feeds in from existing research and databases, to support national priorities, plans and strategies, and where capacity gaps are identified, that appropriate capacity is built upon for the long term monitoring of IWRM/WUE, ICZM and SLM and ecosystem services provision. As such this component also works closely with the on-the ground interventions and innovative solutions developed and implemented under Component 1 and previous demonstration projects (such as from GEF-IWCAM), the policy, legislation and institutional reforms and capacity building activities under Component 3, and the knowledge, exchange, best practices and stakeholder involvement of Component 4. Finally the project will contribute to advancement of development of harmonized national indicators frameworks that will meet most or all national reporting requirements on NRM (pursuant to regional and global convention reporting requirements) and support investments in requisite information and decision support systems.

Component 3. Strengthening of the Policy, legislative and institutional reforms and capacity building for Sustainable Land Management (SLM), Integrating Water Resources Management (IWRM)/Water Use Efficiency (WUE) and ecosystem services management. This component addresses the policy, legislation, institutions and capacity needs to enable Caribbean SIDS to develop and implement integrated natural resources management articulated through IWRM (WUE), SLM and BD (including SFM) plans and 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. Focus will be (in parallel with the innovative project interventions) on development of policy tools and guidelines for the protection of surface and ground-waters (associated with extreme events, drought and projected climate change), sustainable sanitation, and sustainable land and biodiversity management abstracted from best practices and lessons learned generated under Component 1, and disseminated through knowledge networks through Component 4. These tools and guidelines will be used

as the basis for strengthening implementation of integrated natural resources management mainstreamed within policy, laws and regulations at both national and regional levels.

At the national level, consultative dialogue as the mechanism for engaging, integrating and empowering NICs in integrated natural resources management 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 will be linked to the implementation of the national project interventions that fall within Component 1. 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.

Integral to the component will be capacity building across all the relevant areas required to support successful project implementation and sustainability post-project. Gender-sensitive capacity strengthening will be informed by needs as identified by the countries required for implementation of the national interventions. Regional training programmes will be formulated and executed in response to common needs across countries.

A **Governance Partnership** group that comprises key regional and international governmental and non-governmental agencies will provide technical back-stopping to assist countries strengthen and mainstream policies and strategies drawing on the knowledge-base of these agencies through collective experience in work in the region. The contributions will be rolled out at both the regional component "umbrella" and under the national sub-projects in respect to interventions at the country-level related to enhancing existing mechanisms and where practical to new ones. Based on common themes that emerge from the national sub-projects, investment in policy and capacity building support will be harmonized at the regional level to gain efficiency and synergies in implementation.

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 and national and global targets on SLM and BD conservation. The project will utilize existing knowledge 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).

One of the lessons learnt from the GEF-IWCAM project was that while the project stimulated and supported awareness raising in the countries, the level of effort invested in comprehensive national-level PA/PE programmes so as to gain high visibility was rather low. In the main, the project tended to have greater visibility at the local demo site, although there were exceptions where special events raised the profile to the national level for limited periods. The IWEco Project will therefore draw on the outreach and knowledge products generated from the IWCAM Project to create from inception, a high-profile presence at the national level through innovative social media and marketing approaches with consistent themes across the participating countries. A **Public Awareness / Public Education Partnership** will provide close support under the regional component and at the national levels through application of innovative tools and methods for expanding buy-in and driving behavioural change around the implementation of the national sub-projects. This will be translated to regional-level support in terms of harmonization of media and outreach products.

The project will facilitate the formulation of multi-sectoral **Communities of Practices (CoP)** along various technical and thematic lines emanating from the national project interventions under Component 1 where practitioners and interested stakeholders can share through knowledge networks, their experiences, challenges and issues, solutions, information and insights. The CoPs will serve as important avenues of 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.

A6. 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:

The primary risk that the project may face is low level of buy-in or uptake of the investments that are delivered under the project. The key factor in this case has mainly to do with the state of the economies in many of the Caribbean countries in relation to the degree to which state governments can commit core resources, both in terms of human and financial resources to continue making further investments or strengthening the enabling environments to make the interventions truly sustainable. High-level political or policy-level buy-in to foster strategy implementation is rather driven by the ability of government to realistically commit to these investments and if there are viable alternative options to contribute to sustainability that reside outside the public sector through private sector partnerships, this will be favoured. The approach to be adopted by the IWEco Project will seek to address the sustainability issue that was highlighted in review of the IWCAM Project which noted that the private sector needed to be more prominent partners in the project interventions. Efforts at building public-private-partnerships (PPP) with the project were advanced in some countries notably the Dominican Republic and Jamaica and this approach will be expanded on in IWEco. The underlying assumption that underpins the risk management strategy is that the sustainable solutions proposed will be driven to the extent practical by business models and generation of revenue to beneficiaries. The IWEco Project must be cast in the perceptions of stakeholders as one that is not solely about environmental protection but rather building financial, economic and social security through good environmental practice through responsible actions that are seen to include stakeholders beyond the just the traditional state actors. The risks and mitigation strategy is presented below.

Risk Statement	Risk Level	Risk mitigation strategy
National water, land and ecosystems management policies and plans are not accepted by the governments and/or are poorly executed	Medium-high	• Project supports a transparent and all-inclusive consultation process. Strong leadership by national agencies and support by high-level "champion" policy makers • Seek to empower civil society organizations and the private sector by their demonstrating and endorsing benefits of investment in integrated and sustainable water, land and biodiversity resources management • The technical support team and partners will help ensure training and knowledge products are targeted and purposeful. Government staff will be provided with tools to apply the methods and systems set up for implementing plans and policies

Risk Statement	Risk Level	Risk mitigation strategy
		enhanced or developed by the project.
Change in political administration that result in reversal or change of agreed plans and policies by previous administration	Low-Medium	• Involve multiple agencies and sectors in the formulation of the plans and policies, so that they are non-partisan and widely accepted. Engage opposition parliamentary representatives in the dialogue, planning and implementation processes
Occurrence of extreme events such as floods and hurricanes and other major natural disasters such as earthquakes	Medium-high	• 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 natural disasters.
Occurrence of adverse economic conditions and associated social destabilization	Medium	• Investment in appropriate and financially sustainable solutions that are effective with low level capital investment. • Build stakeholder buy-in and investment toward uplift of livelihoods at the local community level by provision of investment incentives under the project
Existence of governmental fiscal challenges that result in changing priorities diversion of human resource deployment to alternative areas	Medium- high	• Target increased engagement of the private sector so as to broaden buy-in beyond government. • The project to facilitate investment by the private sector and implement mechanisms to enhance long-term sustainability
Private sector do not perceive gains from the project and adopt a business as usual approach with negative impacts on the environment	Medium	• Project promotes best management practices to move toward adoption of voluntary schemes. Educate the private sector on national obligations to various regional and international environmental treaties
Innovative solutions are not technically and/or economically viable	Medium	• All national projects will be subject to a screening for technical and economic viability that will be part of the development of the detailed project workplan at project inception. This will be done in a participatory manner with stakeholders that include business interests and ministries with responsibility for fiscal investments • The project will solicit the active engagement of financing institutions in planning and implementation • Targeted research through the Research Partnership will inform the effectiveness of the project and allow for adaptive management
Low level of buy-in amongst senior policy stakeholders	Low-medium	• Implement innovative public awareness campaigns that feature special seminars around finance themes at both local and regional levels, as well as facilitated

Risk Statement	Risk Level	Risk mitigation strategy
		field excursions structured as part of the national and regional PA/PE strategy
Insufficient buy-in amongst the general community with limited awareness of the project and its outputs	Low- medium	• The project elevates the PA/PE campaigns to that of national 'blitz' campaigns through application of social marketing tools and methods.
Information outputs generated by the project do not become widely known	Low	• Investment in deliberate strategies for enhancement of communication by project proponents. • Active engagement of the national inter-sectoral committees for promotion to the wider community
Lessons and knowledge from the project are not effectively replicated across other Caribbean countries and other SIDS regions	Low	• Project proponents and stakeholders are empowered to share the knowledge and lessons through participation at regional and international fora. The project supports technical exchanges between countries • There is adequate documentation and widespread dissemination of these outputs
Capacity of community beneficiary groups are not at level to sustain the project outputs	Medium	• Project invests in community capacity building with particular focus on entrepreneurship and fostering of micro enterprises associated with the project
Low capacity to sustain monitoring and assessment of environmental benefits associated with the project implementation	Medium	• Project builds requisite capacity but also considers easily implemented tools and methods particularly relying on 'citizen science' approaches to augment the data capture capabilities of responsible state agencies
Insufficient sources of long-term finance to continue activities toward impacts after project closing	High	• The project focuses heavily on strong, self-reinforcing partnerships that are integrated into existing reslationships and drivers for cooperation across a variety of specific actors. • Businesses, NGOs, communities and research partners' interest is spurned with the investments made in the form of in cash and in kind co-financing.

A7. Coordination with other GEF financed initiatives

The following is an account of a few of the key GEF-funded regional-level initiatives that will be complementary to the IWEco Project (a full account is given in the UNEP ProDoc).

- The **Caribbean Regional Fund for Wastewater Management Project (CReW)** is a four year project (now into its second half) that focusses on piloting revolving financing mechanisms, appropriate waste water management technologies and related wastewater management reforms in the wider Caribbean region (WCR). Given the scope of water and sanitation and effluent management that falls within the remit of the IWEco Project, contributions from the CReW Project will be supportive of the several of the national project interventions where knowledge generated by the project will

feed into the design and implementation of innovation in wastewater management.

- The **GEF-Caribbean Large Marine Ecosystems (CLME) - *Sustainable Management of the Shared Living Marine Resources of the Caribbean Large Marine Ecosystem and Adjacent Regions* covers Caribbean Large Marine Ecosystem (CLME) and the North Brazil Shelf Large Marine Ecosystem (NBSLME).** Jointly referred to as the CLME+ it will see the implementation of the Strategic Action Programme (SAP) for the CLME that will draw on recommendations, interventions and lessons learnt to promote further upscaling and replication across the countries that fall beyond the remit of the IWEco Project. The close coordinated implementation between the CLME SAP and the IWEco Project will allow for joint learning and exchanging of best practices.

- The **GEF Transboundary Waters Assessment Programme (TWAP)** will develop ecosystem-based assessment methodologies for five transboundary water systems (rivers, lakes, groundwater basins, Large Marine Ecosystems and open ocean) for the GEF in setting priorities and catalyse a partnership for conducting such a global assessment. The methodology will cover also inter-linkages among five water systems and will be used for assessing the changing conditions resulting from human and natural causes. The development of methodologies will be based on indicators and existing data and information sources. The Caribbean Large Marine Ecosystem will be the principle transboundary waterbody of relevance in the context of the TWAP, where it is anticipated that the knowledge products generated by the project will be of direct relevance to IWEco, particularly in the application of the indicator-based assessment methodology for river basins, lakes, groundwater and LMEs. Localized assessments under Component 2 of the IWEco project will benefit from lessons generated from the TWAP indicator framework.

- The **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) is in wind-down across the participating Caribbean countries. The project assisted with developing individual, institutional and systemic capacities to mainstream SLM into national policies, and identifying appropriate mechanisms for financing SLM. There outputs from this project will be foundational for the IWEco Project which will assist in closing remaining gaps that may still exist at the country level.

- 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 biodiversity conservation in eleven Caribbean islands (most within IWEco) for 2010-2015. The CEPF supports work of civil society in developing and implementing conservation strategies, as well as in raising public awareness on the implications of loss of biodiversity. The IWEco Project will draw on the lessons generated from the CEPF initiative particularly in the areas of co-management partnerships for natural resources management.

- The **Caribbean Challenge** is a region-wide effort led by the Nature Conservancy (TNC) that aims to protect the health of the Caribbean's land 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 IWEco Project will seek to build on models of cost recovery and financial sustainability in environmental resources management in the participating countries

A. ADDITIONAL INFORMATION NOT ADDRESSED AT PIF STAGE

B.1 How stakeholders will be engaged in project implementation

A number of key stakeholders and stakeholder groups will need to be involved in the project in order for it to be successful. Detailed information are also available in the Prodoc in table 6 with regional stakeholders mapped per component and in table 7 with national non-governmental and community-based organizations in support of the national interventions.

At the level of project management and coordination UNEP will be the lead Implementing Agency with UNDP being the Co-Implementing Agency. UNEP car/RCU and CARPHA will be the Co-Executing Agencies:

- **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 recognized 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 technical node for 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. UNDP will have responsibility for support in strengthening of livelihood opportunities in the development and execution of small-scale community investments associated with the national sub-projects in the eight countries through the GEF Small Grants Programme. UNDP will also have specific responsibility for execution of activities under Regional Sub-project 4 on Knowledge Management.

- The **Caribbean Public Health Agency – Environmental Health & Sustainable Development**

Department (CARPHA) - Building on the experience of the GEF IWCAM project execution arrangement, the project will also be co-executed by CARPHA EHSD Department (formerly CEHI), with the Project Coordination and its administrative requirements (including staffing) to be based at CARPHA in St. Lucia. The proposed execution arrangements take advantage of the recognised expertise of CARPHA's EHSD Department in the field of freshwater resource management. CARPHA's EHSD Department, 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. The Department maintains 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 Department is a training center for environmental laboratory diagnostics services through its accredited laboratory facility. The other CARPHA divisions will strengthen the human health-environmental management nexus particularly through epidemiological and other environmental health linkages.

The following are the technical project partners, clustered into 'partnerships' based on core technical competencies.

Research Partnership: this is the core partner agencies that will facilitate the scientific monitoring and assessment of the field project outputs related to Project Component 2. The contributions of this grouping will also feed upwards to the project's RTAG for translation to the policy and knowledge sharing components of the project.

- **University of the West Indies (UWI)** - UWI's Centre for Resource Management and Environmental Studies (CERMES, Barbados) will support research and policy guidance on areas related to water use efficiency, watershed management and IWRM in collaboration with regional partners.

- The **National Oceanic & Atmospheric Administration – National Ocean Service, International Program Office (NOAA-NOS)** will support 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, assist with watershed monitoring and demonstrating integrated watershed management approaches to reduce land-based sources of pollution.

- The **United Nations University Institute for Water, Environment & Health (UNU-INWEH)** will contribute technical expertise to strengthen capacities in watershed management, small system wastewater treatment, water and sanitation, and integrated coastal marine management. INWEH will also contribute to investigations on the water-health nexus associated with pollution influences for both fresh and coastal waters.

- The **International Atomic Energy Agency - Environmental Laboratories (IAEA-EL)** will provide advisory support and training to diagnostic laboratories in the Caribbean to introduce new techniques and methods for tracking pollutant loading into the receiving marine environment and support inter-laboratory quality assurance and quality control.

- The **Caribbean Institute for Meteorology and Hydrology (CIMH)** will support the project through provision of technical and advisory services associated with the establishment of hydro-meteorology field monitoring protocols, equipment installations and training in use and management of

monitoring equipment.

- **UNESCO International Hydrology Programme – (IHP)** will introduce to the project a variety of existing programmes such as Flow Regimes from International Experimental and Network Data (FRIEND), Groundwater Resources Assessment under the Pressures of Humanity and Climate Change (GRAPHIC) and the International Flood Initiative (IFI). UNESCO-IHP will facilitate access, at both the national and regional project levels, to the regional network of UNESCO water-related Centers and Chairs in relevant subject areas.

- The **Food and Agriculture Organization (FAO)** leads the land and water resources management thematic area within the CARICOM Jagdeo Initiative for agricultural development. FAO will assist by drawing on its network of specialists to build technical capacity within local resource agencies for sustainable forest management.

- The **Water Center for the Humid Tropics of Latin America and The Caribbean (CATHALAC)** will bring capacity development in remote sensing applications for environmental assessments and GIS-based applications for spatial land and water resources planning. In addition the Centre has developed partnerships with NASA in extending the environmental modelling to assess watershed de gradation (soil loss and nutrient loading) through relatively simple-to-apply modeling tools such as NSPECT.

- The **Center of Engineering and Environmental Management of Bays and Coasts (CIMAB)** is a one of the two Regional Activity Centres (RACs) for the LBS Protocol and will bring to the project expertise in integrated coastal zone management, modeling of land-oceans impacts in terms of the physical and biological dimension from human influences.

- The **Institute of Marine Affairs (IMA) Institute of Marine Affairs (IMA)** is the other Regional Activity Centres (RAC) for the LBS Protocol and will support the project in capacity development in environmental quality assessment of marine ecosystems.

- The **Pan-American Health Organization (PAHO)** will support research in close partnership with CARPHA to strengthen building evidence-based linkages between environmental quality and environmental health related to maintaining human health and disease prevention.

The following partners under a **Governance Partnership** will contribute to the strengthening of policy and advocacy in support of Project Component 3 across the various project components and the major thematic areas in water, land and biodiversity resources management.

- The **Organisation of Eastern Caribbean States (OECS)** supports its Member States in realizing policy objectives and strategic targets articulated within the **St. George's Declaration of Principles for Environmental Sustainability** and will be implementing significant initiatives that have common technical areas with the IWEco Project. Given the nature of the outputs from these initiatives in the context of the IWEco Project, close joint collaboration in the implementation process is envisaged.

- The **Caribbean Community Climate Change Centre (CCCCC)** is the lead CARICOM agency with responsibility for advancement of the *CARICOM Regional Framework for Achieving Development Resilient to Climate Change* and its *Implementation Plan* for the Caribbean. Within the scope of the various climate change initiatives that are under implementation through the Centre (an account is provided in the ProDoc), joint collaboration with the Project through common areas of collaboration

will be sought.

- The **Caribbean Community Secretariat (CARICOM) Sustainable Development Programme** will support the project in opening up opportunities for the project achievements to be presented and deliberated on at the high-level policy arms of Caricom through the Council of Trade and Economic Development and the Council Council for Human and Social Development. The CARICOM Secretariat has been implementing an MEAs strengthening initiative that includes common elements in respect of policy and mainstreaming that are consistent with the IWEco Project.

- The **Caribbean Tourism Organization (CTO)** is expected to provide policy-level guidance on joint collaboration and provide assistance in promoting awareness of the initiative amongst constituents and ministers with responsibility for tourism in the Caribbean region. The CTO places emphasis on the promotion of sustainably responsible tourism investment in terms of supporting livelihoods within communities and good environmental practices.

- **Global Water Partnership – Caribbean (GWP-C)** will support capacity development in the project countries at both national and regional levels with focus on the area of integrated water resources management. GWP will bring the wealth of global experiences to the project through tools designed for application by decision makers in the water resources sector.

- The **Caribbean Water & Wastewater Association (CWWA),** is an association of water and waste sector professionals that seeks to advance the science, practice and management of water supply and wastewater disposal. The Association will support the translation of the project outputs to practice amongst its constituents.

- The **Caribbean Water & Sewerage Association (CAWASA)** is a regional umbrella organization of water utilities dedicated to serving the growth and development of its members through capacity building in all areas of utility management. CAWASA will promote areas of mutual cooperation under the project particularly in respect to strengthening of policy, legislative and institutional reforms and capacity building.

- The **Organization of American States (OAS)'s Department of Sustainable Development** will provide policy level support to the project through direct technical advice from experts under the relevant portfolios of the Department which include Water Resources Management, Energy and Climate Change Mitigation, Biodiversity and Sustainable Land Management and Environmental Law and Governance.

- **The Nature Conservancy (TNC)**'s support in the area of sustainable financing for natural resources management, including the **Caribbean Challenge (CCI)** initiative will be of significant interest in terms of replication and/or strengthening of similar mechanisms at the national and regional levels under the IWEco Project.

- **International Union for Conservation of Nature (IUCN) - Regional Office for Mesoamerica and Caribbean** will partner with the IWEco Project in strengthening capacity building amongst state agencies and local stakeholders in the integration of ecosystem services principles in watershed management at the national level with development of best practice guidelines at the regional level of the project.

- The **Caribbean Network for Integrated Rural Development (CNIRD)** is the Support Office for the Partnership Initiative on Sustainable Land Management (PISLM), a mechanism to facilitate exchange of experiences and good land management practices amongst UNCCD Caribbean Party States.

The **Public Awareness / Public Education (PA/PE) Partnership** will support the awareness and education strategy development and implementation of the project within Component 4. The project will employ social marketing methods and popular media to give maximum visibility through 'blitz campaigns' to generate buy-in across all segments of society, inclusive of policy makers, the private sector and community. The extensive range of knowledge products generated by the GEF-IWCAM Project, combined with lessons learnt from project implementation by other partners will be utilized from the onset of the project to 'popularize' approaches and actions proposed by the project.

- **PCI Media Impact** utilizes 'Entertainment-Education' to solicit behavior change and empower communities to inspire enduring change through creative storytelling. Media Impact will use the lessons and experiences gained from their current My Island, My Community programme to apply within the IWEco Project framework at both national and regional levels.

- **Panos Caribbean** reaches out to marginalized people through capacity building, information production, information dissemination and networking on communicating Caribbean development issues. Within the IWEco Project and will incorporate communications elements in technical training and develop sectoral communication strategies to create an enabling environment for water, biodiversity and sustainable land management.

- **Caribbean Natural Resources Institute (CANARI)** will assist with empowerment for action and equitable participation associated with the project interventions at the communal level. CANARI's tried and tested **'action learning'** model will build structure into the participatory approach in decision making amongst local project implementers augmented by requisite research, capacity building, communication and fostering partnerships.

- **Caribbean Student Environmental Alliance (Caribbean SEA)** seeks to empower Caribbean youth to lead their communities toward better stewardship of their natural resources through collaborative watershed initiatives. Under the project the organization proposes to broaden 'citizen science' in learning and action in promoting environmental awareness.

  The **Caribbean Examinations Council (CXC)** will partner through local ministries of education and secondary schools where students in Forms 4 and 5 (in all countries except Cuba and The Dominican Republic) write school-based assessments (SBAs)[14] as part of the fulfilments for graduation from secondary school level. SBA subject areas that include biology, geography, integrated science and social studies have potential alignments to learning areas under the project.

Resource mobilization partners such as the Caribbean Development Bank (CDB), the Inter-American Development Bank (IDB) and the World Bank will bring expertise to the IWEco project planning and implementation process particularly at the national level to facilitate the replication of solutions that are the focus of the national sub-projects. The GEF Small Grants Programme will support the engagement of community-based organizations in partnership with the main national project interventions through co-management arrangements. Through access to grants under the SGP community groups will be able to implement actions that create entrepreneurship opportunities that will be created as a result of implementation

[14] Manual for CXC School Based Assessments (SBA) http://www.cxc.org/SiteAssets/MANUALS/SBA_Manual_2012.pdf

of the main national project. The model to be adopted within the IWEco Project will be a replication of the experiences of the GEF-SGP in community empowerment and livelihoods enhancement in other parts of the world.

The **Private Sector** at both regional and national levels will expand visibility and help build relevance of project interventions at both regional and national levels (under Component 1) in mainstreaming environmental management into business investments. These private sector interests will include stakeholders in the hospitality and beverage and other manufacturing sectors (heavy water users). Investments in sustainable production and consumption and 'greening' industry within the scope of IWEco thematic areas of pollution control, land and water resources management and biodiversity conservation presents an opportunity to exchange ideas and replicate good practices (relevant to Components 3 and 4). Private sector partners will also assist the project through sponsorship, with roll-out of public awareness 'blitz' programmes, drawing on conventional and innovative social marketing concepts and approaches, using the outputs generated by the project (in support of Component 4). Some partnerships have been explored with a few regional and international companies during project design (included in narrative below), but these are to be formalized during project inception and project roll-out.

The **local communities** are the front-line beneficiaries of the interventions that are to be implemented under the project. These communities will include fisherfolk 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 IWEco project will help foster economic opportunities for beneficiary communities at the local project level. Engagement of the mainstream commercial private sector interests in a supportive role to small-scale community based co-management arrangements will be supported.

B2. 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/NPIF) or adaptation benefits (LDCF/SCCF). As a background information, read Mainstreaming Gender at the GEF.":

The proposed project will have various socio-economic benefits for local communities. Coastal reforestation and prevention of habitat destruction (such as mangroves) will be crucial for ecosystem-based adaptive strategies that reduce vulnerability of human coastal communities to climate change. Halting the decline of coastal ecosystems would also secure and generate economic revenue, food security and improve livelihoods in the coastal zone. It would also provide major economic and development opportunities for coastal communities around the region. Specifically, project activities would facilitate the possible increased investment in Caribbean SIDS, which naturally become more attractive, with improved environmental resource management regimes and improved access to ecosystem services that include clean waters, productive reefs and agricultural lands. This will lead to the injection of revenue into these economies, while protecting valuable ecosystem services that are useful for long-term sustainable development. Land degradation abatement and sustainable forest management and protection of biodiversity resources will not only serve to maintain agricultural and forest produce-related enterprises but will open new opportunities that may diversify traditional local economies. Local communities, private enterprises, special interest and women's groups will be involved in the designing and implementation of national interventions

to expand equitability in benefit sharing and long-term sustainability. Regionally, this project will 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 national socio-economic development plans.

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

B3. Explain how cost-effectiveness is reflected in the project design:

In the context of project design, cost-effectiveness is realized where the cheapest way, among competing alternatives, of achieving a stated objective is realized. In the case of the national project interventions under Component 1, at project inception detailed feasibility evaluations will be undertaken on the proposals. This will provide an opportunity to evaluate the various alternatives in terms of applicability of the general implementation options proposed during the overall project design phase. The exercise will serve as a validation with close participation of stakeholders that will assist with the fine-tuning of the national project implementation plan in evaluating of the alternatives and selection of the most suitable cost-effective option. The participatory process will build local partnerships in gaining access to most appropriate technical guidance and facilitate the establishment of a procurements process of goods and services under the detailed work plan that will seek to maximize cost effectiveness. The inherent design of the IWEco Project is based on the premise that it will build on demonstrated successes of the predecessor GEF-IWCAM project and other initiatives in the Caribbean including experiences from the Pacific SIDS IWRM Project. Key support to the technical evaluation process will be the Research and Governance Partnerships where constituent agencies will provide expertise based on technical competencies.

The project will employ transparent methods for procurements of goods and services through tender procedures that will evaluate and select service providers based on verifiable reliability and delivery within allocated budgets. This process will be put in place for the national projects through the local project management mechanisms, based on national procurements rules and procedures within the national focal point (national executing) agency. The same principle will apply at the regional project coordinating level where partnership agreements and service contracts will be administered in accordance with Implementing Agency protocols. Key to maintaining cost effectiveness will be the crafting of terms of reference for consultants and other service providers so that objectives and outputs will be clear and unambiguous. The national project steering committees will oversee the efficient utilization of GEF resources through evaluation of the performance of the National Project Management Units and ensuring that challenges and bottlenecks are be removed. This process will be further supported through the regional Project Coordination Unit that will provide technical backstopping and guidance to the national execution mechanisms.

The effectiveness of the GEF investment will be maximized by ensuring significant attention in paid to raising awareness across all relevant stakeholders. Innovative approaches will be applied in use of social and media marketing tools employing appropriate expertise and modes of delivery. At project inception a comprehensive public awareness and public education programme will be detailed that sets out a harmonized framework that will be emulated at the country level. The PA/PE Partnership will play a critical role in setting the terms of reference for the strategy and direct engagement through the course of the project. With sensitized decision makers, practitioners and the general public the chances for uptake and replication is enhanced. The sustainability of investments is also significantly influenced by the degree to which effective

policy and regulatory mechanisms meet intended objectives. While much work has been done in most of the countries contributed by a range of national and regional initiatives, there remains gasps in the enabling environment frameworks that the IWEco Project will address to facilitate uptake and replication post-project.

The project evaluation process will also contribute to cost-effectiveness of the investment. Annual progress reviews will be carried out though the project steering committee supported through the regional technical advisory group to ensure that resources are utilized efficiently but also recommend corrective actions where challenges may arise.

B. BUDGETED M&E PLAN

The project will follow UNEP standard monitoring, reporting and evaluation processes and procedures. Substantive and financial project reporting requirements are summarized in this document. Reporting requirements and templates are an integral part of the UNEP legal instruments to be signed by the executing agencies and UNEP.

The project M&E plan is consistent with the GEF Monitoring and Evaluation policy. The Project Results Framework presented in Appendix 4 of the ProDoc includes Specific, Measurable, Achievable, Relevant and Time-bound (SMART) for each expected outcome as well as mid-term and end-of-project targets. These indicators, along with the key deliverables and benchmarks included in Appendix 6 will be the main tools for assessing project implementation progress and whether project results are being achieved. The means of verification and the costs associated with obtaining the information to track the indicators are summarized in Sections 4 and 5 of this appendix. Other M&E related costs are also presented in this Costed M&E Plan and are fully integrated in the overall project budget (see summary budget in section 7 below).

As a result of the inception phase, a detailed M&E plan will be presented to the first meeting of the Project Steering Committee (PSC) to ensure project stakeholders understand their roles and responsibilities vis-à-vis project monitoring and evaluation. The PSC will be responsible for proposing to UNEP management any necessary amendments to the M&E plan during project implementation. Indicators and their means of verification may also be fine-tuned by the PSC. Day-to-day project monitoring is the responsibility of the PCU but other project partners will have responsibilities to collect specific information to track the indicators. It is the responsibility of the Regional Project Coordinator (RPC) to inform UNEP of any delays or difficulties faced during implementation so that the appropriate support or corrective measures can be adopted in a timely fashion.

The Project Steering Committee (PSC) will receive periodic reports on progress and will make recommendations to UNEP concerning the need to revise any aspects of the Results Framework or the M&E plan. Project oversight to ensure that the project meets UNEP and GEF policies and procedures is the responsibility to the Task Manager. The Task Manager will also review the quality of draft project outputs, provide feedback to the project partners, and establish peer review procedures to ensure adequate quality of scientific and technical outputs and publications.

Project supervision will take an adaptive management approach. The Regional Project Coordinator (RPC) and the Task Manager will develop a detailed project supervision plan at the inception of the project that will be communicated to the project partners during the first meeting of the PSC. With the support of the UNEP Fund Management Officer backstopping this project, the Regional Project Coordinator will also be responsible for initial screening of the financial and administrative reports from the core partners prior to their submission to the Finance and Management Divisions of the United Nations Office at Nairobi. Progress vis-à-vis the delivery of agreed project outputs will be assessed by the PSC at least annually. Project risks and assumptions will be regularly reviewed both by project partners and the PCU on behalf of UNEP. Risk assessment and rating is an integral part of the annual Project Implementation Review (PIR), preparation of which will be the responsibility of the Regional Project Coordinator. The quality of project monitoring and evaluation will also be reviewed and rated as part of the PIR and the PSC shall clear the PIR prior to its final submission. Key financial parameters will be monitored quarterly to ensure cost-effective use of financial resources.

A Mid-term Review (MTR) or Mid-term Evaluation (MTE) will be organized by the UNEP Evaluation Office or the Task Manager in consultation with the Regional Project Coordinator and the outcomes reported to the Project Steering Committee. An independent terminal evaluation will take place at the end of project implementation and will be managed by the Evaluation Office of UNEP. A review of the quality of the evaluation report will be done by the Evaluation Office and submitted along with the report to the GEF Evaluation Office no later than 6 months after the completion of the evaluation. The standard terms of reference for the terminal evaluation are found in Annex A. These will be further adjusted to the special needs of the project.

The GEF tracking tools are attached as Appendix 14 though to 30 & 43/44 of the ProDoc. These will be updated at mid-term and at the end of the project and will be made available to the GEF Secretariat along with the project PIR report. The mid-term review/evaluation and terminal evaluation will verify the information of the tracking tool

Indicative Monitoring and Evaluation activity list, responsible parties and corresponding budget

Type of M&E activity	Responsible Parties	GEF Budget US$	Time frame
Monitoring	▪		
Project Steering Committee Meetings and Inception workshop	▪ Regional Project Coordinator (PCU) ▪ UNEP Task Manager ▪ UNDP RTA ▪ CARPHA ▪ UNEP CAR/RCU ▪ Component Coordination Unit	1st PSC Meeting will be convened as an inception workshop. USD 110,000 (built in Comp. 5)	Held within first four months of project start up.
Networking and management of partnership agreements and in-country support	▪ Regional Project Coordinator (PCU) ▪ UNEP Task Manager ▪ UNDP RTA ▪ CARPHA ▪ UNEP CAR/RCU ▪ Component Coordination Unit	USD 36,000 for partner agency networking and communication USD 25,000 preparation and processing/management of contracts and agreements USD 129,000 to support travel to countries (all built into Comp. 5)	Over course of project
Meetings of the RTAG	▪ Regional Project Coordinator (PCU) ▪ UNEP Task Manager ▪ UNDP RTA ▪ CARPHA ▪ UNEP CAR/RCU	The 1st RTAG Meeting will be in conjunction with the first PSC Meeting as an Inception workshop. `Other RTAG meetings will be held once/year USD 210,475 (built in Comp. 5)	Held within first four months of project start up; at least one meeting per annum
Inception Report and Project Supervision Plan	▪ Regional Project Coordinator (PCU) ▪ UNEP Task Manager ▪ UNDP RTA ▪ CARPHA ▪ UNEP CAR/RCU	None*	Immediately following inception workshop
APR and PIR Lessons Learned	▪ Regional Project Coordinator (PCU) ▪ UNEP Task Manager ▪ CARPHA ▪ UNEP CAR/RCU	USD 25,000	Annually
Terminal Report	▪ Project team (PCU)* ▪ UNEP Task Manager ▪ CARPHA ▪ UNEP CAR/RCU ▪ Component Coordination Units ▪ External Consultant*	None*	At least one month before the end of the project
Evaluation	▪		
Mid-Term Review	▪ UNEP EOU/UNDP EO ▪ Regional Project Coordinator (PCU) ▪ UNEP Task Manager ▪ UNDP RTA ▪ CARPHA ▪ Regional Coordination Units	USD 50,000 GEF resources in Component 6 and USD 52,100 as co-financing from CAR/RCU and CARPHA	Halfway through project cycle – at around 30 months.

Type of M&E activity	Responsible Parties	GEF Budget US$	Time frame
	▪ Participating Institutions and stakeholders ▪ External consultant		
Final External Evaluation	▪ UNEP EOU/UNDP EO PO ▪ Regional Project Coordinator (PCU) ▪ UNEP Task Manager ▪ CARPHA ▪ Regional Coordinating Units ▪ Participating Institutions and stakeholders ▪ External Consultants (i.e. evaluation team)	USD 100,000 GEF resources in Component 6 and USD 104,197 as co-financing from CAR/RCU and CARPHA	At the end of project implementation
Audit	▪ UNEP Task Manager ▪ Regional Project Coordinator (PCU) * ▪ External Auditor	None *	Yearly
TOTAL indicative COST		**USD 685,473 in GEF resources** (USD 535,473 from Comp 5 and USD 150,000 from Comp 6)	

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).

NAME	POSITION	MINISTRY	DATE *(MM/dd/yyyy)*
Leonie Barnaby	GEF Operational Focal Point	Ministry of Water, Land, Environment and Climate Change - **Jamaica**	20 February 2012
Patricia Abreu Fernandez	GEF Operational Focal Point	Ministry of Environment and Natural Resources – **Dominican Republic**	22 February 2011
Enrique Moret Hernandez	GEF Political and Operational Focal Point	Ministry of Science Technology and Environment - **Cuba**	16 February 2012
Diann Black-Layne	GEF Operational Focal Point	Environment Division, Ministry of Agriculture, Lands, Housing and Environment – **Antigua and Barbuda**	19 April 2012
Edmund Jackson and Shirla Francis	Director, Environmental Management Department Permanent Secretary	Ministry of Health, Wellness and the Environment - **St Vincent and the Grenadines**	29 February 2012
Lavern Queely	Director Economic Affairs & PSPI and GEF Operational Focal Point	Ministry of Sustainable Development – **St Kitts and Nevis**	15 February 2012; ***NOTE:*** *revised LoE dated* 06 May 2014
Caroline Eugene	GEF Focal Point	Ministry of Sustainable Development, Energy, Science and Technology – **St Lucia**	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 - **Grenada**	08 March 2012
Gayle Francis Vaughan	GEF Operational Focal Point and Permanent Secretary	Ministry of Environment and Drainage - **Barbados**	27 March 2012
Dr Joth Singh	GEF Operational Focal Point and Managing Director and CEO	Environmental Management Authority, **Trinidad and Tobago**	04 May 2012

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF/LDCF/SCCF/NPIF policies and procedures and meets the GEF/LDCF/SCCF/NPIF criteria for CEO endorsement/approval of project.

Agency Coordinator, Agency Name	Signature	Date *(Month, day, year)*	Project Contact Person	Telephone	Email Address
Brennan Vandyke, Director, GEF Coordination Office, UNEP		December 16, 2014	Isabelle Van der Beck	+1-202-974-1314	Isabelle.vanderbeck@unep.org
Adriana Dinu UNDP GEF Coordinator		December 16, 2014	Jose Troya	+ (507) 302-4636	jose.troya@undp.org

ANNEX A: PROJECT RESULTS FRAMEWORK

(**Note**: For Component 1, which refers to the national sub-projects, only the primary key indicators, mid-term and end of project targets are listed in this 'amalgamated' logframe that collectively represents the 8 national sub-projects. Refer to the national sub-projects for further detail)

Project Goal: to enhance the sustainable flow of ecosystem services and their contribution to sustainable socio-economic development in the Caribbean through the application of appropriate solutions for the improved integrated management of water, land and biological resources					
	Key Indicators	**Baseline**	**Key Mid-term & project end targets**	**Sources of verification**	**Risks and Assumptions**
Objective: to contribute to the preservation of Caribbean ecosystems that are of global significance and the sustainability of livelihoods through the application of existing proven technologies and approaches that are appropriate for small island developing states through improved fresh and coastal water resources management, sustainable land management and sustainable forest management that also seek to enhance resilience of socio-ecological systems to the impacts of climate change.	• Suite of installed innovative solutions for improved water, land and biodiversity resources management • Installed capacity to measure change in environmental and related socio-economic status indicators • Mainstreamed policies and upgraded regulatory and fiscal incentive instruments for sustainable resources management • Trained stakeholders with built capacity	Fragmented and marginally effective interventions in addressing negative socio-economic and ecosystem impacts associated with water, land and biodiversity degradation due to relatively weak institutional and regulatory environments.	Effective, cost-effective on-ground technical and policy solutions that are widely disseminated through knowledge networks and replicated on-ground in Caribbean SIDS and global SIDS by end of project	Project reports; websites and public awareness resources; scientific publications; country state of environment reports; convention/treaty/MEA agreements	Risks: Occurrence of catastrophic natural events that impact country implementation; changes in socio-economic stability at the country or regional level that results in policy shifts and commitments Assumptions: Broad-based stakeholder buy-in and willingness of public and private sector to participate in building success in replication of solutions.
Component 1 Objective: To develop and foster the implementation of targeted Innovative, climate-change resilient approaches to Sustainable Land Management (SLM), Integrated Water Resources Management (IWRM) (including Water Use Efficiency (WUE)), Integrated Coastal Zone management (ICZM) and enhanced management and maintenance of ecosystem services *(refer to individual country project documents in Appendices 32 to 39 of the UNEP Project Document for further detail)*					
Component 1 Outcomes	Indicators	Baseline	Mid-term & project end targets	Sources of verification	Risks and Assumptions
Outcome C1.1. Verifiable, evidence-based stress reduction at project sites through appropriate sustainable water, land and ecosystems	• Number on investments in improved water, wastewater land and ecosystems management in 8 countries • Area of landscape under	• Methods and techniques available from experiences of the GEF-IWCAM Project • Need for continued up-scaling and replication • Deficiencies in adapting	• Total of at least 12 'primary' innovative investments in improved water, wastewater land and ecosystems management in 8 countries • At least 2,730 hectares of forest	• Project reports • Scientific and technical reports • Internal agency reports such as from respective country management	Risks: (i) systems and frameworks for execution of activities are established by the project are not

Project Goal: to enhance the sustainable flow of ecosystem services and their contribution to sustainable socio-economic development in the Caribbean through the application of appropriate solutions for the improved integrated management of water, land and biological resources					
	Key Indicators	**Baseline**	**Key Mid-term & project end targets**	**Sources of verification**	**Risks and Assumptions**
management interventions that account for climate change.	active improved management (hectares) • Improved species richness and diversity (species counts) • Improved fresh and coastal water quality (pollution loads) • Reduced risk to human health through improved access to water (number and type of disease reports) • Expansion in the number of methods and approaches replicated at national, regional level and among SIDS globally	approaches and methods from the global level to Caribbean SIDS • Degradation of water, land and ecosystems resources continue with significant adverse socio-economic consequences • Loss of species richness and diversity • Human health and security at risk from poor environmental quality	area including riparian zones, wetlands, habitats, under improved management practices through stress-reduction on-ground investments; • At least 46,000 hectares of forested landscapes within wider areas under in-situ conservation management regimes supported by project interventions by project end; • At least 10% improvement in selected indicator specie(s) abundance over the baseline by end of project; • At least 20% improvement in overall water quality (key parameters of the LBS Protocol) over the baseline from targeted areas by project end; • Best practices generated and used as basis for learning and replication.	unit(s) • National reporting to conventions and other international and regional frameworks • Media reports • Stakeholder feedback	commensurate with national level capabilities needed (project may potentially burdened agencies at national level where multiple reporting frameworks are required from various projects); (ii) monitoring and other systems set up by the project are not maintained as a result of low resource commitment, diminished investment; (iii) policy stance/decisions that will not allow for necessary exchange of information between agencies, sectors etc. (iv) changes in implementation arrangements or priorities at national level undermine gains made by the project; (v) stakeholders not directly engaged or benefitting from the project may perceive inadequacies in project activities and reduce likelihood of sustaining them (vi) occurrence of major socio-economic or environmental
OUTPUT 1.1.a. Watershed protection and restoration measures **Applicable to:** St Kitts & Nevis Saint Lucia St Vincent & the Grenadines Trinidad & Tobago	• Number investments in upper watershed protection and restoration, including slope stabilization • Land /vegetative cover in upper watershed (hectares) LD5a IW4 SFM 1.2 • Estimated soil loss/sediment load (t/ha/yr) • Biomass accumulation (Kg C/ha/year)	• National sub-projects have been designed based on expert knowledge and in some cases baseline information to match technology options may not be available. • Acute land degradation in terms of direct pollution, soil loss associated with improper land management leads to impairment of sensitive ecosystem functioning, loss of agricultural productivity; • Decrease in revenue earnings	<u>Mid-term targets</u> • Commencement of 4 investments in watershed protection in 4 countries ○ Degraded quarry sites in Nevis ○ Upper Soufriere watershed – St. Lucia ○ Georgetown watershed, St Vincent ○ Valencia area, Trinidad • At least 50 ha total area of restored habitat and/or degraded lands over all sites • At least an average of 10% increase	• Reports of national sub-projects; • Land degradation assessment reports; • water quality test reports; • media releases; • scientific reports/publications	

Project Goal: to enhance the sustainable flow of ecosystem services and their contribution to sustainable socio-economic development in the Caribbean through the application of appropriate solutions for the improved integrated management of water, land and biological resources					
	Key Indicators	**Baseline**	**Key Mid-term & project end targets**	**Sources of verification**	**Risks and Assumptions**
		from crops as a result of declining soil productivities; • Exacerbated flood risk in lower watershed reaches and increase in flood risk reduction measures (de-silting); • low knowledge transfer of alternative solutions for slope stabilization • lack of engagement and indifference of practitioners	in the accumulated biomass (Kg C/ha/year) across all sites • Reduction in sediment loading across all sites by at approximately 10% over baseline (t/ha/yr) <u>End of project targets</u> • At least 240 ha of restored habitat and/or degraded lands over all sites • Reduction in sediment loading across all sites by approximately 30% over baseline (t/ha/yr) • At least and average of 30% increase in the accumulated biomass (Kg C/ha/year)		challenges as a result of natural or other events in one or more beneficiary countries that may compromise overall implementation (vii) partners and donors fail to actively promote replication through other project and program avenues Assumptions: (i) governments and partners provide commitment and investment needed to execute project activities; (ii) stakeholders recognize and value benefits of monitoring systems and contribute towards maintenance of such systems; (iii) effective communication of results/information from monitoring systems leads to meaningful change in practice; (iv) Sufficient buy-in from agencies/practitioners facilitates collection of relevant data (v) sufficient baseline information exists to
OUTPUT 1.1.b. Riparian restoration solutions, particularly upstream of surface water sources and recharge zone Applicable to: Dominican Republic St Kitts & Nevis Saint Lucia St Vincent & the Grenadines	• Number investments in riparian restoration • Length of riparian zone rehabilitated (km) LD5a IW4 SFM 1.2 • Areal extent of degraded area rehabilitated (hectares) LD5a IW4 SFM 1.2 • Estimated soil loss/sediment load (t/ha/yr) • Biomass accumulation (Kg C/ha/year)	• National sub-projects have been designed based on expert knowledge and in some cases baseline information to match technology options may not be available. • Removal of riparian vegetation; • acute riverbank erosion; • negative impacts on terrestrial and aquatic biodiversity - loss of species, change in species composition; • aggravated erosion and sedimentation leading to heightened flood risk; • degradation of ambient water quality; • limited appreciation and understanding of stream hydrology and dynamic processes; • public apathy/limited awareness;	<u>Mid-term targets</u> • At least 4 investments in riverbank soil/slope stabilization initiated in 3 countries ○ Higuamo watershed, Dom. Rep. ○ College Ghaut watershed, St Kitts ○ Soufriere watershed, St Lucia ○ Georgetown watershed, St Vincent • At least 2 km of riparian zone restored area over all sites • Reduction in sediment loading across all sites by approximately 10% over baseline (t/ha/yr) <u>End of project targets</u> • Total of at least 5 km of degraded riparian lands rehabilitated over all sites • Reduction in sediment loading across all sites by approximately 15% over baseline (t/ha/yr)	• Feasibility Analysis Reports of national sub-projects; • Land degradation assessment reports; • water quality test reports; • riparian species richness and diversity assessments • media releases; • scientific reports/publications	

Project Goal: to enhance the sustainable flow of ecosystem services and their contribution to sustainable socio-economic development in the Caribbean through the application of appropriate solutions for the improved integrated management of water, land and biological resources					
	Key Indicators	**Baseline**	**Key Mid-term & project end targets**	**Sources of verification**	**Risks and Assumptions**
		• sedimentation of near shore marine ecosystems	• Average increase in biomass accumulation by at least 20% over baseline		allow for determination of change of status on key parameters (human health, biodiversity) (vi) regional and international partners are engaged in project design and perceive mutual benefits (vii) cohesion amongst stakeholders in approach for project implementation (viii) countries actively use and promote best practices through regulatory avenues and practice codes at the national level; (ix) stakeholders are involved in sharing and advancing improved practices (x) Local project management team will assist in advancing the use of the indicators framework through validation via project implementation (xi) accurate assessment possible for the extent of landscapes under treatment within project; (xii) ability to validate data (such as estimated volumes of runoff)

OUTPUT 1.1.c. Coastal forest and estuarine (mangrove) armoring measures especially in high risk areas for storm inundation
 	
Applicable to:
Dominican Republic
Jamaica
St Kitts & Nevis
	• Number investments in coastal area ecosystem restoration
	• Area of mangrove/wetlands restored/rehabilitated IW4
	  ○ Protected area in project area BDII2
	• Change in biomass accumulation (Kg C/ha/year) LD5a
		• national sub-projects have been designed based on expert knowledge and in some cases baseline information to match technology options may not be available
		• Loss/degradation of mangrove and littoral forests;
		• increased coastal vulnerability to storm inundation and damaging storm surge;
		• loss/impaired ecosystems;
		• competing land use pressure;
		• wetlands used for illegal dumping of solid and liquid waste
			Mid-term targets
			• 3 investments initiated in target wetland/coastal areas
			  ○ Higuamo watershed estuarine zone, Dom. Rep.
			  ○ Negril Environmental Protected Area, Jamaica
			  ○ Beach and coastal areas, Nevis
			• At least 200 ha area of planting and bioengineering measures to stabilize and armour coastal environments
			End of project targets
			• Total of 3 investments in target wetland / coastal areas
			• Total of at least 500 ha restored
			• Average increase in biomass accumulation by at least 15% over baseline
			• Increase in select indicator specie(s) abundance by at least 10% in ecologically sensitive areas
				• Feasibility Analysis Reports of national sub-projects;
				• Criteria and selection process for identification of target areas;
				• Shoreline profile assessments;
				• Water quality test results;
				• Species richness and diversity assessments;
				• Scientific reports/publications
				• Media releases	

Output C1.1.d. Effluent management (water reuse, recycling) and pollution reduction measures for commercial/industrial entities, agricultural and settlement areas
 	
Applicable to:
	• Volume of wastewater and oily wastes diverted (m3/yr) IW14
	• Pollutant loads (N, P & BOD (kg/yr) IW1
		• Negative public perceptions over used of recycled water;
		• Limited knowledge on the subject;
		• Use of high-value potable water for non-potable uses that adds costs to operations;
		• Limited policy emphasis to encourage investment
		• Industrial/commercial draw-
			Mid-term targets
			• At least 2 investments in wastewater management initiated in 2 countries
			  ○ McKinnons Wastewater treatment, Antigua
			  ○ College Ghaut/upper Basseterre, St Kitts
			• At least 70,000 m^3/yr wastewater diverted (equivalent to at least 10
				• Certificates of completion;
				• water quality test results;
				• assessments/interviews;
				• ambient water quality test results;
				• beneficiary assessments/interviews;
				• scientific reports/publications
				• hand-over agreements;	

Project Goal: to enhance the sustainable flow of ecosystem services and their contribution to sustainable socio-economic development in the Caribbean through the application of appropriate solutions for the improved integrated management of water, land and biological resources					
	Key Indicators	**Baseline**	**Key Mid-term & project end targets**	**Sources of verification**	**Risks and Assumptions**
Antigua & Barbuda St Kitts & Nevis		downs in potable supply during dry months creates overall supply challenges, results in business closures or reduced production outputs • limited up scaling of technologies in the region; • lack of resources to invest in municipal centralize systems, and lack of demonstrable, cost-effective technologies • significant land-based pollution from clustered communities with ineffective or non-existent waste water control systems contributing to negative human and ecosystems health outcomes	kg/yr BOD; 350 kg/yr N; 70 kg/yr P diverted) <u>End of project targets</u> • At least 160,000 m^3/yr wastewater diverted; (equivalent at least 24 kg/yr BOD; 700 kg/yr N; 140 kg/yr P diverted)	• press releases	through scientific research
OUTPUT 1.1.e. Biodiversity enhancement measures for increasing native and endemic population species abundance and diversity Applicable to: Cuba Dominican Republic Jamaica	• Species richness and diversity studies – species count • Area planted/restored (hectares) • Invasive species reduction (ha, #s of targeted area) IW15, BDVI	• Species under threat from declining habitat quality and • ecosystem degradation; • Some level of baseline activity to address threats to biodiversity however is being done in an institutionally fragmented manner, leaving many critical habitats at high risk of further degradation • Critical habitats inadequate for the conservation of targeted species; • Fragmentation of habitats continue to threaten the viability and sustainability of targeted species	<u>Mid-term targets</u> • At least 3 investments in ecosystem restoration measures initiated • At least 580 hectares restored ○ Rio Guanabo watershed; Rio Agabama watershed; Rio Arimao watershed; Rio San Juan watershed, Cuba ○ Higuamo watershed estuarine zone, Dom. Rep. ○ Negril Environmental Protected Area, Jamaica • Select indicator specie(s) abundance within rehabilitated areas improve by 5% over baseline • Decrease by 10% the number of AIS across targeted sites to enhance native species population <u>End of project targets</u>	• Biodiversity studies, analyses reports • Population census track/transect data • Species richness and diversity assessments; • Scientific studies/reports	

Project Goal: to enhance the sustainable flow of ecosystem services and their contribution to sustainable socio-economic development in the Caribbean through the application of appropriate solutions for the improved integrated management of water, land and biological resources					
	Key Indicators	**Baseline**	**Key Mid-term & project end targets**	**Sources of verification**	**Risks and Assumptions**
			• At least a total of 1,940 hectares restored • Improvement in population indices by at least 30-40 % over baseline condition • 5 investments in restoration measures completed • Decrease by 30% the number of AIS across targeted sites to enhance native species population • Select indicator specie(s) abundance within rehabilitated areas improve by 15% over baseline		

Project Goal: to enhance the sustainable flow of ecosystem services and their contribution to sustainable socio-economic development in the Caribbean through the application of appropriate solutions for the improved integrated management of water, land and biological resources					
	Key Indicators	**Baseline**	**Key Mid-term & project end targets**	**Sources of verification**	**Risks and Assumptions**
Outcome C1.2. Enhanced livelihood opportunities and socio-economic co-benefits for targeted communities from improved ecosystem services functioning.	• Expanded number of small-scale community-based initiatives that bring socio-economic and livelihoods benefits from land, water and ecosystems management • Increased participation of community beneficiaries gaining economic benefits from integrated natural resource management disaggregated by gender and socio-economic status (clear evidence of gender-equity in access to benefits) • Increased average annual income to community beneficiaries • Improved water and sanitation security at local community level	• Community-based investments in natural resources management remains relatively low -keyed and few in number in consideration of the potential that exists; • limited capacity within community groups to tap into resources • Limited understanding of how investments in land, water and ecosystems resources management contributes to improved economies and sustainable livelihoods • Relatively low engagement of community groups and CSOs in active natural resources management	• Small-scale investments associated with the national projects supported by the GEF-SGP over project duration (to be defined at inception and during implementation) • At least 20 % increase in annual income per capita from community-based initiatives in crop and livestock production, and from forest and tree products over the project duration • At least 20% fewer reports of water-related illnesses Health indices of target communities • At least 10 investments in small-scale water and sanitation (effluent control) across at least 3 countries	• Agency-community MOUs and/or co-management arrangements; • project documentation; • community surveys (including beneficiary economic analysis) • SGP implementation reviews; • National grantee reporting; • National planning and development reporting; •	Risks: (i) senior policy makers and other stakeholders do not regard investment in improved environmental management within national development priorities; (ii) private sector are not sufficiently integrated, perceive limited gains and adopt a 'business-as-usual' approach; (iii) challenges related to capacity limitations within targeted communities; (iv) low level of buy-in amongst targeted interest groups within communities; (v) lack of support by local counterpart state agencies (vi) insufficient buy-in at the national level may cause delays in start-up (vii) Major changes in project start-up conditions from project conceptualization period (viii) insufficient support by local agencies post-project; (ix) Unwillingness of community stakeholders
Output C1.2.a. Augmented water supply systems employing rainwater harvesting within critically water-stressed communities Applicable to: Dominican Republic	• Number rainwater harvesting systems installed • Water supply reliability (number of incidences of insufficient water availability, by community, year) •	• Communities, particularly (lower-income) faced with erratic water supply in dry months with heightened risk of compromised health and sanitation; • Climate changed-induced impacts on water resource availability will lever more stress on disadvantaged communities; • Coping strategies to deal with water insecurity associated with drought and storm/flood events	<u>Mid-term targets</u> • At least 10 rainwater harvesting (RWH) installations at communal level that serve multiple beneficiaries and are actively supplying water • Water supply reliability in target communities increased over baseline levels by at least 50% <u>End of project targets</u> • At least 40 rainwater harvesting (RWH) installations at communal level	• Certificates of completion; • Hand-over agreements; • Press/media releases; • Water availability and water quality test results (stored water); • Health clinic/district reports; • Beneficiary assessments/interviews; • Scientific reports/publications	

Project Goal: to enhance the sustainable flow of ecosystem services and their contribution to sustainable socio-economic development in the Caribbean through the application of appropriate solutions for the improved integrated management of water, land and biological resources					
	Key Indicators	**Baseline**	**Key Mid-term & project end targets**	**Sources of verification**	**Risks and Assumptions**
		is weak in such communities; • Limited knowledge on safe applications of RWH	• Water supply reliability in target communities increased over baseline levels by at least 50% • Qualitative evidence on use of harvested rainwater (number of uses and types, perception/quality of uses		to provide financial information; (x) occurrence of natural disasters that may cause significant disruption to businesses and/or implementation progress; (xi) unavailability of a financial specialist to undertake required evaluation (xii) sub-project actions may result in unintended adverse consequences within and outside the target area; (xiii) project in eventual implementation demonstrates non-viability for expansion or replication; (xiv) major change in socio-economic circumstance and/or political shift with changed priorities Assumptions: (i) governments integrate environmental considerations within mainstream planning in respect to contributions to improved health and livelihood attainment; (ii) the benefits of
Output C1.2.b. Upgraded water supply systems for delivery and greater access to safe water supply within critically water-stressed communities Applicable to: St Kitts & Nevis	• Number of water borne illness reports within target community • Number of households in target community with improved water and sanitation access	• Communities serviced by poor water supply systems face erratic water supply in dry months with heightened risk of compromised health and sanitation; • climate changed-induced impacts on water resource availability will lever more stress on disadvantaged communities; • coping strategies to deal with water insecurity associated with drought and storm/flood events is weak in such communities	<u>Mid-term targets</u> • Initiation of at least 1 small-scale communal intervention under GEF-SGP on enhancing water security and sanitation <u>End of project targets</u> • Small-scale water and sanitation intervention completed • 60% improvement of water quality samples meeting accepted quality standards • Increase by at least 40% in number of households with improved access to water and sanitation in target community • Reduction by at least 30% in reports in water-borne illness within target community	• certificates of completion; • hand-over agreements; • press releases; • water quality test results (stored water); • health clinic/district reports; • beneficiary assessments/interviews; • scientific reports/publications	

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	Key Indicators	**Baseline**	**Key Mid-term & project end targets**	**Sources of verification**	**Risks and Assumptions**
Output C1.5.c. Employment and revenue generation opportunities by communities and private sector associated with project activities (SGP) Applicable to: All countries	• Number of new communal enterprises • Estimated revenue from recycling, small scale farming enterprises, fishing (US$/yr) (disaggregated by gender and socio-economic status) • Estimated annual revenues from eco-touristic activity (US$/yr)	• Declining ecosystem productivity in near-shore fishing areas as a result of land-based degradation land and water with resultant declines in economic benefits to dependent communities • poorly documented impacts; • absence of data that makes linkages; • methodologies not mainstreamed at national reporting level • Threats to viability of tourism-based natural attractions on account of land and ecosystems degradation; • Linkages between water, land and ecosystem degradation and socio-economic impacts to tourism sector not well documented and reported; • absence of data to make linkages; • lack of mainstreamed assessment protocols	<u>Mid-term targets</u> • At least 8 small-scale community-based investments supported by the GEF SGP in all countries • On average at least 20% change in revenue generation for most directly engaged stakeholders in agriculture, forestry, near-shore fisheries and other livelihoods • On average at least 40% change in revenue for most directly engaged stakeholders in eco-tourism ○ *Dominican Republic* ○ *Jamaica* ○ *St Vincent & the Grenadines* <u>End of project targets</u> • 75% change on revenue generation for most directly engaged stakeholders in agriculture, forestry, near-shore fisheries and other livelihoods • 80% change in revenue for most directly engaged stakeholders in eco-tourism	• Records/financial statements from cooperatives; • tailored financial data capture tool	investments in environment is adequately reflected in national accounts and standard development indices; (iii) development partners continue to support investments in improved environmental management towards improved community welfare and economic livelihoods (iv) communities are motivated and perceive livelihood and other benefits; (v) lessons learnt and positive experiences are built on for replication (vi) Sufficient baseline data that allows ability to assess risk level to target communities in context of contributions from the project (vii) the country focal point agencies are adequately mobilized to engage in the assessment process; (viii) data to augment project design is relatively easily available (ix) availability of support/advisory services from local
Outcome 2.1. Strengthened national systems for monitoring of environmental status with respect to key international agreements.	• Strengthened indicators framework adopted and mainstreamed into socio-economic, planning and development and environmental status assessments; • State and non-state stakeholders demonstrate competency in application of indicators and data capture systems to enhance	• Indicators are not applied in mainstream decision making • low level of awareness amongst decision-makers of utility of environmental indicators • observation platforms and decision support systems (DSS) for monitoring are generally weak • Weak capacities in relevant state and non-state agencies for monitoring indicators	• technical personnel applying accepted methods and techniques in making resource assessments that support decision-making • Accurate, verified suite of data from project sites that support decision making for replication and up-scaling in all 8 countries	• Scientific reports • state of environment reports at national and regional levels • UN convention and other international and regional reporting outputs • Data observation platforms • training/capacity building programmes • project reports	

Project Goal: to enhance the sustainable flow of ecosystem services and their contribution to sustainable socio-economic development in the Caribbean through the application of appropriate solutions for the improved integrated management of water, land and biological resources					
	Key Indicators	**Baseline**	**Key Mid-term & project end targets**	**Sources of verification**	**Risks and Assumptions**
	decision making				business support agencies that focus on micro and small and medium enterprises (SMEs) (x) the project oversight technical committee (national inter-sectoral committee) functions to provide adequate guidance and foster national buy-in
Output C2 Strengthened national monitoring systems	• Monitoring protocol & instrumentation installed at target intervention sites • Accurate datasets (support project reporting)	• Structured baseline information generally unavailable and inadequate for assessing progress • Tracking of appropriate indicators is poor to non-existent; • assessments are very sporadic and limited time series • data and information tends not to be analyzed • limited capacity to utilize information • decision making is very often not based on scientific information	Mid-term targets • Monitoring protocols and instrumented systems installed at all 8 project sites • All relevant project personnel trained in operation and maintenance of the systems • Accurate datasets being generated End of project targets • Accurate datasets being generated	• Scientific reports • Project reports • Equipment maintenance and operation logs • Training resources	
Outcome 3.1. Strengthened national policy and legislation for the effective management of water, land and ecosystems resources that account for climate change and enhanced capacity	• Improved compliance based on strong and effective policy and legislative instruments • Demonstrated integration of water, land and ecosystems management in mainstream socio-economic development • Enhanced capacity amongst support organization and beneficiaries to build sustainability	• National socio-economic development do not adequately factor in environmental management policy • environmental policy is weakly articulated at both national and regional levels • out-of-date legislation and regulations • international and regional treaties not integrated into national law • incentive measures to accompany legislative provisions weak • agency and beneficiary capacities for implementation are relatively weak	• Policy and legislative reforms advanced and adopted • national development planning strategies and decision making frameworks broadening incorporation of elements of water, land and ecosystems resources management • cooperation amongst regional support agencies strengthened through establishment of joint cooperation agreements by end of the project.	• gazetted legislative amendments • new policy statements • reporting to UN conventions and other regional and international frameworks • published policy statements • publication and dissemination and access to information • regional cooperation frameworks in effect;	

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	Key Indicators	**Baseline**	**Key Mid-term & project end targets**	**Sources of verification**	**Risks and Assumptions**
Output C3: Strengthened national policy, legislation and enhanced capacity	• Ratified policies • bills passed into law • new regulations • Adopted Inter-agency agreements • Number of meetings of the national inter-sectoral committees • Number of training workshops • Number stakeholders trained	• Current policy and regulatory environment inadequate for implementation of integrated natural resource management • Institutional collaborative arrangements are weak • Challenges in information flow, inter-agency coordination and effective delegation of responsibilities amongst agencies • Limited capacity amongst stakeholders in required areas of technical competence • High turnover in professionals require continual training	Mid-term targets • Policy and regulatory reviews initiated in all 8 countries • Draft instruments generated • Stakeholder consultations held; inter-sectoral committee meetings held at least once every 6 months • Capacity-building programme designed and training initiated End of project targets • Draft policy and regulatory instruments adopted • Inter-agency agreements formalized • Stakeholder consultations held; inter-sectoral committee meetings held at least once every 6 months	• Gazetted notices on adopted regulations • Project reports • Stakeholder consultation proceedings • Training resources • Training workshop reports • Media releases	
Outcome 4.1. Improved engagement and information access for practitioners and other stakeholders through targeted knowledge sharing networks	• Enhanced stakeholder networking and knowledge sharing towards implementation of solutions across the Caribbean and other SIDS regions • Expanded, strengthened community of practices with shared experiences in successfully implementing solutions	• relative isolation of practitioners with limited opportunities for interactive experience-based learning • limited dissemination and access to resources to practitioners in appropriate formats • translation of expert and traditional knowledge to application at community level is limited	• Evidence of stakeholders applying knowledge, tools and methods generated by project • Technical support agencies providing enhanced support in sharing information to improve design making; • Strengthened linkages amongst practitioners in various fields "community of practices" across SIDS regions • Dissemination of information and lessons learned to a wider audience of stakeholders from both the public and private sectors.	• Project reports • Uptake of the range of publications and evidence of use by stakeholders • Media reports and articles • Evidence of replication of tools and methods in other parts of the country, within the Caribbean and at the global level	
Output C4: Knowledge products, tools and methods	• number of consultations with stakeholders • Number and types of public awareness products made	• Local communities and stakeholders require continual engagement to support improved natural resource	Mid-term targets • Suite of awareness-raising resources deigned and production initiated in all 8 countries	• Project reports • Suite of awareness-raising material and knowledge products	

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	Key Indicators	**Baseline**	**Key Mid-term & project end targets**	**Sources of verification**	**Risks and Assumptions**
	available • Web-based information exchange platform installed • Number of project stakeholders participating at conferences	management • High-level policy makers may not be as sensitized as needed to drive and effect change • Knowledge sharing platforms are typically weak • Documentation of best practices toward replication and up-scaling remains weak • Technical exchanges amongst practitioners tends to be limited due to financing constraints	• National web-based platforms for at least 2 countries • Technical exchanges initiated between each of the countries and other SIDS regions • Project lessons are transmitted to global knowledge networks <u>End of project targets</u> • Countries are represented by project personnel and associated stakeholders in at least 2 conferences • At least 1 successful technical exchange between each of the countries and other SIDS regions • Project lessons are transmitted to global knowledge networks	• Stakeholder consultation proceedings • Media releases	
Component 2 Objective: To strengthen the water, land and ecosystems resources Monitoring, and Indicators frameworks					
Component 2 Outcomes	Indicator	Baseline	Target	Sources of verification	Risks and Assumptions
Outcome 2.1. Strengthened national and regional systems for monitoring of environmental status with respect to key international agreements.	• Strengthened indicators framework adopted at regional level becoming mainstreamed and utilized in national socio-economic, planning and development and environmental status assessments; • State and non-state stakeholders demonstrate competency in application of indicators to enhance decision making	• GEF-IWCAM commenced process of strengthening and harmonizing an environmental indicators framework in the region; requires continued support and strengthening • Indicators are not applied in mainstream decision making • low level of awareness amongst decision-makers of utility of environmental indicators • observation platforms and decision support systems (DSS) for monitoring are generally weak • Weak capacities in relevant state and non-state agencies for	• Caribbean countries endorsed suite of indicators by end project • technical personnel applying accepted methods and techniques in making IWRM, SLM, BD and SFM assessments that support decision-making by end of project • community-based organizations, schools and other NGO groups are engaged in supportive natural resource assessments at the local community level by end of project	• state of environment reports at national and regional levels • UN convention and other international and regional reporting outputs • strengthened observation platforms • strengthened training/capacity building programmes • project reports	Risks: • indicators frameworks promoted by the GEF and donor community are difficult to integrate within national accounts due to capacity human resource and financial limitations • continued challenges in regional and international support agency coordination in harmonizing indicator reporting frameworks

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	Key Indicators	**Baseline**	**Key Mid-term & project end targets**	**Sources of verification**	**Risks and Assumptions**
		monitoring indicators			• capacity constraints in maintaining observation platforms and decision support platforms • ability to sustain capacity building efforts post-project Assumptions: • strong state support for establishing and mainstreaming monitoring and reporting frameworks on the basis of recognized benefits • continued support by regional and international support partners • governments, non-state organizations, private sector and community beneficiaries will remain committed to investment in capacity development
Output 2.1.1 Regional environmental indicators compendium	• National register/compendium of agreed indicators at national level IW13; IW16; SFM2.1 • suite of regionally accepted indicators IW13; IW16; SFM2.1 • complement of trained professionals LD3ii; SFM2.1	• GEF-IWCAM Project initiated a regional-level indicators framework but has not realized regional-level endorsement; further elaboration of this framework to include biodiversity, sustainable forest management needed • limited use of environmental indicators for national regulatory requirements • limited use of indicators in assessment of impacts of environmental degradation on productive sector outputs • limited integration of environmental indicators into national accounts • regional agencies advancing M&E based on indicators with relatively little attempts at harmonization within a regional framework.	Mid-term targets • Progress assessment (and recommendations) across region on mainstreaming indicators End of project targets • National reporting frameworks aligned to include environmental indicators in at least 4 countries • Harmonized ratified regional compendium of indicators	• Status/assessment reports by country • published register/compendium of compendium of indicators in national accounts • convention reporting instruments • project progress reports • training reports;	
Output 2.1.2 Scientific research to support monitoring at national projects	• Research protocol for the national projects • Research partnership agreements signed between partners and UNEP	• research procedure not defined for national sub-projects • modalities for engagement of the project research partners not determined	Mid-term targets • 8 research protocols for national sub-projects • Partnership agreements developed and effected for all collaborating agency partners • 8 country research protocols under implementation • At least 8 scientific publications prepared End of project targets • country project research protocols	• Research protocol for each national project • Signed partnership agreements • research publications • Project reports	

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	Key Indicators	**Baseline**	**Key Mid-term & project end targets**	**Sources of verification**	**Risks and Assumptions**
			implemented • Total of at least 20 scientific publications prepared		
Output 2.1.3. Strengthened field monitoring and assessment capabilities	• Installed monitoring systems IW13; IW16 SFM2.1; BD02-IAS-5 • Trained operators (professionals and communities) for systems LD3ii; SFM2.1	• monitoring systems for country projects not determined • capacity requirements to operate and maintain systems not known	Mid-term targets • Monitoring systems installed and functional providing data in all 8 countries • 8 training modules/packages prepared based on national needs • Training delivered to system operators within local collaborating agencies End of project targets • Data monitoring (sustainability) protocols post-project developed for 8 countries • Data outputs from monitoring systems met project reporting requirements	• Scientific research reports Project reports	
Output 2.1.4 Decision support system (DSS) tools	• Decision support systems/ tools IW13; IW16; SFM2.1; • trained professionals in use of systems LD3ii	• Limited capacities to assess environmental parameters • input data for DSS inadequate • application of DSS tools to support planning remains poorly developed • limited financial resource capacity to maintain DSS;	Mid-term targets • 8 needs assessments for each country • Training modules (regional level) developed • contribution to installation and operation of national information systems in at least 4 countries • DSS operational and project data integrated for at least 4 countries • training programmes for operators implemented in at least 4 countries End of project targets • DSS operational and project data integrated for all countries • training programmes for operators completed all countries • Continuity protocol for 8 countries for data integration into wider	• System assessment needs reports • system component procurement and installation • training modules and training reports	

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	Key Indicators	**Baseline**	**Key Mid-term & project end targets**	**Sources of verification**	**Risks and Assumptions**
			knowledge networks		
Component 3 Objective: To strengthen policy, legislative and institutional reforms and capacity building to support Sustainable Land Management (SLM), Integrating Water Resources Management (IWRM)/Water Use Efficiency (WUE) and ecosystem services management taking into consideration climate change resilience building.					
Component 3 Outcomes	Indicator	Baseline	Target	Sources of verification	Risks and Assumptions
Outcome 3.1. Strengthened policy and legislation for the effective management of water, land and ecosystems resources that account for climate change	• Improved compliance based on strong and effective policy and legislative instruments • Demonstrated integration of water, land and ecosystems management in mainstream socio-economic development	• National socio-economic development do not adequately factor in environmental management policy • environmental policy is weakly articulated at both national and regional levels • absence of regional-level environmental policy framework • out-of-date legislation • regulations not sufficiently developed to make laws effective • international and regional treaties not integrated into national law • limited awareness and buy-in from stakeholders • incentive measures to accompany legislative provisions weak • approaches are more command-and-control rather than participatory	• countries commence process to policy and legislative reforms by mid-project • national development planning strategies and decision making frameworks broadening incorporation of elements of water, land and ecosystems resources management by end of project • cooperation amongst regional support agencies strengthened through establishment of joint cooperation agreements by end of project	• gazetted legislative amendments • new policy statements • reporting to UN conventions and other regional and international frameworks • published policy statements • publication and dissemination and access to information • regional cooperation frameworks in effect;	Risks: • Weak overarching strategic development framework means extent of mainstreaming of IWRM, BD and other frameworks within may be limited and have diminished value • Very lengthy Investments in legislative reform as a result of review processes take a long time to go through parliamentary processes • Potential lack of willingness at political level where proposals may be regarded as either controversial or costly to implement • lack of broad-based stakeholder support
Output 3.1.1 New and/or revised national-level policies and regulations for water, land and ecosystems management	• Ratified policies IW5 LD3i;ii;iii BD02-V-6 SFM1.1 • bills passed into law, and/or amendments passed IW5 LD3i;ii;iii BD02-V-6 SFM1.1 new and/or strengthened regulations IW5 LD3i;ii;iii BD02-V-6 SFM1.1	• low accorded priority assigned hampers progress in legislative reforms • national action plans and other frameworks under regional and international treaties obligations not mainstreamed in local laws and regulations	<u>Mid-term targets</u> • Regional review of status of policy, legislative implementation across 10 countries (update from existing sources as available) • At least 4 countries have initiated processes for review/strengthening of existing legislative instruments	• status review and recommendations report • new/upgraded legislative drafts and regulations • gazetted publications • media releases • project reports	

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	Key Indicators	**Baseline**	**Key Mid-term & project end targets**	**Sources of verification**	**Risks and Assumptions**
		• low level of buy-in at political, private sector and civil society levels • Some level of policy and legislative reforms but rate of adoption and implementation is hampered by agency capacity limitations to drive processes	and/or development of new legislative instruments • At least 2 policy/regulatory instruments ratified in respective countries <u>End of project targets</u> • total of at least 6 relevant national policy/regulatory instruments ratified in respective countries		• Assumptions: • There is recognition of the importance of such strategic frameworks and there a high-level support to the process; • The project public awareness programme should provide the needed information to increase buy-in to policy and legal reforms
Output 3.1.2 New and/or upgraded national and regional-level plans and strategies for improved water, land and ecosystems management	• New and/or upgraded national strategic/action plans IW1; IW5 LD3i;ii;iii BD02-V-6 SFM1.1	• national planning processes at national level initiated in many countries but pace is slow due to low priority • level of awareness amongst stakeholders is relatively low • some regional frameworks, regional action plans are in process of formulation but yet to be completed	<u>Mid-term targets</u> • at least 4 countries have commenced the review and upgrade of relevant national plans • At least 2 relevant strategic action plans ratified in respective countries • 1 regional policy consultation and draft regional IWRM framework/action plan <u>End of project targets</u> • Total of at least 4 countries have ratified at highest national level strategic/action plans • Regional action framework for IWRM endorsed by Caribbean Heads of Government	• Published plans/strategies • Regional Water Framework • media releases • project reports	
Outcome 3.2. Strengthened capacity of national and regional institutions and other stakeholders for water, land, and ecosystems management that accounts for climate change	• Decision making improved through enhanced coordination amongst relevant national stakeholders • institutional response from national state and non-state agencies and regional agencies effective in addressing implementation of water, land and ecosystems management	• Poor decision outcomes from fragmented institutional responses • Limited engagement of stakeholders due to weakly constituted consultative processes on environmental management • agency effectiveness to implement water, land and ecosystems management compromised by limited human resource and financial capacity	• decision making at policy level supported by improved stakeholder engagement • improved level of technical support from national agencies to stakeholder interests for environmental management • improved planning and coordination emerging between regional support organizations • stakeholders demonstrating empowerment through enhanced	• meeting records and inputs to policy processes from intersectional committee meetings • regional inter-agency cooperation frameworks in effect	Risks: • National inter-sectorial mechanisms may be overburdened with many other competing interests with resulting stakeholder fatigue • these mechanisms remain informal so inputs are not directed through to

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	Key Indicators	**Baseline**	**Key Mid-term & project end targets**	**Sources of verification**	**Risks and Assumptions**
		• low awareness at policy making level to gain support for investment in institutional strengthening • poor coordination amongst regional agencies in harmonizing approaches and advisory support to countries	capacity through provision of skills and information		formal developmental policy • may be some level of stakeholder fatigue given other competing training programmes Assumptions: • There is willingness to build on either existing frameworks or develop new ones with due focus directed to facilitate integrated project implementation • there will be high-level support to the work of the NIC • there will be appropriate representation on the NIC that will be linked to the work of the national project so that there can be appropriate information exchange to all beneficiary stakeholders • Stakeholders are willing to participate and share knowledge post-training
Output 3.2.1 Strengthened national participatory consultative and coordination mechanisms	Functional NIC endorsed at senior policy level (could be existing mechanism) IW4	• National inter-sectorial coordinating mechanisms weak and not mainstreamed in national-level planning • stakeholder fatigue, lack of drivenness and capacity limitations in making meaningful contributions	Mid-term targets • Support to at least 1 NIC meetings per country with high-level policy makers End of project targets Support to total of at least 2 NIC meetings per country with high-level policy makers	• Proceedings of NIC meetings • media releases • project progress reports	
Output 3.2.2 Training and capacity building programmes to support implementation of water, land and ecosystems management across government, private sector agencies and civil society organizations	• Successfully implemented training activities at national and regional levels IW17 • number and diversity of stakeholders that participated	• Countries have implemented capacity building programmes mainly associated with projects where resources are available • routine training and capacity building limited on account of resource constraints • high personnel turnover rate necessitates continual investment in capacity building	Mid-term targets • regional-level capacity needs assessment completed (based on existing knowledge) • Capacity building programme (harmonized) developed including resource material • Support to at least 10 national and regional training activities End of project targets • Support to total of at least 20 national and regional training activities • Compilation of resources materials into training toolkits	• Training needs assessment report • training modules and other technical resources • project reports	

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	Key Indicators	**Baseline**	**Key Mid-term & project end targets**	**Sources of verification**	**Risks and Assumptions**
Component 4 Objective: To enhance knowledge exchange amongst practitioners to improve integrated and effective water, land and ecosystems resource management through the promotion of best-practices, replication of lessons learnt and experiences gained					
Component 4 Outcomes	Indicator	Baseline	Target	Sources of verification	Risks and Assumptions
Outcome 4.1. Improved engagement and information access for practitioners and other stakeholders through targeted knowledge sharing networks	• Enhanced stakeholder networking and knowledge sharing towards implementation of solutions across the Caribbean and other SIDS regions • Expanded, strengthened community of practices with shared experiences in successfully implementing solutions	• relative isolation of practitioners with limited opportunities for interactive experience-based learning • limited dissemination and access to resources to practitioners in appropriate formats • many web-based platforms but translation of knowledge to implementation is not well understood; • translation of expert and traditional knowledge to application at community level is limited	• evidence of stakeholders applying knowledge, tools and methods generated by project • technical support agencies providing enhanced support in sharing information to improve design making; • strengthened linkages amongst practitioners in various fields "community of practices" across SIDS regions • project stakeholders and other resource users accessing project website • project contribute to other information clearinghouse mechanisms	• Formal and informal communities of practices and associated knowledge platforms functional; • reporting to UN conventions and other regional and international frameworks • project on-line resources frequented by user community evidenced by interface diagnostics	Risks: • Perception that there are too many such KM platforms that do not function to initial expectation • Maintenance of project website may be neglected post-project • Occurrence of disruptions to hosting of conference events or technical exchanges on account of adverse weather conditions at time of event • unforeseen prohibitive costs associated with hosting of conference events related to fluctuating air travel costs, hotel and other venue costs • Assumptions: • stakeholders consulted will be cooperative • strong buy-in by technical professionals and
Output 4.1.1 Public awareness / Public education (PA/PE) Strategy for the regional and national project components	PA/PE Strategy for the overall project and 10 National PA/PE programmes for each country informed by a needs assessment	• No regional PA/PE Strategy exist to integrate and harmonize actions across the project • National PA/PE interventions occurring but isolated from each other and lacking a unified approach	Mid-term targets • Comprehensive regional and 10 national PA/PE programmes End of project targets	• Needs assessment report PA/PE Strategy for project featuring regional and national actions	
Output 4.1.2 Knowledge, Attitude and Practice (KAP) assessments during the project	KAP survey in all countries at project start-up, at mid-term and near project closure	limited knowledge on perceptions of environmental issues and perceptions to effectively guide project interventions	Mid-term targets • First KAP survey and findings (within 2 months of project commencement) End of project targets • second KAP survey and findings at end of Year 3 • final KAP survey and findings at mid-year 5	Findings reports from the three surveys	

Project Goal: to enhance the sustainable flow of ecosystem services and their contribution to sustainable socio-economic development in the Caribbean through the application of appropriate solutions for the improved integrated management of water, land and biological resources					
	Key Indicators	**Baseline**	**Key Mid-term & project end targets**	**Sources of verification**	**Risks and Assumptions**
Output 4.1.3 Newsletters, Best practice guidelines, Lessons learnt outputs and Communities of Practice	• Content contributed to existing web-based platforms • documented best practices (as reference compendium) available • Project showcases at special events • Published experience notes	• documentation of best practices and application in the utilization of natural resources for commercial and industrial purposes remains weak • extent of information capture and dissemination is not sufficient to encourage uptake • capacity limitations in capturing and sharing knowledge • best practices harvested from projects do not receive sufficient visibility • communities of practices are not well defined and requires further support and development inputs	Mid-term targets • 10 quarterly IWECO Project newsletters published • at least 6 best practice guidelines • best-practice guidelines presented at least 3 regional and international events End of project targets • total of 20 quarterly IWECO Project newsletters published • at least 12 total best practice guidelines • Project experience notes • best-practice guidelines presented at least total of 6 regional and international events • Compendium of best practices in "Caribbean Environmental Outlook-type" documenting relevant topics	• Published compendium of best practices • MOUs/cooperation frameworks between cooperation agencies • user-website interface diagnostics • content updates	policy makers • buy-in and support from the private sector • willingness to make continued investment in knowledge sharing amongst stakeholders • stakeholders will recognize value of KM platforms • transition of project website to support agency post-project • costs for production of learning resources and media products will not be prohibitive • Willingness of countries to host conference events and provide necessary support • Support from the various project partners and provision of technical contributions in conference hosting
Output 4.1.4 Innovative communications and learning tools	• Number and diversity of student educational resources available and in use • number and diversity of technical seminars, lecture series, workshops hosted for various stakeholders	• limited application of innovative tools and approaches in natural resources management • lack of capacities to effectively deliver these innovative approaches	Mid-term targets • At least 2 school educational resource toolkits (including games) developed and disseminated • at least 2 environment-themed songs (and videos) by popular music personalities (English and Spanish) targeting school audiences • Citizen science-based programmes (following the IWCAM CBRA toolkit; use of participatory 3-D GIS, and others) rolled out in at least 4 countries End of project targets • Citizen science-based programmes rolled out in remaining countries	• Reports from schools on use of tools • reports from field citizen science investigations • airplay of songs on broadcast media • Project reports • Community feedback	
Output 4.1.5. Project website (according to IW:LEARN guidelines) and	• Project website (with social media plug-ins) IW • number and diversity of	• UNEP CEP manages content from the GEF-IWCAM Project via the project website	Mid-term targets • IWECO Project website operational	• User traffic on website • number of content downloads from website	

Project Goal: to enhance the sustainable flow of ecosystem services and their contribution to sustainable socio-economic development in the Caribbean through the application of appropriate solutions for the improved integrated management of water, land and biological resources					
	Key Indicators	**Baseline**	**Key Mid-term & project end targets**	**Sources of verification**	**Risks and Assumptions**
media products	media products (jingles, videos, film, digital, print media) developed and disseminated • number and diversity of stakeholders impacted • number of special promotional blitzes executed (in collaboration with private sector and other partners)	• level of access to and application of knowledge products on web portals not well understood • PA/PE programmes are on-going in all countries - tends to be ad-hoc and not sufficiently mainstreamed in agency programmes • Linkages between mainstream media to facilitate outreach are weak • private sector not targeted sufficiently to trigger their engagement	• range of printed and electronic media products (including travelling exhibition display for project) • support to at least 1 special promotional blitz in each country (supported by the private sector in association with commemorative days) • support to in-country seminars, lecture series End of project targets • 1 feature-length film highlighting the project issues and solutions/achievements across all countries • range of printed and electronic media products • support to in-country seminars, lecture series	• Project newsletter • press releases (via various media) • private sector participatory/promotional agreements; (vi)	
Output 4.1.6 Professional exchanges; participation at regional and international fora	• (i) Participation in IW events (GEF IWC, Community of Practice (COP), IW:LEARN) IW • number of published experience notes through IWLEARN IW • Participation at major conferences and number of papers presented • Number of project showcases • number of professional and stakeholder exchanges between countries	• opportunities exist for participation at major conferences to showcase work and exchange ideas among SIDS regions • outputs from such exchanges result in new intellectual contributions to projects and programmes including new initiatives.	Mid-term targets • Participation of stakeholders in at least 5 major regional and global events/conferences (average 5 persons representing the project attending each event) • At least 3 technical exchanges between professionals across SIDS regions to share experiences and develop competencies End of project targets • Participation of stakeholders in total of at least 10 major regional and global events/conferences • at least 10 conference papers delivered • total of at least 8 technical exchanges between professionals	• Papers delivered • Conference/meeting proceedings • country host agreements • country mission reports	

Project Goal: to enhance the sustainable flow of ecosystem services and their contribution to sustainable socio-economic development in the Caribbean through the application of appropriate solutions for the improved integrated management of water, land and biological resources					
	Key Indicators	**Baseline**	**Key Mid-term & project end targets**	**Sources of verification**	**Risks and Assumptions**
			across SIDS regions		
Output 4.1.7 Hosting of the GEF International Waters Conference and participation support to upcoming GEF-IWCs, and regional dialogues on environment and development	• Hosting of the IWC7 Conference • Number of participants at IWC8 and 9 events • Number of Caribbean regional dialogues/workshops • Number of participants at regional dialogues/workshops	Conference has been held biennially although has not been hosted in a SIDS region	Mid-term targets ○ IWC7 Conference successfully hosted ○ At least 5 professionals and targeted stakeholders participated at IWC8 End of project targets • At least 2 regional dialogues hosted • Total of at least 5 professionals and targeted stakeholders participated at IWC8 and IWC9 ○ Total of at least 4 regional dialogues hosted	• Papers delivered • Conference/meeting proceedings • country host agreement	
Output 4.1.8 Hosting two GEF-IWECO Project Partnership Conferences	• Hosting of the biennial GEF-IWECO Project Partnership Conferences (2015 and 2017) • number and diversity of participation • Number of publications IW	• The GEF-IWCAM Project supported the hosting of validate tools partnership events in association with the Caribbean Environmental Forum • there are no significant environmental fora/conferences hosted by other agencies in the Caribbean region	Mid-term targets 1st GEF-IWECO Partnership Conference hosted End of project targets 2nd GEF-IWECO Partnership Conference	• Hosting agreements signed with host countries • Conference successfully held and proceedings published and disseminated outputs from the conferences disseminated through the IWLEARN mechanism	

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

Comment	Response
GEF Secretariat Review	
20 April 2012 1. Logical Coherence: The prospect that this project will generate multi-focal area (MFA) benefits would be enhanced if the logical framework is made simpler, made more logically coherent, and with reduced overlap and less reliance on buzzwords.	Agreed and revised accordingly. The simplified results framework and corresponding logframe has been simplified, with more concise and clear wording, and national sub-projects are coherent with the 4 results-area components and their corresponding 6 component outcomes, in addition to two other components tied to project management and evaluation.
(a) We recommend that the watershed management plans and coastal zone plans provide the framework in many of the other (currently separate elements) (e.g. wastewater management, land-use planning capacity, policy reform, investments in reforestation) should be nested. But currently, they are only one element of several others included under output 3. They should be the main output in this area, with more attention to how they will be created, monitored, and enforced.	Agreed and revised accordingly. The revised framework places more emphasis on the watershed management and CZM plans as the framework for the other output areas. The watershed management and coastal zone management plans, respectively, are at the forefront of component 3 on policy and planning and also contribute to component 2 on the monitoring systems. The plans themselves are an output, but their implementation and use is a critical outcome under the simplified results framework. The watershed planning and management approach advocated in the project, following from the GEF-IWCAM Project will contribute to the paradigm shift toward holistic management of landscapes as the watershed as the unit of management which is to be mainstreamed planning and development
(b) Please reduce overlap where possible. For instance, Outputs C1.6 (best practices) and C1.7 (replication) appear to be duplicative of outputs under C4, "enhancing knowledge exchange, best practices, and replication." Outputs under outcome C3 on strengthening policy frameworks appear on their own, but these should be tied to the issues of watershed and coastal zone management.	Agreed and revised accordingly. Overlaps reduced now, as main outcomes are distinct and national outcomes feed into them. See comment above and see revised results framework.
(c) The final project document should explain more clearly how this project will build on the accomplishments of the previous IWCAM project in each country and on a region wide basis. It would be helpful to have annexes that describe the baseline in each country, where	Agreed and revised accordingly. The project document has taken account of this comment and touches on how the interventions build on specific IWCAM accomplishments in each country (described in greater detail in the sub-project level documents), and in the region overall. The (appendixes) sub-project documents have baseline descriptions in each country, identified gaps and explain how the project is fulfilling these respective deficiencies. In regional components the linkages to IWEco from where the GEF-IWCAM left off are

Comment	Response
remaining deficiencies are in each country, and how the project will fill these gaps in each case.	highlighted. The regional sub-projects reinforce the national interventions.
2. Demonstration of Global Biodiversity Benefits: As a condition for CEO endorsement, the final project document will need to demonstrate, clearly and precisely, how investments of GEF biodiversity focal area (BD FA) resources will contribute to the conservation of globally significant biodiversity. The justification for investing BD FA resources in the watersheds in Cuba and the Dominican Republic (DR) is extremely weak, and it is not clear why these watersheds were selected. (For Jamaica, the justification in the PIF is clear: interventions are aimed at will protecting the Negril Great Morass, an internationally recognized key biodiversity area.) This justification must go beyond general statements that the entire Caribbean is a biodiversity hotspot and that reduction in nutrient and sediment flows will benefits for coastal marine habitats.	All eight country sub-projects touch on the BD FA, some to a much greater degree than others, and specific BD benefits are taken into account in detail in corresponding annexed documents. Specifically, the Cuba and DR sub-project documents have respectively enhanced the text related to their global significance toward biodiversity conservation benefits. The regional project ProDoc also outlines the respective justifications for investing BD FA resources in the Caribbean, and has been further elaborated beyond broad statements in sections 2.2 and 2.3. In the case of both Cuba and the Dominican Republic very specific rational is provided for the identification and selection of these target areas for project intervention based on the national importance and importance at the global level.
(a) The project will need to identify threatened species (terrestrial, freshwater, or marine) and associated significant habitat that will be protected or benefit from the project, at least for the countries where biodiversity resources will be invested.	The county situational analyses have been used to elaborate on sub-project strategies to protect threatened species and their habitat. Each sub-project provides details on pertinent (indigenous) flora and fauna relevant to project sites. The ProDoc summarizes the biodiversity conservation in section 3.2.
(b) Explain whether there are key biodiversity areas or protected areas in the watersheds or in the coastal zones and how actions undertaken in the project will reduce stress on them.	The country sub-project documents note specifically where there are key BD or PAs that lie within the ridge to reef zones targeted for interventions.
(c) Since a key goal of the project is to reduce stress on downstream coastal areas, the project will need to offer evidence that the coastal zones include critical habitats and species of concern.	The country sub-project documents, where relevant, bring forward evidence on critical habitats in coastal zones.

Comment	Response
3. Approach to Biodiversity Mainstreaming The project's approach to biodiversity mainstreaming is not very clear. The watershed management plans to be developed are one of several objectives, and there is little detail on what will be done to improve capacity for integrating biodiversity into land-use planning and monitoring and enforcing the plans.	The approach to capacity building for the integration of BD into land-use planning has been elaborated in in the ProDoc. The more detailed breakdown of activities for training and engagement of government and key (research) partnerships can be found in the country sub-project documents.
(a) Please explain, with sufficient detail, how protection of globally significant biodiversity will be incorporated into the watershed plans. Please describe how site level conservation priorities in the watersheds either have been established or will be established under the project so these can be incorporated in watershed/land-use planning.	As part of the baseline, the ProDoc explains the incorporation of biodiversity into land-use planning as a barrier to the protection of globally significant biodiversity and outlines in detail the ongoing laws, policies and plans that directly and indirectly relate to this priority. The sub-project documents lay out the conservation priorities in the targeted watershed sites but in cases where these have not been outlined, the inception phase will further elaborate, especially for 'monitoring systems' component 2, so that these can be brought into the watershed planning.
(b) Please indicate the specific budget that will be available to enforce the watershed management plans.	The budget appendices outline the estimated expenditures down to the activity level within countries, including soliciting some level of national 'buy-in' to application of watershed management planning rather than 'enforcement' of provisions of watershed management. The project will rather facilitate the development of systems for watershed management-based enforcement and compliance.

Comment	Response
(c) Describe the main economic sectors in the watersheds and what actions will be taken to protect species, protect or enhance habitats, and reduce stresses on biodiversity. How will the project increase forest and/or habitat cover and enhance connectivity, and what species will benefit from this? (d) Will the project support the adoption of BD-friendly economic activities, such as certified crops, ecotourism, etc.	Local economic development is a key dimension to the contributions derived from partnerships, including corporations and small businesses, which will be established or strengthened by the project. Community livelihoods development is the focus of the SGP sites, and the identification of entry points for ensuring the protection of habitat and species will be further developed by the technical feasibility studies conducted during project inception. The targeted economic sectors vary from site to site in different countries and are addressed in detail in the sub-project documents as to what specifies and habitats will be protected – including forest land where relevant - and how the actions taken by the project will reduce stresses on biodiversity. The project will also encourage the uptake of practices and methods that are BD-friendly, including adoption of formal standards and promotion of ecotourism. Through partnerships, opportunities will be further identified for deriving economic benefits from conservation as well as from reductions in pollution and nutrient loads.
STAP Scientific and Technical screening - April 30, 2012	
1. STAP commends the project proponents for assembling a multi-focal project that strives to integrate GEF support for the ˜ridge to reef' concept in the Caribbean SIDS. Many diverse challenges present within the region have been identified and the PIF, while over long, does focus effectively upon the challenge of inter-sectoral actions. However, STAP wishes to highlight a number of areas which require further work with regard to this initiative. In addition, STAP wishes to remain informed of the development of this initiative in advance of CEO endorsement (please see paragraph 10 below).	The project management team appreciates the input and advice of STAP with regard to ensuring the implementation of a comprehensive ridge to reef approach and will keep STAP informed on project execution. STAP engagement will be useful during inception phase.

Comment	Response
2. The PIF document is written more in the style of a programming framework than a project concept document, resulting in many enabling statements, in some cases presented with targets at regional level, but which will require more specificity at country and sub-country level by the time of CEO endorsement. Accordingly STAP has screened the project from a strategic perspective and intends therefore to re-examine the draft full project brief at the earliest opportunity prior to CEO endorsement.	At the time the PIF was written, very little of the national and regional level input was in place for the development of the strategic foci and therefore definitive statements were lacking in the PIF. The ProDoc and respective national interventions have been able to take advantage of the country profiles and considerable deliberation with the respective national partners to ensure the technical viability and relevance of proposed actions.
3. STAP notes the statements towards the end of Section B1 (pp.20-21) that indicators for monitoring and assessment for water resources, land degradation and biodiversity will be "further elaborated and mainsteamed into national accounts". It is strongly suggested that criteria for choice of indicators should be specified clearly, preferably based on Convention guidance (e.g. the UNCCD national reporting of impact indicators under PRAIS) and on the GEF-5 focal area strategies. It is vital that chosen indicators integrate the multiple processes of change in status of land and water, enabling also the tracking of the impact of project investments on key global environmental benefits. It is disappointing that there is very little emphasis on GEBs and impact indicators, even if only to flag the criteria by which they will be determined.	The term “national accounts” refers to country reporting frameworks/national statistics and does not provide the only source of indicators for achievement. In order to ensure national relevance and ownership of the IWEco activities, some indicators will be informed by the national accounts priorities, but the use and framing of results relies on the GEF 5 focal strategies, Tracking Tools and Convention guidance. The revised results framework draws out the global environmental indicators more clearly and particularly highlights the impact indicators for the purposes of monitoring and reporting against Tracking Tool indicators.

Comment	Response
4. STAP understands that the coherence of the proposed actions depends largely upon the baseline achievements of the GEF-IWCAM project (GEF ID 1254) which has provided a technical foundation for an integrated approach to the management of watersheds and coastal areas (IWCAM) along with best practice toolkits, including for legislation. The Protocol Concerning Pollution from Land-Based Sources and Activities (LBS Protocol) appears to provide at policy level a common platform for building regional action. The country profiles discussed in section B.1 are valuable summaries of policies and plans.	Indeed, IWEco builds on the foundation set up by IWCAM accomplishments and the name itself was chosen to indicate the follow-on nature of the project. The LBS does provide a platform for regional action and will be utilized as such.
5. However STAP finds it surprising that, in spite of these excellent foundational achievements and country profiles, the following section (B.2) proposing Component 1 actions do not always match the gaps identified in the profiles, therefore it is hard to follow the strategic gap-filling argument being advanced. Within the description of the proposed menu of indicative interventions' and national project interventions discussed in this section, STAP also finds disappointing the lack of a strategic context to ensure that each possible action contributes to an integrated result. STAP suggests that the proposals should have been placed into context within an inter-sectoral framework that builds towards a coherent national or regional set of results and thence to global environmental benefits.	The activities chosen for implementation at the project level were a product of the respective national ministries and key stakeholders and their priorities during PPG stage. Therefore, while the country profiles and foundational achievements provide the basis for action, not all the gaps identified could be addressed through IWEco. Nevertheless, the ProDoc draws out the strategic argument for filling important gaps identified, and also contains substantial background information to place each project activity in this context. Each component of the project is grounded in an cross-sectoral framework that integrates GEF Strategic priorities at the national and regional levels. Table 3 in the ProDoc attempts to summarize the critical gaps by thematic area to be addressed for improved water, land and biodiversity resources management in participating countries. Those to be specifically addressed by the IWEco Project have been highlighted.

Comment	Response
6. Component 2 has the potential to address the question of whether the project can achieve its overall vision and is very promising. STAP looks forward to the elaboration of Component 2 at country and regional level, including how to deal with feedback to (and from) SIDS that are not participating within the project but which may wish to buy into the project data and knowledge bases (Component 4) at a later date.	Agreed, component 2 exemplifies the overall vision of the project for the national and the regional level, and through elements of component 4, the management team will use opportunities to seek out the feedback and input of non-participating SIDS and share/exchange knowledge on intervention strategies and lessons.
7. There is a commendable emphasis in the project on sustainable and innovative practices and technologies, with an explicit aim that best practices will be disseminated and shared. What STAP finds missing in the proposal is the analysis of what makes a technology a best practice' and the Knowledge Management system that will enable (a) the storing of technology descriptions and performances, (b) the analysis of biophysical and financial performance of these technologies, and (c) the sharing of information. STAP suggests that an existing database, such as WOCAT or LADA, be utilized, so that lessons might be more widely drawn for all SIDS. The KM component should be an integral part of the project.	It is considered that identification and selection of best practices will be informed by inception feasibility and indeed through application of the practice/technology in the roll-out of the national projects. A key criteria for recognition of best practices will be appropriateness for replicability. This will be supported by regional umbrella sub-projects 2, 3 and 4. Knowledge management and dissemination, which is embodied in component 4, is - as STAP suggests it should be - an integral part of the project. The project team has taken into consideration the use of an existing database and/or software for the uses described [(a) the storing of technology descriptions and performances, (b) the analysis of biophysical and financial performance of these technologies, and (c) the sharing of information], but has not determined yet which precise platform will be most useful across the eight countries. LADA will be applied in those countries where IWEco can build off FAO workshops and training. Further consideration of what other platforms may also be needed to support points a through c above will be taken into account and decided upon collectively during inception phase workshops with the participation of all countries.
8. Although somewhat outside of the scope of this assessment, STAP believes that the project could benefit from considerable strengthening of the financial analysis, incentive and intervention options. Additionally, the risk table at B.4 should include lack of sustainable finance as a high risk. Also, the first risk, "IWRM and ICZM policies and plans are not accepted by the governments" may not be the best formulation of the more important risk, namely that the policies and plans will be accepted but not (or poorly) implemented.	Agreed to take into consideration during the inception phase, as part of further elaboration and development of the respective strategies for incentivizing options. As suggested, sustainable finance has been added as a high risk under the risk management matrix. Also, the first risk has been reformulated as suggested to account for poor implementation of the proposed policies and plans.
9. At the IWCAM Final Project	Agreed, and measures have been taken to address these elements:

Comment	Response
Conference (Kingston, Jamaica, 16 - 18 November 2011), it was noted that there was difficulty of engaging the private sector and key ministries such as the Ministries of Finance; the inability of technocrats to successfully communicate to politicians the urgency of the need for IWRM; and, the lack of secure finding for follow-on actions. STAP suggests that the present project proposal should address this deficiency, including options for payments for environmental services especially within a ridge to reef context, drawing on experience from other projects including those within the GEF portfolio.	1. Efforts have been made by the project design team to forge relationships with private sector partners at the corporate level as well as with local businesses and other stakeholders involved in local economic development. These partnerships have been formed around in–kind and cash co-financing, as well as through mutual interests in public relations and outreach. It should be noted however that additional work will be required at inception and during implementation to fully bring on board private sector partners. 2. In terms of engagement with key Ministries such as Finance, the country teams have been tasked with the strengthening of the national intersectoral committees where they are existing that includes Finance Ministries. This is embedded in the national implementation modalities for the project 3. The issue of communicating the urgency of needs addressed by the project is incorporated into Component 4. Specifically, concern over technocrats' ability to effectively inform politicians of critical requirements for political support in driving solutions is addressed through the application of innovative approaches for communication and dynamic exchanges with the private sector and other stakeholders. All avenues including those via social media, special field tours and special seminars, engagement of opposition parliamentarians will be applied. 4. A strategy for financing of follow-on activities will be informed through inception viability studies for the national projects. These will seek out opportunities for investment partnerships linking community and private sector interests for economic gain whist benefiting environmental resource conservation. 5. In terms of a PES system from ridge to reef, the project will consider suitable options in detail during the inception phase of Component 1 (at the national level). Project inception socio-economic viability evaluations will inform PES opportunities.
10. Clearly there are many scientific and technical arrangements to be worked out by the project proponents and partners and therefore STAP requests that it be copied drafts of the emerging project brief to enable timely and constructive feedback to the proponents, as well as to agree to a formal review point prior to submission of the full project brief for CEO endorsement.	The project development team faced challenges in the preparation of the documentation in a timely manner as a result of constraints that were beyond the control of the team. The task of having to cover 8 countries and 4 focal areas of the FSP, rendered it near impossible to create an additional layer of formal review with STAP on top of reviews with UNEP, UNDP, and the GEF Sec before CEO endorsement. As a result, many of the activities and outputs that are scientifically and technically intensive will take place during the inception phase within each sub-project country. The STAP review and technical support (via technical briefs for feedback) will certainly be most valuable during inception activities and during the course of project implementation.
Government of Germany	

Comment	Response
The full proposal should clearly identify how the reduction of pressure on forest resources and the generation of sustainable flows of forest ecosystem services are achieved. Further strategies should be developed on how SFM will be implemented and potential cooperation partners in the field of SFM and the provision of Ecosystem Services should be identified. In addition, there should be a clarification whether the project aims at improving solely SFM or at developing national REDD+ strategies. The estimations for potential carbon sequestrations through SFM seem quite high for the various national projects; need to further explain calculation factors.	Reduction in pressure on forest ecosystems and resultant enhanced sustainable flows will be achieved in all the countries through the promotion of SFM drawing on best practices to serve the immediate need of restoring degraded lands so as to minimize degradation and climate variability-driven threats to ecosystems and livelihoods. SFM resources will be utilized for reforestation within upland target areas and for the installation of slope and riverbank armoring measures deploying land stabilization and drainage/runoff diversion techniques incorporating bio-engineering controls. While the development of national REDD+ strategies will be somewhat secondary within the scope of the project, it will form part of the general strengthening of policy and regulatory frameworks that countries need to put in place continue to support sustainability and replication of the investments. The monitoring framework for the national investments will employ the SFM, LD and BD tracking tool metrics in particular (and IW metrics as relevant), to track progress following installation of the SLM investments. Some specific indicators to be applied will include areal coverage of intervention (forested land area, agricultural land area impacted), change in species composition indices, relative change in sediment loading within runoff that drain from the target areas. Mindful that the timespan of the project will likely not allow for detectable or measurable change of state in forest conditions, 'process' indicators will be used as a measure to assess the trend toward improved SFM. The project will utilize a research partnership mechanism that to support the scientific investigation and monitoring of the investments against the tracking tools and the project logical framework. Standard methodologies will be employed in land degradation assessment that will inform the precise implementation of the investment. A governance partnership will support the design of policy and regulatory mechanisms for mainstreaming of SFM within national land policy and development frameworks. A public education partnership under the knowledge management component of the project will share experiences and lessons learnt. The estimates of avoided carbon and carbon sequestration were derived using the FAO Ex-Ante Carbon-balance Tool (EX-ACT) tool. The Tool was used to estimate the carbon sequestration from the acreages that will fall under direct on-site investments. For all the countries the starting condition of the landscapes to be treated were classed as 'degraded'. Under the IWEco Project investments, two scenarios were modelled; (1) conversion of degraded lands to 'forest plantation 2' for cases where restorative work was to rehabilitate primary or secondary forests and (2) conversion of degraded lands to perennial agro-forestry type mixed cropping systems. For each country the acreages to be rehabilitated were therefore split into the two categories (reforestation/afforestation and perennial crops). In the computations, it was assumed that none of the investments will contribute to land degradation (that would be computed as a contributor to CO_2). The table below is the split between the two investment categories for each country.

Comment	Response

Country	Total acreage of direct investment (ha)	conversion of degraded areas to plantation zone 2 (ha)	conversion of degraded areas to perennial tree crop (ha)
Antigua and Barbuda	15.0	9.0	6.0
Cuba	1,690.0	1,014.0	676.0
Dominican Republic	500.0	350.0	150.0
Jamaica	230.0	184.0	46.0
St Kitts & Nevis	135.0	135.0	-
Saint Lucia	50.0	25.0	25.0
St Vincent & the Grenadines	15.0	13.5	1.5
Trinidad & Tobago	100.0	90.0	10.0
Totals	**2,735.0**	**1,820.5**	**914.5**
	Overall percentage acreage splits	**66.6%**	**33.4%**

No additional land-use or agriculture-specific parameter values were used; default values were otherwise accepted. The 'without project' modelling was not carried out. The table below contains the carbon sequestration estimates for the countries in terms of gross fluxes and annual sequestration over a 5-year duration.

	Gross fluxes (tCO2eq)						Annual tCO2eq/yr			
Country	Afforestation	Other	Perennial	Total	Per hectare	Per hectare per year	Afforestation	Other	Perennial	Total
Antigua and Barbuda	-878.0	-190.0	-155.6	**-1,223.5**	-81.6	-16.3	-175.6	-38.0	-31.1	**-244.7**
Cuba	-97,049.1	-20,157.8	-17,530.9	**-134,737.8**	-79.7	-15.9	-19,409.8	-4,031.6	-3,506.2	**-26,947.6**
Dominican Republic	-33,498.2	-4,472.9	-3,890.0	**-41,861.1**	-83.7	-16.7	-6,699.6	-894.6	-778.0	**-8,372.2**
Jamaica	-19,034.4	-1,727.7	-1,192.9	**-21,955.0**	-95.5	-19.1	-3,806.9	-345.5	-238.6	**-4,391.0**
St Kitts & Nevis	-13,169.5	0.0	0.0	**-13,169.5**	-97.6	-19.5	-2,633.9	0.0	0.0	**-2,633.9**
Saint Lucia	-2,438.8	-791.5	-648.3	**-3,878.7**	-77.6	-15.5	-487.8	-158.3	-129.7	**-775.7**
St Vincent & the Grenadines	-1,316.9	-47.5	-38.9	**-1,403.3**	-93.6	-18.7	-263.4	-9.5	-7.8	**-280.7**
Trinidad & Tobago	-8,613.8	-298.2	-259.3	**-9,171.4**	-91.7	-18.3	-1,722.8	-59.6	-51.9	**-1,834.3**
Totals	**-175,998.7**	**-27,685.5**	**-23,716.0**	**-227,400.2**	**-87.6**	**-17.5**	**-35,199.7**	**-5,537.1**	**-4,743.2**	**-45,480.0**

At project inception, further quantification the parameters to refine the model outputs will be undertaken.

ANNEX C: STATUS OF IMPLEMENTATION OF PROJECT PREPARATION ACTIVITIES AND THE USE OF FUNDS

A. PROVIDE DETAILED FUNDING AMOUNT OF THE PPG FINANCING STATUS IN THE TABLE BELOW;

PPG Grant Approved at PIF: **299,000 USD**			
Project Preparation Activities Implemented	***GEF/LDCF/SCCF/NPIF Amount ($)***		
	Budgeted Amount	***Amount Spent To date***	***Amount Committed***
Technical Assistance in the selection and design of National Interventions for each of the 8 demonstration countries	260,000	260,000	260,000 (GEF resources used total 120,000, co-finance used total 140,000)
Technical Assistance supporting the collation of all regional baseline data integration of the GEF Thematic Areas including comprehensive Project Design for all Components	240,000	240,000	240,000 (GEF resources used total 100,000, co-finance used total 140,000)
Partners PPG Inception Workshop	49,000	49,000	49,000
Country Missions, National Consultations and Regional Validation Exercises	100,000	100,000	100,000 (GEF funds used total 30,000, co-finance used total 70,000)
TOTAL	649,000	649,000	649,000
Total	(GEF grant budgeted total 299,000 co-finance total 350,000)	(GEF grant spent total 299,000, co-finance total 350,000)	(GEF resources committed total 299,000, co-finance used total 350,000)