PROJECT TYPE: FULL-SIZED PROJECT
TYPE OF TRUST FUND: GEF TRUST FUND

I.1.1.1.1.1.1 GEF-6 Project Identification Form (PIF)

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PART I: PROJECT INFORMATION

Project Title:	CReW+: An integrated approach to water and wastewater management using innovative solutions and promoting financing mechanisms in the Wider Caribbean Region		
Country(ies):	Barbados, Belize, Colombia, Costa Rica, Cuba, Dominican Republic, Grenada, Guatemala, Guyana, Honduras, Jamaica, Mexico, Panama, Saint Kitts and Nevis, Saint Lucia, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago	GEF Project ID:[1]	9601
GEF Agency(ies):	IADB, UN Environment	GEF Agency Project ID:	GEF ID: 9601 IADB:DF-RG-G1011 UNEP: 01444
Other Executing Partner(s):	UN Environment Secretariat to the Cartagena Convention (CAR/RCU), National Pilot Executing Agencies	Re-submission Date:	October 6th, 2017
GEF Focal Area(s):	International Waters; Land Degradation	Project Duration (Months)	36
Integrated Approach Pilot	IAP-Cities ☐ IAP-Commodities ☐ IAP-Food Security ☐		Corporate Program: SGP ☐
Name of parent program:	[if applicable]	Agency e ($)	$1,344,954

A. INDICATIVE FOCAL AREA STRATEGY FRAMEWORK AND OTHER PROGRAM STRATEGIES[2]

Objectives/Programs (Focal Areas, Integrated Approach Pilot, Corporate Programs)	**Trust Fund**	**(in $)**	
		GEF Project Financing	**Co-financing**
IW-2 Program 3	GEFTF	$1,673,468	$17,092,144
IW-2 Program 4	GEFTF	$2,831,513	$23,888,515
IW-3 Program 5	GEFTF	$6,576,592	$63,744,405
IW-3 Program 6	GEFTF	$3,504,567	$38,490,673
LD-1 Program 1	GEFTF	$178,899	$2,448,440
LD-1 Program 2	GEFTF	$178,899	$2,448,440
Total Project Cost		**$14,943,938**	**$148,112,617**

[1] Project ID number will be assigned by GEFSEC and to be entered by Agency in subsequent document submissions.

[2] When completing Table A, refer to the excerpts on *GEF 6 Results Frameworks for GETF, LDCF and SCCF*.

B. INDICATIVE PROJECT DESCRIPTION SUMMARY[3]

Project Objective: To implement innovative technical small-scale solutions in the Wider Caribbean Region using an integrated water and wastewater management approach building on sustainable financing mechanisms piloted through the Caribbean Regional Fund for Wastewater Management.						
Project Components	**Financing Type[4]**	**Project Outcomes**	**Project Outputs**	**Trust Fund**	**(in $)**	
					GEF Project Financing	**Co-financing**
Component 1 Institutional, policy, legislative and regulatory reforms for Integrated Water and Wastewater Management (IWWM)[5]. <u>Sustainable Development Goals</u> SDG: 1.4; 2.4; 3.9; 6.2; 6.3; 6.5; 6.6; 6.a; 6.b; 12.4; 12.5; 13.b; 14.1; 14.5; 15.5 <u>Implementing agencies</u> UN Environment: $1,316,000 IDB: $1,375,000	TA	**Outcome 1.1** Consolidated improved and reformed institutional, policy and legislative frameworks for IWWM in at least 9 countries.	**Output 1.1.1** Diagnostic analysis of existing policy framework, legislations, guidelines and standards in support of IWWM conducted in 9 countries. **Output 1.1.2** Recommendations for reforming institutions policies, legislations and regulations in support of Integrated Water and Wastewater Management (IWWM) for at least 9 countries. **Output 1.1.3** 9 national development strategies and plans incorporating multi-sectorial approaches to IWWM.	GEFTF	$2,691,000 IW: $2,691,000	$8,490,686

[3] All costs are estimated and will be revisited during the development of the final project proposal.

[4] Financing type can be either investment or technical assistance.

[5] The term Integrated Water and Wastewater management will also include freshwater source protection in line with the principles of the ridge to reef approach.

			Output 1.1.4 Recommendations for amendments to the LBS Protocol to facilitate increased reuse of domestic wastewater including adoption of new criteria or standards for domestic wastewater discharges. **Output 1.1.5** Review, Analysis and Report for developing a new Protocol on the management of freshwater resources within the framework of the Cartagena Convention. **Output 1.1.6** Country specific Cabinet/Parliament Submissions prepared for at least 9 participating countries for formal ratification of the LBS Protocol.			

		Outcome 1.2 Enhanced regional and national coordination, information exchange, science-based decisions, and reporting on relevant SDGs and MEAs, resulting from the use of national and regional platforms/databases for IWWM by national and regional institutions in at least 6 participating countries.	**Output 1.2.1** New or updated national platforms/databases, supported by a regional platform for IWWM developed in at least 6 participating countries[6].			
		Outcome 1.3 Improved knowledge and skills to enable the monitoring of national reform processes for IWWM, and for reporting on relevant SDGs and MEAs.	**Output 1.3.1** Capacity building workshops (3/year) held for staff in national agencies to drive national and regional reforms for IWWM and, for reporting on relevant SDGs and MEAs with at least 100 people trained in all participating countries.			

[6] To be part of the Clearing House Mechanism managed under Component 6.

Component 2 Sustainable and tailor-made financing options for urban, peri-urban and rural IWWM. <u>Sustainable Development Goals</u> SDG: 17.1; 17.7; 17.8, 6.5, 6.6. <u>Implementing agencies</u> UN Environment: $0 IDB: $1,825,000	TA	**Outcome 2.1.** Improved understanding of different financing options and greater readiness for wastewater management financing at small-scale local, community and national levels in all participating countries.	**Output 2.1.1** Compendium of recommendations on sustainable financing options considering micro credit, tariffing and other innovative mechanisms developed in consultation with relevant stakeholders, based on a review of existing financing mechanisms for IWWM at small, local, community or national levels, depending upon country context in all participating countries. **Output 2.1.2** A series of community/rural specific financing action plans and business models to address IWWM including reuse in at least 14 communities/sites.	GEFTF	$1,825,000 IW: $1,825,000	$5,778,070
		Outcome 2.2 Increased and sustainable financing for Integrated watershed management including for protecting surface and groundwater water sources in at least three 3 watersheds/hot spots.	**Output 2.2.1** Public–private mechanisms, payment options and recommendations on approaches to implement payment for ecosystem services developed in 3 critical watersheds/hotspots. **Output 2.2.2** Innovative incentive options and recommendations on financing mechanisms for water conservation, pollution prevention, and water and wastewater reuse developed in 3 critical watersheds/ hotspots.			

		Outcome 2.3 Improved knowledge and skills for successful design, establishment and management of appropriate financial mechanisms in selected countries.	**Output 2.3.1** Training modules for selected persons (at least 100) and agencies in the design, strategic planning, establishment and management of the financial mechanisms in selected countries.			
Component 3 Provision of innovative small-scale, local, rural, peri-urban and community-based solutions for IWWM. <u>Sustainable Development Goals</u> SDG: 1.4; 2.4; 3.3; 3.9; 6.2; 6.3; 6.5; 6.6; 6.b; 7.b; 12.4; 12.5; 14.1; 14.5; 15.5; 17.17 <u>Implementing agencies</u> UN Environment: $3,656,291 IDB: $4,403,031	INV	**Outcome 3.1** Improved wastewater treatment, including reuse, **in rural and peri-urban hotspots** using low tech and IWWM solutions processing 4,430[7] cubic meters per day, equivalent to 4,923 households and the reduction of 975 kilograms of BOD per day; 186 kilograms of nitrogen per day; and 39 kilograms of phosphorus per day[8].	**Output 3.1.1** Compendium of innovative technologies adapted to small-scale situations, supported by technical assistance, made available to all participating countries. **Output 3.1.2** Innovative policies, technologies and good practice recommendations developed and incorporated into investment strategies/ plans for water use, pollution prevention and conservation in critical watersheds/hot spots **Output 3.1.3** 12 rural and community level Integrated and Innovative Water and Wastewater low tech solutions implemented at selected hotspots. **Output 3.1.3** Using Output 2.1.1, a total of 2 micro-credit or other similar small-scale financing facilities established in at least 2	GEFTF	$8,059,322 IW: $7,701,524 LD: $357,798	$117,813,250

[7] These outcome indicators will define with more precision during the PPG phase. These outcome indicators will define with more precision during the PPG phase. The low-cost innovative technologies (i.e. constructed wetlands, etc. described in Section III, Component 3) will account for at least 50% of total investment costs of this component (US$6,700,000). These proven technologies show capital costs in the order of US$750-1000/m3 of treated effluent with tertiary quality outlet for irrigation and other uses (including removal of nutrients and other contaminants). At this stage of the PIF proposal, a cost of US$1,250 / m3 for these technologies will be assumed, which include investments in the infrastructure required for reuse. The capital costs required for these innovative technologies are lower than the costs assumed for more conventional technologies (US$1,914 / m3). The operational and maintenance costs of these technologies are just a fraction of O/M in conventional technologies (as low as 10%).

[8] The calculations are based on the parameters for strong-medium concentrations as per the FAO document on wastewater characteristics and effluent quality parameters (http://www.fao.org/docrep/T0551E/t0551e03.htm) and the parameters on the document "Wetland nutrient removal: a review of the evidence" (http://www.hydrol-earth-syst-sci.net/8/673/2004/hess-8-673-2004.pdf).

			countries to service future investments in small innovative wastewater management projects at local, rural or peri-urban levels.			
		Outcome 3.2 Improved life cycle management, circular economy and efficiency in water use-consumption promoting source protection and water reuse in the joint management of surface and groundwater resources in (three 3) critical watersheds/hot spots	**Output 3.2.1** 3 demonstration projects implemented focusing on: (1) Prevention, Reduction and Control of point and non-point sources of pollution source through best land management practices and (2) Development and Implementation of water source protection, water use efficiency and reuse strategies and action plans. **Output 3.2.2** Parameters required to improve water source protection and use efficiency identified through activities such as water footprint analysis, land use protection, improved understanding of virtual water and water trading within and between countries; better water use efficiency and understanding of the trade-offs and connections between water being used for food, energy and ecosystems. **Output 3.2.3** Volume of water (m3) conserved due to land use protection, effective water conservation/efficiency practices at end-use consumption, recommended by output			

			3.3.2, implemented in 3 watersheds/hotspots**.**			
		Outcome 3.3 Improved knowledge and skills within targeted communities to enable implementation of innovative low-cost integrated water and wastewater management solutions.	**Output 3.3.1** • 3 webinars/year with participation from at least 75% of key stakeholders of the participating countries • A Massive Open Online Course (MOOC) collaborating with academia and national agencies, involving participation from at least 1000 people • 20 civil society groups interacting with the project; • 200 people formally trained in addition to indirect beneficiaries (involving approximately 1000 people) through institutionalisation of the training in participating countries. [9] • A compendium of IWWM practices produced in English and Spanish			

[9] The infrastructure projects will include a reuse and recycle component, which in turn will increase the impact in the current number of beneficiaries (4,923 households) as well as the addition of new indicator e.g. Hectares of land irrigated using treated effluent.). The total number of beneficiaries under different training modalities and media will be defined during the PPG phase.

Component 4 Knowledge Management and Advocacy on the importance of IWWM order to achieve the Sustainable Development Goals. <u>Sustainable Development Goals</u> SDG: 1.4; 3.3; 3.9; 3.d; 5.5; 6.5, 6.6, 6.a; 12.6; 12.8; 13.3; 13.b; 17.6; 17.7; 17.8; 17.16; 17.17 <u>Implementing agencies</u> UN Environment: $1,070,000 IDB: $587,000	TA	**Outcome 4.1** Improved awareness and understanding of the advantages of implementing integrated approaches within targeted communities to enable implementation of low-tech and integrated water and wastewater management solutions.	**Output 4.1.1** A communications strategy, including information and dissemination of products related to IWWM and watershed management, includes information for key target groups in all participating countries, as well as a comprehensive inventories of l coverage of wastewater infrastructure, reuse, water availability and water footprint (national, subnational and watershed levels). Best practices and learning from the training activities will also feed into the strategy. **Output 4.1.2** Updated CReW clearinghouse mechanism on financial options, small- and large-scale wastewater treatment technologies, and wastewater and water management policies and practices developed. This clearing house mechanism will link to and enhance the GEF IWECO and GIZ CATS knowledge management system into an integrated system for the region.	GEFTF	$1,657,000 IW: $1,657,000	$8,316,541
		Outcome 4.2 Improved access to an information exchange mechanism, including knowledge of experiences and lessons learnt, as well as improved information sharing capability with GEF and the wider, local and national communities amongst all 18 participating countries.	**Output 4.2.1** Documented best practices, lessons and experiences from all Components. **Output 4.2.2** Operational information exchange mechanism for GEF and non-GEF projects established including; The project web portal < http://www.gefcrew.org/ > and associated regional			

			databases online, updated and linked to IW-Learn and other GEF Knowledge management systems Active engagement with GEF IW: LEARN (1% of project resources) including participation in IW conferences and provision of 3 experience notes.			
				Subtotal	$14,232,322	$140,398,547
				Project Management Cost (PMC)	GEFTF	$711,616	$7,714,070
						$14,943,938	**$148,112,617**

C. INDICATIVE SOURCES OF CO-FINANCING FOR THE PROJECT BY NAME AND BY TYPE, IF AVAILABLE

Sources of Co-financing	Name of Co-financier[10]	Type of Co-financing	Amount ($)
GEF Agency	IDB	Loan	$132,174,742
GEF Agency	IDB	Grant	$6,385,068
GEF Agency	UN Environment	In-kind	$7,860,807
Other	CWWA	In-kind	$200,000
Private Sector	CAWASA	In-kind	$100,000
Other	US EPA	In-kind	$200,000
Other	CARPHA	In-kind	$130,000
Other	PAHO-WHO	Grant	$162,000
Other	PAHO-WHO	In-kind	$900,000
SGP (Small Grant Program)			TBD
Total Co-financing			**$148,112,617**

[10] UN Environment and IDB are currently liaising with likely partners including the following: Donor agencies (CAF,USAID, GIZ); GEF Agencies (PAHO WHO, FAO); National Governments; Development Banks (CDB); Non-Governmental Organizations (TNC, WOP,GWP-CA, GWP-C, RRASCA,WRI), the Stockholm Convention Centers in Mexico and Panamá, the Basel Convention Regional Centre (BCRC-Caribbean), Inter-Governmental Organizations (CARICOM, OECS,SICA – CCAD); the Private Sector (Caribbean Tourism Organization (CTO), Global Environment Technology Foundation (GETF), , Central America Tourism and Hotel Investment Exchange, CH2M) Universities (Centro del Agua Monterrey, UTECH), in order to secure commitments from a sound group of partners and a fair level of Co-financing to support implementation of the project.; Spanish International Agency for Cooperation and Development (AECID).

D. INDICATIVE TRUST FUND RESOURCES REQUESTED BY AGENCY(IES), COUNTRY(IES) AND THE PROGRAMMING OF FUNDS [11; 12]

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	(in $)		
					GEF Project Financing (a)	Agency Fee (b)	Total (c)=a+b
IADB	GEFTF	Barbados	Land Degradation		$357,798	$32,201	$390,000
UN Environment	GEFTF	All Participating Countries	International Waters		$6,398,099	$575,829	$6,973,928
IADB	GEFTF	All Participating Countries	International Waters		$8,188,041	$736,924	$8,924,965
Total GEF Resources					**$14,943,938**	**$1,344,954**	**$16,288,892**

E. PROJECT PREPARATION GRANT (PPG)[13]

Is Project Preparation Grant requested? Yes ☒ No ☐ If no, skip item E.

PPG AMOUNT REQUESTED BY AGENCY(IES), TRUST FUND, COUNTRY(IES) AND THE PROGRAMMING OF FUNDS

Project Preparation Grant amount requested: $300,000					PPG Agency Fee: $27,000		
GEF Agency	Trust Fund	Country/ Regional/Global	Focal Area	Programming of Funds	(in $)		
					PPG (a)	**Agency Fee[14]** (b)	**Total** c = a + b
UN Environment	GEFTF	All Participating Countries	International Water		$131,093	$11,798	$142,891
IADB	GEFTF	All Participating Countries	International Water		$168,907	$15,202	$184,109
Total PPG Amount					**$300,000**	**$27,000**	**$327,000**

[11] Refer to the Fee Policy for GEF Partner Agencies.

[12] Included percentage contribution of each focal area to Project Management.

[13] PPG requested amount is determined by the size of the GEF Project Financing (PF) as follows: Up to $50k for PF up to$2m (for MSP); up to $100k for PF up to $3m; $150k for PF up to $6m; $200k for PF up to $10m; and $300k for PF above $10m. On an exceptional basis, PPG amount may differ upon detailed discussion and justification with the GEFSEC.

[14] PPG fee percentage follows the percentage of the Agency fee over the GEF Project Financing amount requested.

F. PROJECT'S TARGET CONTRIBUTIONS TO GLOBAL ENVIRONMENTAL BENEFITS[15]

Provide the expected project targets as appropriate.

Corporate Results	Replenishment Targets	Project Targets
1. Maintain globally significant biodiversity and the ecosystem goods and services that it provides to society	Improved management of landscapes and seascapes covering 300 million hectares	*n/a Hectares*
2. Sustainable land management in production systems (agriculture, rangelands, and forest landscapes)	120 million hectares under sustainable land management	*30 Hectares*[16]
3. Promotion of collective management of transboundary water systems and implementation of the full range of policy, legal, and institutional reforms and investments contributing to sustainable use and maintenance of ecosystem services	Water-food-ecosystems security and conjunctive management of surface and groundwater in at least 10 freshwater basins	n/a *Number of freshwater basins*
	20% of globally over-exploited fisheries (by volume) moved to more sustainable levels	n/a *Percent of fisheries, by volume*
4. Support to transformational shifts towards a low-emission and resilient development path	750 million tons of CO_{2e} mitigated (include both direct and indirect)	n/a *metric tons*
5. Increase in phase-out, disposal and reduction of releases of POPs, ODS, mercury and other chemicals of global concern	Disposal of 80,000 tons of POPs (PCB, obsolete pesticides)	n/a *metric tons*
	Reduction of 1000 tons of Mercury	n/a *metric tons*
	Phase-out of 303.44 tons of ODP (HCFC)	n/a *ODP tons*
6. Enhance capacity of countries to implement MEAs (multilateral environmental agreements) and mainstream into national and sub-national policy, planning financial and legal frameworks	Development and sectorial planning frameworks integrate measurable targets drawn from the MEAs in at least 10 countries	*Number of Countries: 18*
	Functional environmental information systems are established to support decision-making in at least 10 countries	*Number of Countries: 9*

[15] Provide those indicator values in this table to the extent applicable to your proposed project. Progress in programming against these targets for the projects per the Corporate Results Framework in the GEF-6 Programming Directions, will be aggregated and reported during mid-term and at the conclusion of the replenishment period. There is no need to complete this table for climate adaptation projects financed solely through LDCF and/or SCCF.

[16] The target is based on the calculation of the amount of money from Barbados's Star allocation in Land Degradation focal area, US$351,031 (the amount is without fees), and the cost per hectare of the intervention, US$12,000/ha. The project aims to work on the gullies, therefore the impact would be in i) aquifer recharge; ii) reduction of flash floods; and iii) protection of corals and reefs from runoffs.

PART II: PROJECT JUSTIFICATION

1. PROJECT DESCRIPTION.

I) Global environmental problems and/or adaptation problems, root causes and barriers that need to be addressed

a) Background

The discharge of partially and untreated domestic wastewater continues to be one of the greatest threats to freshwater and marine ecosystems in the Wider Caribbean Region. The degradation of the Caribbean environment negatively impacts on the ability of these ecosystems to continue to provide ecosystem goods and services for the region. UNEP/GPA's 2006 report on the State of the Marine Environment singled out untreated wastewater entering the world's oceans and seas as the most serious problem contributing to marine pollution. The Caribbean Sea Ecosystem Assessment (CARSEA) study similarly identified sewage pollution from land-based sources, along with pollution from ships as the most pervasive form of contamination of the coastal environment. Untreated domestic wastewater is the number one point source of contamination of the marine environment of the Wider Caribbean Region. It is estimated that about 86% of wastewater is still discharged into the sea untreated.[17]

Nutrient enrichment of rivers, groundwater and the coastal and marine environment as a result of partially or untreated effluent discharge causes eutrophication, which stimulates algal blooms and causes red tides along coastlines.[18] Polluted beaches and waters and declining coral reef quality and quantity (a 1.5% per cent area loss annually was observed from 1977 to 2001)[19] impacts tourist arrivals, resulting in a loss of income for Caribbean nations.[20] The Caribbean Sea generates more than US$3 billion annually from tourism and fisheries making it the most extensive revenue earning resource across the region.[21] The Updated Caribbean Sea Ecosystem Assessment[22] (CARSEA, 2014) stated that 70% of the Caribbean's coral reefs are threatened and pollution is one of the primary causes. Coral reefs are nurseries for many species of fish and shellfish[23], and the loss of coral reef habitat strongly impacts the fisheries industries in many countries in the region. In addition, coral reefs also serve an important function as protective barriers, protecting mangroves, sea grass beds and inland areas against storm surges and rising seas. The Caribbean Sea Ecosystem Assessment (CARSEA, 2007) study found that "the Caribbean is the region in the world most dependent on tourism for jobs and income," while "fishing is also a significant source of both income and subsistence." Yet both of these sectors are directly threatened by environmental degradation due to wastewater discharge.

While surface water run-off and ground water leaching serves to help carry pollutants from land-based sources and activities to the coastal and marine environment including from inland discharges of domestic wastewater, there is a further need to improve the management of freshwater basins to ensure freshwater security. Increased treated wastewater re-use, watershed protection to enhance the use of surface water and aquifer recharge, and prevention and reduction of pollution of freshwater sources are all required. Wetlands, rivers, aquifers, and lakes support the integrity of terrestrial ecosystems and pollution of these resources including by untreated or partially treated wastewater in rural settings have significant negative socio-economic impacts. Source water protection, improved demand-side management and more integrated approaches to water consumption and re-use by the end user will provide a range of benefits and services such as improved drinking water, water for agriculture, maintenance of aquatic habitats, and increased resilience from extreme climactic events.

Targeted interventions for conserving surface and ground water resources including through the protection of vegetation cover and sustainable land use practices are essential for long-term socio-economic development including improved livelihoods at urban and rural levels. As water and wastewater utilities and providers struggle to reduce water losses in their networks, protection of freshwater basins should be complemented by activities to improve water and treated wastewater use and re-use, and to increase efficiencies in water consumption among various users (especially in areas affected by climate change and variability leading to droughts and/or diminished water stocks). There is a significant opportunity in the region to augment existing freshwater supplies through improved wastewater treatment and reuse while safeguarding freshwater basins from wastewater pollution. The protection of forest cover and sustainable land use practices will further enhance pollution reduction measures by ensuring the supply of safe and continuous water to all end users especially during drought periods.

Funding for investment in sustainable wastewater management and source protection of freshwater resources remains a challenge in the Caribbean region despite the successes of recent programmes and projects. While Integrated Water Resources

[17] UNEP/GPA, 2006, *The State of the Marine Environment: Trends and Processes*, The Hague.

[18] UNEP 2004.

[19] Bruno and Selig 2007.

[20] Jackson et al. 2014, World Travel and Tourism Council 2014.

[21] IUCN 2014.

[22] CARSEA, 2014. Update Report of an Ecosystem Assessment of the Caribbean Sea.

[23] Burke et al. 2011.

Management has been accepted as the most effective way to ensure long term sustainability of freshwater basins and to continue to protect the Caribbean Sea from pollution in particular from untreated and partially treated domestic wastewater, the lack of knowledge about innovative technological solutions for IWWM as well as limited implementation remains a major challenge.

Smaller and rural communities in particular do not have access to this knowledge, or to innovative funding mechanisms and are therefore at highest risk. According to Joint Monitoring Program of the World Health Organization and UNICEF (2017), as at 2015, 86% of the Latin America and Caribbean region have at least basic sanitation services compared to the 75% in 2010 with the same basic services. While this percentage has increased, significant progress is required if the region is to become on track with meeting global targets to improve access to sanitation services by 2030. According to the 2015 calculations, 5% of the remaining regional population have limited sanitation services leaving 9% that use unimproved sanitation facilities. Of the overall 86%, 14% of rural populations were connected to sewers with 5% of their wastewater being treated compared to the 72% with connected sewers with 27% of the wastewater being treated in the urban areas.[24] The use of septic tanks, latrines and similar facilities spanned 54% in rural areas and 18 % in urban areas. There is therefore a need for innovative solutions which will specifically meet the needs of small and rural communities.

Countries also realize that the provision of wastewater treatment can have a positive impact and produce multiple benefits on the water-energy-food nexus. Treated wastewater is now recognized as a valuable resource for agricultural and domestic irrigation, and sludge as a soil enhancer for fertilizer application and for construction materials -when it is free of contaminants. Wastewater is also already being reclaimed and undergoing tertiary level treatment for use as drinking water in other developing countries where there are severe circumstances of drought.[25] Gas capture and re-utilization in bio-digesters can also contribute to power production. Although, in the Caribbean, some households have constructed wetlands to receive greywater outflows thereby improving ecosystem services and improving soil composition to withstand soil erosion, there is insufficient education and awareness of this possibility including the stigmatism attached to wastewater reuse. The result is that the 'resources' available from wastewater are wasted when wastewater is discharged untreated. This is especially significant in countries with limited land and energy resources, where economic benefits of treated wastewater reuse could make a difference in urban centres and poor, rural communities with the right awareness raising and educational efforts in place.

An integrated water resources management approach will enable a comprehensive approach to reduce pollution of the region's freshwater and marine environment from untreated/partially treated domestic wastewater generated in both coastal urban and rural interior settings, to implement improved land-use and marine spatial planning approaches and to strengthen existing frameworks for watershed and coastal zone management in the Caribbean region.

b) Global Environmental Problems

Untreated sewage, the result of rapidly expanding populations, poorly planned urban and rural development, and inadequate or poorly designed sewage treatment facilities is still one of the largest contributors to deteriorating public health and the Caribbean region's rich biodiversity. Marine life, fisheries, mangroves, coral reefs, and estuarine and coastal zones are all threatened by pollution, with approximately 80 per cent of the pollution coming from land-based sources, including pesticides, chemical fertilizers, heavy metals, detergents, oil, sewage, plastics and other solids.[26]

Environmental degradation due to wastewater discharge threatens terrestrial and marine resources and negatively impacts the economy of the Caribbean region. For example, coral reefs provide upwards of US$100 million per year in benefits to Tobago's economy, as estimated by a Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP). Controlling the discharge of untreated sewerage represents the number one priority for protecting the oceans from land-based activities.

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[24] World Health Organization (WHO) and the United Nations Children's Fund (UNICEF), 2017. Progress on Drinking Water, Sanitation and Hygiene: 2017 Update and SDG Baselines. Geneva.

[25] Gross, D., 2016. "Recycling sewage into drinking water is no big deal. They've been doing it in Namibia for 50 years.". Public Radio International (PRI). [Web article]. Available at: https://www.pri.org/stories/2016-12-15/recycling-sewage-drinking-water-no-big-deal-theyve-been-doing-it-namibia-50-years. Retrieved: 23 May 2017.

[26] UNEP 2011.

Treated wastewater (and by-products) offer a significant resource for reuse in water irrigation systems, energy production (and reduced energy demand) and nutrient recycling. Such resources would benefit Caribbean Small Island Developing States (SIDS) and countries with limited natural resources, and improve production within the water-food-energy nexus. As stressed by UN-Water (2013), A paradigm shift is now required in world-water politics not only to prevent further damage to sensitive ecosystems and the aquatic environment, but also to emphasize that wastewater is a resource whose effective management is essential for future water security. Many countries, including the Caribbean SIDS, are now looking towards treated wastewater and by-products as significant resources for reuse in irrigation and energy production.

Improving wastewater management needs to be implemented within a broader framework of integrated water and wastewater management that also considers measure to protect and safeguard surface and groundwater reserves through protection of upper watersheds and freshwater basins from deforestation, pollution and unplanned development. This will allow for adequate infiltration of water to local aquifers, the sustainability of surface water reserves, and erosion control to diminish costs of water treatment. The reuse of treated wastewater effluent offers significant potential for alleviating the pressures on existing water resources. There are opportunities to replicate and upscale existing efforts to reuse water in the agriculture, industrial and tourism sectors. There are still many challenges to be addressed in order to achieve the objective of reuse of treated wastewater, especially as an important element of the integrated management of water resources. Successful introduction will depend, above all, upon introduction of the necessary policies, regulations, standards and legislation to guide and regulate water reuse, as well as coordination amongst the various institutions involved. Finally, the cost of wastewater reuse, the existing or possible tariff structures, and incentives for reuse projects must be considered and dealt with if there is to be sustainability.

Root causes/Barriers

Policy, institutional, legal and regulatory frameworks for integrating water and wastewater management including the prevention, reduction and control of pollution from land-based sources of activities in the Wider Caribbean Region remain weak. Even for those countries with sufficient laws and regulations for pollution control including wastewater discharges and pollution of surface, ground and marine waters, there is limited enforcement. Regulatory actions need to be applied and enforced through multiple agencies dealing with water and wastewater management as well as pollution prevention and control using appropriate guidelines, standards and codes of practice. To support enforcement efforts, national monitoring programmes need to be developed and/or strengthened. Lessons from projects such as the Caribbean Regional Fund for Wastewater Management (CReW) have demonstrated that improved national institutional, policy, legislative and regulatory frameworks can stimulate greater investment particularly by the private sector in water and wastewater management.

According to a regional gap analysis conducted by the CReW project in 2010, 38 per cent of the countries in the WCR were listed as having weak policy and legislative frameworks which contributes to inadequate wastewater management. While 23 per cent of countries surveyed including Colombia, Cuba and the Dominican Republic reported the existence of a comprehensive national policy framework for wastewater management, less than 10 per cent had adopted legislation or regulations that focused on wastewater management.

Despite the existence of integrated water and wastewater management plans in a few Caribbean countries, there remains a lack of coordination among various legislative instruments for water and wastewater management. Legislation is often outdated and does not reflect modern realities. Weaknesses in enforcement are as a result of lack of human capacity, inadequate surveillance and monitoring laws, and low levels of compliance with standards.

There is a substantial funding gap between the investment needs for wastewater management and the current allocation of funding by Caribbean governments at urban and rural levels. Lack of adequate resources has led to unequal access to, and poor quality of, services with priority for improving wastewater collection and treatment being in the larger urban areas.

The IDB concluded at World Water Week in 2015 that, in order to achieve universal coverage over the next fifteen years, the region must develop innovative mechanisms to attract capital, ensure the sustainability of small-scale services, expand the treatment of wastewater in a sustainable manner, and improve institutional organization and governance in the sector. They estimated that while the Latin American and the Caribbean (LAC) invests US 4 billion per year at present, over the next fifteen years US 107 billion will be needed.

In the WCR, wastewater management is typically assigned low priority in the national budgets. Governments have not found sustainable mechanisms for providing the funding needed for capital investments in wastewater and a holistic approach has not been taken to water and wastewater management.

Traditionally, Caribbean utilities have accessed funds to finance capital expenditure from:

i. internally generated funds (e.g. tariffs for wastewater);
ii. government financing;
iii. bilateral funding grants and concessionary loans; and
iv. multilateral financial institutions, for example, CDB, World Bank and IDB.

If there is to be a quantum leap in the funding for water supply and sewerage projects, other sources of financing must be explored, such as:

i. commercial banks;
ii. direct equity investment (foreign and/or local);
iii. capital markets [fixed income investments (bonds) and equity investments (securities);
iv. multilateral, bilateral, private and climate Funds; and
v. payments for environmental services.

Although most participating countries have access to funding for wastewater infrastructure from development banks, they generally do not have the organizational readiness and adaptive capacity to effectively use the available funding opportunities. On the other hand, the costs of wastewater investments often cannot be covered with tariffs charged to customers of the wastewater utilities, in particular from rural communities. Implementation of full cost recovery for new wastewater systems may lead to an increase of as much as 100 per cent of the existing tariffs,[27] which is often perceived as socially unacceptable by most Governments. Even without such levels of investments, many Caribbean countries have not put in place a tariff structure --along with other complementary funding mechanisms such as dedicated subsidies) to adequately cover the cost of developing, operating and maintaining even the existing wastewater management services. An exception is Jamaica, which has adopted wastewater tariffs to cover operation and maintenance costs in its wastewater facilities, as well as capital investments or debt repayments mechanisms for long-term loans.[28] This was one of the success stories for the CReW project and could be replicated in other countries in the region.

Institutional organization and governance in the sector is weak. Wastewater and Sanitation services are provided largely by public authorities. Costs for investments, operations and maintenance often outstrip their capacities, as do present and future requirements for serving uncovered sections of the population especially in rural areas and the protection of source water supplies - surface and groundwater. This has led to inefficient service management and helped to perpetuate low private sector participation and financial instability. Most national utilities in the region operate inefficiently, with the percentage of non-revenue water in some countries being over 50 per cent.[29] On average, well performing utilities have a non-revenue water percentage at or below 25 per cent. Amongst the CReW participating countries, only Belize Water Services Limited shows a relatively efficient level of non-revenue water, at 27 per cent. Improving efficiency would reduce the required resources for the water sector and make additional resources available to invest in wastewater projects.

Data and information collection to inform decision making is minimal, outdated and often not used in national planning processes. Sustained water quality monitoring programmes as well as more comprehensive information management systems are lacking. The operational assessments conducted under the CReW Project indicate a lack of baseline assessments which makes it extremely difficult to design and implement appropriate monitoring programmes and information management systems. Participants at the 11th High Level Forum of Caribbean Ministers responsible for Water in 2015 (most notably the Assistant Secretary-General of Human and Social Development of CARICOM) urged the Caribbean ministers to explore the need to support greater capacity building in data management in their respective countries.

A need to deepen support to the WCR after the successful implementation of the GEF-funded CReW. The 6-year implementation by IDB and UN Environment of the CReW project in 13 countries contributed to sustainable financing for the wastewater sector in selected countries, and supported policy and legislative reforms as well as regional dialogue and knowledge

[27] Janson 2014.
[28] Janson 2014.
[29] Janson 2014.

exchange in the WCR. In response to the active engagement of the participating countries and its stakeholders, and at their request for furthering its objectives and coverage (extended now to a total of 18 countries, including Mexico and Colombia), the IDB-UN Environment partnership is proposing a 3-year program focused more on decentralized-rural wastewater treatment technologies, water source protection and sustainable watershed management practices, strengthened governance mechanisms, and improved knowledge management and advocacy.

II) Baseline scenario and associated baseline projects

a) Baseline Scenario

The identification of untreated domestic wastewater has been identified as the number one point source of contamination to the marine environment in the WCR. This was a major factor leading to the development of the Protocol on the Control of Land Based Sources of Marine Pollution (LBS Protocol) of the Cartagena Convention. This was reinforced by the regional priority rankings of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA) categories, which showed sewage to be the first priority.[30] Since the LBS Protocol was adopted in 1999 and entered into force in 2010, pollution from wastewater continues to be a major challenge despite a high level of political commitment through formal ratification of the LBS Protocol. To date it has been ratified by 13 countries in the WCR, with several more countries considering ratification.

Between 1990 and 2015 the investment in water and sanitation in Latin-American and the Caribbean has been in the range of US$4,063 million,[31] including the support of the GEF through multiple projects in the region. While the GEF CReW Project began to address this large need for support, countries still need support for additional policy, legislative and institutional reforms if there is to be significant and transformative change in the sector and ensure a more comprehensive approach to water and wastewater management that included rural communities and greater engagement of the private sector.

Under the GEF CReW project, through the establishment of revolving funds in Belize, Guyana and Trinidad & Tobago and a credit enhancement facility in Jamaica, different financing modalities for wastewater management projects were tested and evaluated. Where supportive policies and regulations (for example sewer connection policies and effluent/sludge regulations) already existed, there was greater incentive to seek access to the financing mechanism to implement wastewater infrastructure projects. Creating future demand for financing by other countries will require the strengthening of policy frameworks to provide more credible and stable conditions for investment planning.

Among the lessons learnt in CReW, capacity and organizational readiness of responsible agencies is as important as the availability of financial resources. Resources should therefore be also provided to support further strengthening of the enabling institutional, policy, legislative and regulatory environment; the development of a broader range of innovative financial solutions and implementing wastewater technologies at levels with priority focus for decentralized, rural community based interventions. The lessons learnt from CReW are summarized in Annex 1.

With regard to reuse of treated water, in many countries the existing legislation aims at controlling already occurring reuse, mainly in agriculture. There is often resistance to reusing treated water due to cultural taboos and/or lack of confidence in regulatory controls including monitoring capacity. Wastewater reuse guidelines aim at protecting the population from health risks and the environment from degradation and pollution. Most of the worldwide available guidelines on reuse of wastewater are based on either the US Environmental Protection Agency (EPA) guidelines or the 2006 WHO guidelines. These guidelines are suitable for developed countries with high wastewater treatment standards, but should be adjusted for countries in the WCR.
The IDB has been working for more than 50 years in support of wastewater management investments in the region. Currently the IDB INE Water and Sanitation loan portfolio amounts to US$877.2 million (in the IDB CReW+ participating countries) of which US$138.6 million are fully dedicated to CReW+- related activities and will be in full execution at the time of this Project´s endorsement. This includes projects to improve water supply and sanitation services within the urban and rural areas, as well as institutional and legislative strengthening programmes to improve water and wastewater management systems and their long-term sustainability.

With regard to technical assistance, from 2014 to 2016 the IDB, through the INE Water and Sanitation Division, invested over US$9 million in the IDB CReW+ participating countries, mostly through non-reimbursable Technical Co-operations (TCs). This is grant money used to support the development and the implementation of projects in areas such as, capacity building,

[30] GESAMP 2001.

[31] IDB 2015 (Conclusion from the 2015 world water week).

governance, institutional strengthening, improved coordination with other sectors, production of knowledge products etc. In 2017, the amount allocated to IDB CReW+ participating countries for TC´s in the region is approximately US$8 million. Currently, IDB is channelling TC resources, in the order of US$1 million, for a new initiative, the Caribbean Islands Sustainable Development Platform, in support of action plans, institutional capacity building programs, and a facility (the Sustainable Islands Facility -- SIF) with investments to mobilize public and private sector resources investments, all aligned with the SDGs and Climate Paris Agreement in the Caribbean basin.

UN Environment's Caribbean Environment Programme (CEP) has worked with governments in the region since 1986 to ensure sustainable use of marine and coastal resources. It coordinates and facilitates international negotiations and important legal instruments such as the Cartagena Convention and its three protocols, including the Land-Based Sources of Marine Pollution (LBS) Protocol. Two Regional Activity Centres – the Centre of Engineering and Environmental Management of Coasts and Bays (CIMAB) in Cuba, and the Institute of Marine Affairs (IMA) in Trinidad and Tobago work with the CEP Secretariat to provide technical assistance to countries in the implementation of the provisions of the Protocol to enable them to meet their obligations, including for effluent discharge quality standards. 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 LBS Protocol through its Assessment and Management of Environmental Pollution Sub Programme.

CEP has established joint partnerships with governmental institutions, NGOs and the scientific community. CEP also works with UN Environment's Global Programme of Action (GPA) in the framework of three global multi-stakeholder partnerships: The Global Partnership on Nutrient Management (GPNM), the Global Partnership on Marine Litter (GPML), and the Global Wastewater Initiative (GWI). In October 2016, the Caribbean Water and Wastewater Association (CWWA), one of CEP's key partners in the region, launched the Caribbean Node of the UN Environment GPA GWI (GW2I) for which it will be the secretariat.

Several other projects have also focused on institutional strengthening and capacity building in the area of water and wastewater management. In countries, such as Jamaica, Barbados, The Bahamas, and Trinidad & Tobago, support has been provided for Institutional strengthening, in particular in areas such a monitoring and analysis.

The Caribbean Development Bank (CDB) is an important partner in the region assisting its member countries in resource mobilization, promoting private and public investment and providing technical assistance for water and wastewater management. Some examples of its work are: a US$39.5 million loan to upgrade the water supply network in Barbados, thus reducing disruptions in water supply and improving operational efficiency; a technical assistance grant to Belize to help make the country's water sector less vulnerable to climate change impacts; and a US$11.2 million Water Supply Project to help improve the water supply system in Saint Lucia.

Regional Baseline
The following areas are of relevance to this project at the regional level:

Caribbean regional coordination for integrated water and wastewater management: Caribbean SIDS have been engaged through various governmental agencies and professional associations on the issue of integrated water resources management. Regional initiatives have been facilitated by several entities including the Global Water Partnership–Caribbean (GWP-C), the Caribbean Water and Wastewater Association (CWWA), the Caribbean Water and Sewerage Association (CAWASA), the Caribbean Public Health Agency (CARPHA, formerly the Caribbean Environmental Health Institute), University of the West Indies (UWI) and through the work of both the IDB and UN Environment. These interventions brought some level of donor support and coordination to advancement of the IWRM framework inclusive of land and ecosystem services considerations to the region.

The Global Environment Facility-funded Integrating Watershed and Coastal Area Management (GEF-IWCAM) project, implemented from 2006 –11 by UN Environment and UNDP, brought significant resources to augment these efforts in the SIDS, but many initiatives have faced resource challenges following its closure to ensure longer term sustainability. For example, while IWRM Roadmaps were developed in several IWCAM participating countries, systems were not fully in place to ensure the implementation of these roadmaps. While the new GEF IWEco project will support regional capacity building, there is a still a need for support at local community levels. At the Caribbean Community (CARICOM) level efforts are being made to re-activate a CARICOM Consortium on Water, designed to coordinate the activities of regional organizations working in IWRM and related areas. Components 1, 2 and 3 of the proposed project, in particular, will seek to expand their influence through the development and nurturing of partnerships with these existing institutions and networks and complement other ongoing regional initiatives. Through the work of the GEF CReW Project and UN Environment through the Cartagena Convention Secretariat as well as the

recently established Caribbean Sub-Regional Office, strong functional partnerships have been established with all of the afore-mentioned agencies. This will ensure coordination, collaboration and greater impact from the use of project resources while minimizing overlap and duplication.

Entry into force of the Land-Based Sources of Marine Pollution (LBS) Protocol of the Cartagena Convention, in 2010 committed the Governments which ratified or acceded to it to making major improvements in wastewater management. The CReW was developed to assist countries to meet their obligations under this Protocol in particular on Annex 2 which provides technical guidelines and targets for Domestic Wastewater Treatment. Under this Annex, Governments are required to introduce innovative and cost-effective treatment technologies, improve policy, regulatory and institutional frameworks, and expand access to affordable financing. Participating countries of the CReW project were supported in addressing three significant challenges that have been identified for effective wastewater management: inadequate policy and legal frameworks, insufficient financing and the low priority placed on wastewater treatment.

While the Protocol provides targets for wastewater treatment as well as effluent discharge guidelines, it does not provide standards or criteria for treated wastewater re-use and on levels of nutrients allowed in domestic wastewater discharges.
Projects such as GEF IWCAM and GEF CReW were important catalysts in enabling high level political support to the prevention, reduction and control of marine pollution. To date a total of 13 countries have ratified the LBS Protocol compared to 4 in 2005. The Secretariat to the Cartagena Convention has been able to mobilize technical and financial support to assist countries those countries who demonstrate high level political commitment in meeting the Protocol's obligations.

The development of new projects that build on previous experiences and lessons learned such as CReW+ and the political endorsement of such projects signifies the continued commitment by countries in the Wider Caribbean Region to protect their critical coastal and marine resources. While priority will be towards countries who have already ratified the Protocol, efforts will continue to ensure that all countries participating in such projects demonstrate a similar level of political commitment through ratification.

Components 1 and 2 of this project will provide support to participating countries to further strengthen national legal, policy and institutional frameworks that will enable them to fully comply with their obligations under the LBS Protocol and other relevant pollution-related agreements and targets. Based on an initial assessment of the barriers to ratification by countries in the Wider Caribbean Region under the CReW project, several political, capacity and awareness deficiencies were identified. Components 1 and 2 will support non-contracting Parties involved in the project specifically to overcome these barriers enabling ratification of the LBS Protocol by all participating countries.

High Level political support for national reforms: At a meeting of the High Level Forum (HLF) of Ministers with Responsibility for Water in 2013 in Barbados (supported by GWP-C and the GEF CReW project), 11 Ministers signed a declaration acknowledging the critical condition of wastewater treatment in the region and recommending key actions that would result in improvement to the ecosystem and socio-economic status. The support of ministers for enhancements to wastewater collection/treatment is paramount to the success of the proposed project further illustrating the 'country driven-ness' of the proposed approach. The GEF CReW project with support of IDB and UN Environment participated actively in five successive HLFs (2012 – 2016) where strong political support was pledged to the CReW+ in recognition of its ability to continue driving needed reforms in the water and wastewater sectors. The CReW+ project overall, through all components, will support this objective including benefitting from the leadership of the IDB, UN Environment and the network of regional partners developed.

Regional centres for training in wastewater management: As a direct result of the catalytic intervention by the CReW Project, the newly established Waste Management Centre at the University of Technology, Jamaica, introduced in 2015 a programme for training and certifying wastewater operators. This aims to address operational efficiency of treatment plants throughout the country and is the heart of a larger capacity development and training programme for Jamaica and other Caribbean countries. In addition, the University's Faculty of Engineering and Computing entered into an agreement with GEF CReW and the University of Monterrey, Mexico, to develop online courses to be offered to the English-speaking community in the Caribbean and Central America – thus facilitating capacity building throughout the region. In addition to the possibility of expanding course offerings in the future, the Centre is willing to work with CReW+ to develop innovative ideas for wastewater treatment, bio-materials and biofuels, all of which are areas of research currently being undertaken by them. These will be relevant to the delivery of appropriate low-cost and decentralized technological systems in Component 3 of the proposed project.

Regional Activity Centres for the LBS Protocol in Cuba and Trinidad and Tobago are key partners in the regional institutional frameworks that can provide additional support for training and technology transfer. These centres have confirmed their willingness to the partner executing agencies for the proposed project as well as to assist in the development of the full proposal. Additional collaboration is expected with the Stockholm Convention Centres in Mexico and Panama, and the BCRC-Caribbean in Trinidad and Tobago.

Integrated Water Resources Management:
Latin America and the Caribbean is a region rich in hydrological resources, with vast amounts of water for hydropower generation, agricultural and industrial activities and human consumption. Despite the significant surface resources and subsurface reserves in LAC, climate conditions (precipitation and temperature) and ecosystems vary enormously, even within small regions and territories including across the Caribbean Region. Climate impacts and uneven distribution of population across the continent is causing causes an uneven distribution of hydrologic resources, with accentuated conditions of droughts and floods. In Central America, two thirds of the population live in the Pacific watersheds, while 70% of its hydrologic resources are concentrated in the Atlantic watersheds. Within LAC countries, availability of hydrological resources may be so severe, that extended periods of droughts pose major threats. Recent droughts, as in the case of the prolonged droughts in the Caribbean (2009-2010), Argentina (2011), México (2011-2012), São Paulo (2014-2016) and La Paz (2017), have confirmed the need to address water resource availability and efficient use of water as a priority issues.

Despite worldwide recognition about the merit of an Integrated Water Resources Management (IWRM) approach, the reality with implementing water resources planning and integrated water resources management (IWRM) in the Caribbean SIDS and wider Caribbean in general have been somehow challenging despite some evident progress since Rio +20 developing integrated water resources management (IWRM) plans and water use efficiency (WUE) plans. SIDS are indeed particularly vulnerable to increased stresses on their water resources given their limited land mass, population, and water resources and challenging needs for economic development and social well-being. Therefore in SIDS as piloted in the GEF IWCAM project through the development of IWRM road maps, a 'source to sea' approach as an integrated framework is probably more relevant.

Also as recognised by many regional actors including the Global Water Partnership, in the Caribbean, given their large geographical footprint, but small and dispersed populations and land mass with similar climatic conditions that influence the availability of water resources, it makes sense to combine national initiatives with a regional approach. Indeed, the wider Caribbean is hosting some of the most vulnerable states and territories in terms of fragile economies, impact of climate change, and constrained development opportunities. Water resources management in the Caribbean is diverse in terms of organisational arrangements governing management. Some countries have dedicated ministries to water management, but in most states, water management forms just one part of a ministry portfolio, and often, responsibility is spread across more than one ministry. Responsibility for tariffs and economic regulation is rarely exercised independently of ministerial/cabinet control. In most states, water service providers also undertake water resources management. Water supply and wastewater services are undertaken by a government-owned company or statutory authority, with little independent oversight and evaluation. Little distinction is made between responsibilities for water services and water resources management as they are centralised within the same organisation. This results in a predominant supply-side model that sees water resources as an integral extension of water supply services. Programmes are therefore mostly implemented to expand provision and access to basic services, such as health care, education, and water and sanitation. As a result, the region made significant progress in water supply. Alongside with this, the public have come to expect that governments will provide services by guaranteeing financial support to ensure minimal cost to the public so that services are affordable. The problems now being encountered include quality of service, maintenance and operation of existing infrastructure, ageing infrastructure, high levels of unaccounted for water, and quality of potable water. This suggests difficulties with the management of water services and with securing the necessary levels of investment to address the supply–demand gap.

Water resources management in the Caribbean still faces challenges not only that affect water availability but also long-term freshwater security. Overall water security is an emerging challenge in the region for which the present institutional frameworks and enabling environments are increasingly ill-equipped to deal with. Despite many governments acknowledgement of the need for change and to develop plans, existing efforts to put these plans into practice have not proved sufficient. Regional management frameworks have also largely failed to get off the ground. This project will attempt to move the IWRM agenda forward focussing primarily on the aspects of integrated water and waste water management developing an Integrated Water and Waste Water Management (IWWM) framework. This IWWM framework will build on the GEF IWCAM produced IWRM road maps with some facets of its implementation being enacted thru IWECO. It will also expand on the CREW WUE plans and will take this further by having a programme supported by a new regional Freshwater Protocol. This has indeed been recognised as

a missing element by both countries and regional actors alike including the parties to the Cartagena Convention which are advocating for the development of common frameworks and standards to support the process of transitioning and reforming national water sectors.

Despite the fact that the Caribbean region shows considerable understanding of and sensitivity to the need for integration and that great impact can be seen in specific demonstration projects, usually at the community or watershed level as an integrated approach resonates with people's everyday experiences with water and their environment, there is still a need for more far-reaching reforms.

Recent research by the GWP suggests that advocacy needs to be complemented by so-called 'brokering' actions, which call for different approaches for different countries. Brokering is about recognising and reconciling the needs and aspirations of different stakeholders, particularly the politicians. Such approach calls for the formulation and approval of common regional directives and management principles embedded into a regional freshwater protocol which this project will look to establish.

b) Country Institution and Policy Baseline

Policy: There is growing recognition amongst governments in the region of the importance of holistic, national sustainable development planning. Some countries in the region have national development plans which include environmental protection with water and wastewater management included as a sub-component. For example, Guatemala has a National Plan of the Public Services of Potable Water and Sanitation for Human Development 2008-2011. In Costa Rica, a new Water Law was established in 2014 to provide the main legal framework for the use and management of water resources. Barbados' Five-year National Development Plan includes a focus on wastewater management. The Barbados Water Authority (BWA) is responsible for supplying the island, which is among one of the ten most water scarce countries in the world, with potable water as well as the provision of wastewater treatment and disposal services to the serviced areas of Bridgetown and the South Coast. The Authority is also responsible for the monitoring, assessment, control and protection of the water resources. To improve the efficiency of this sector, the Inter-American Development Bank (IDB) has provided a loan to Barbados for upgrading BWA's Water and Sanitation Systems.

Legislative and regulatory framework: Colombia, the Dominican Republic and Mexico are the countries with the most advanced legislation and supporting regulations on wastewater management. Jamaica is one of the few countries to develop sewage sludge regulations. Their 2013 Natural Resources Conservation (Wastewater and Sludge) Regulations provide the regime for regulating the construction, modification and operation of wastewater treatment facilities and the discharge of sewage and trade effluent.

Land degradation concerns, Barbados: Severe droughts have been recorded for Barbados in 1982, 1986, 1993, 1994 and 1997.[32] Domestic fresh water, which is pumped from underground aquifers, is dependent on rainfall recharge to those aquifers. Rainfall for one rainy season becomes available for abstraction the following year. Drought and prolonged over-abstraction reduces the amount available for the next year and increases the chances of saline intrusion. The country's existing water and wastewater policy, last revised in 1973, was developed to address microbiological contamination, largely because of its dependence upon groundwater sources. It restricts the use of 9% of the land, but it does not address chemical pollution and offers no protection to the marine environment (Anthony Headley, presentation, Environmental Protection Department, CReW Legal and Enforcement Workshop, February 2016). In addition, growth in eco-tourism and the establishment of a Barbados National Park System support the need for a more sustainable approach to further develop the tourism infrastructure on the island, but would also indicate more use of the particularly fragile ecosystems represented by the Scotland District and the island's gullies. Barbados is currently looking to revise its policies and strengthen its water and wastewater management framework using a more integrated approach to diagnose and find solutions to problems and including greater, regulated reuse of treated water. All components of CReW+ would be relevant.

Financial Mechanisms: The following lessons learned from the CReW project will be used for further development, replication and upscaling under the proposed CReW+: Need for a strong supporting enabling environment with adequate and mutually reinforcing legal, policy and institutional frameworks which will provide the most important incentive for public and private entities to participate in the financing mechanisms; The loan terms (interest rate, repayment period, grace period, etc.) must be established so that the terms attract investors and at the same time sustain the fund itself; Realistic tariffs are needed to for any financing mechanism to be sustainable; More knowledgeable and aware decision makers and stakeholders who appreciate the

[32] CReW Enabling Environment Case Study, 2016. The frequency of drought in Barbados is about 3 in 10 years and has been related to El Nino occurrences.

importance of proper wastewater management increase support for innovative financing schemes ant their ultimate sustainability; Efficient operation of wastewater utilities supports investments in wastewater infrastructure by maximizing the effectiveness of the facilities, resulting in an increased return on investment; Increasing awareness of wastewater issues among sectors that are not focused mainly on this issue (e.g. tourism and agriculture) will improve performance in the water and wastewater sector; • Public-public partnerships (e.g. between water/wastewater utilities and ministries of health), public private partnerships (including private firms, financial institutions and non-governmental organizations) can increase the long-term sustainability of wastewater financing mechanisms

c) GEF IW projects in the region

IDB-UN Environment GEF CReW Project has established a strong baseline of information on wastewater management in the Wider Caribbean Region having provided technical assistance and training on Wastewater financing and management to 9 English- and 4 Spanish-speaking countries. Specifically the GEF CReW project supported: (1) sustainable financing for the wastewater sector; (2) policy and legislative reforms; and (3) regional dialogue and knowledge exchange amongst key stakeholders in the WCR.

Project activities also assisted participating countries to improve compliance with their obligations of the Cartagena Convention, and in particular, its Protocol on Land-Based Sources of Marine Pollution (the LBS Protocol, 1999), for which the UN Environment Caribbean Regional Coordinating Unit (UN Environment CAR/RCU) serves as the Secretariat.

Other GEF projects in the region that will complement the proposed CReW+ in integrated water and wastewater management include the:

UN Environment / UNDP GEF Integrating Water, Land and Ecosystems Management in Caribbean Small Island Developing States (GEF IWEco) Project: This is a five-year regional multi-focal area project financed under the GEF Focal Areas: International Waters, Land Degradation, Biodiversity, Sustainable Forest Management and the GEF Small Grants Programme. This project will implement an integrated approach to water, land and ecosystems services management, supported by policy, institutional and legislative reforms, and the implementation of effective appropriate technologies to accelerate contribution to global targets on access to safe and reliable water supplies and improved sanitation. It will also contribute to improved ecosystem functioning in the Caribbean. Eleven (11) Caribbean SIDS will participate in this project which began in September 2016.

UNDP GEF Caribbean Large Marine Ecosystem + (CLME+) Project: This project covers broad areas of oceans governance including habitat restoration, pollution prevention and fisheries management. If direct relevance to CReW+ will be its work to reduce the impact of nutrients including from domestic wastewater, the restoration of coastal and marine habitats and the development of investment plans to improve the coastal and marine environment of the Wider Caribbean Region. Its activities focus on priority interventions, reforms and investments that are required to ensure the sustainable provision of goods and services from living marine resources in the Wider Caribbean Region (WCR). UN environment CAR/RCU is a partner executing agency for this project. CReW+ is also expected to support the overall long term CLME+ Strategic Action Programme approved by Governments in the Wider Caribbean Region developed under the first phase of CLME.

Latin American Water Funds Partnership. The partnership, supported by GEF in collaboration with IDB, TNC and FEMSA, is a mechanism that provides technical and financial assistance for the creation and strengthening of Water Funds. It provides support to local stakeholders to implement them, contributing to establish the management structure for each fund. It also provides advice and technical expertise that can strengthen the operation of the funds, and also facilitate the exchange of experiences and best practices among Water Funds and other stakeholders. This funding initiative (for a total of US$15 million) has mobilized more than US$130 million, mainly from private sector, with significant results: more than 130,000 hectares of forest coverage preserved; more than 200 public and private sector organizations participating in conservation projects; more than 65 million people benefiting from water source protection in critical urban watersheds. http://waterfunds.org/en/

World Wildlife Fund, Integrated Transboundary Ridge-to-Reef Management of the Mesoamerican Reef (MAR2R). This project supports regional collaboration for integrated ridge to reef management of the MAR ecoregion by demonstrating its advantages and improving regional, national, and local capacities for integrated management and governance of its freshwater, coastal, and marine resources. https://www.thegef.org/project/integrated-transboundary-ridges-reef-management-mesoamerican-reef

d) Non-GEF projects/programmes in the region

IDB's Water and Sanitation Division is currently executing more than 30 projects which support regional actions to address wastewater management (technical and financing mechanisms). Other Divisions of the Bank, such as the Climate Change and Sustainability Division, are also supporting initiatives linked to the CReW+ objectives. For example, in Jamaica, climate change effects are being addressed through a project to explore coral reef sustainability and resilience in an effort to research and address the damaging impacts of mainly nutrients from sewage and fertilizers, changes to water quality driven by construction, housing, hotels, agriculture and climate change upon coral reefs.

A very relevant new IDB operation involving integrated water and wastewater management in the region is the Water Security Program within the Water and Sanitation Framework in Panama. The program aims at improving the sanitary conditions of the population served by IDAAN through a financially sustainable long-term service, as well as at improving the country's and the operator's capacity to protect its valuable water resources.

The following ongoing initiatives are also of relevance to this project:

The Global Water Partnership – Caribbean (GWP-C) whose main goal is to operationalise Integrated Water Resources Management (IWRM) in the region. Of particular relevance is the **Water Climate and Development Programme (WACDEP)** which has developed a database of regional IWRM projects, as mandated by the joint work programme of the CARICOM Consortium on Water.

The GWP-C and the Caribbean Community Climate Change Centre (CCCCC) launched in 2016 the **Regional Framework for Investment in Water Security and Climate Resilient Development**, a collaborative framework for action to reduce carbon emissions and increase climate resilience in the water and wastewater sector. The Framework identifies needs and climate resilience programmes and projects along six thematic areas. The Framework underwent an extensive process of consultations with CARICOM institutions, development partners and national stakeholders, and is seeking concrete investments and capacity building programs to move to implementation. CReW+ (Components 1,2,3, and 5) aligns clearly with the Framework, particularly in the Framework's thematic areas involving water re-use and augmentation, and resilient and healthy water resources systems. IDB is mobilizing 2017 technical cooperation resources in support of the Framework and both UN Environment through its recently approved Freshwater Strategy and the and IDB will be ensuring complementarity between CReW+ and these existing frameworks.

The Caribbean Cooperation in Health 4 (WHO/PAHO/CARICOM) which has among its priorities safe, resilient, healthy environments to mitigate climate change, and the collection and management of data and evidence for decision-making and accountability.

The Caribbean Aqua-Terrestrial Solutions (CATS) Programme, which supports adaptive measures in agriculture, forestry and water and wastewater management in seven of the OECS SIDS that have endorsed CReW+ and funded by the German Government.

The Spanish Agency for International Development Cooperation (AECID) through the **Water and Sanitation Cooperation Fund (FCAS)** with a portfolio of 1,276 million Euros in Grant funding (which includes other donors) is mainly working to expand coverage of potable water and sanitation in Latin America and the Caribbean, and supports efforts by the governments of the region to achieve the SDGs.

III) Proposed alternative scenario, GEF focal area strategies, with a brief description of outcomes and components of the project

a. Alternative scenario

The main objective of CReW+ is, by building on the frameworks and lessons of earlier projects including CReW, to implement small-scale, local, rural, peri-urban, and community-based technological solutions for integrated water and wastewater management. The project aims to implement solutions for the improved management of wastewater that can be up-scaled and replicated so as to significantly reduce the negative impact of domestic wastewater on the environment and people of the Wider Caribbean Region and to similarly implement appropriate solutions at selected watersheds and freshwater basins to ensure greater water security for vulnerable rural communities. This will be achieved through targeted water resources conservation

measures, wastewater and water re-use, improved land use practices and greater water use efficiency. These interventions will increase resilience of local communities to the impacts of droughts and more generally to the impacts of climate change and climate variability on the water sector.

In addition to providing support to further strengthen the enabling institutional, policy and legislative environment for a more integrated water and wastewater management approach, the project will also identify and implement more context-specific, sustainable and appropriate technological solutions which address the challenges of water and wastewater management in a more holistic manner. A key aspect of this integrated approach will be creating value out of "used water".
CReW+ will respond directly to the declaration from Rio20+ of the urgent need "to adopt measures to significantly reduce water pollution & increase water quality, significantly improve wastewater treatment, water efficiency & reduce water losses" and "reuse treated wastewater" reflected in SDGs 6 and 13.

The proposed project builds upon a solid technical baseline for water and wastewater treatment, an improved understanding of the challenges faced in the policy, legislative and institutional environment, and on practical examples of success and lessons learnt in the CReW project. These lessons will guide the implementation of more integrated approaches and innovative technical solutions to local needs particularly at the rural community levels.

CReW+ will stimulate and assist countries and communities mainly in rural and peri-urban areas to identify and implement innovative technological solutions based on their specific needs and which are both replicable and sustainable in the long-term.
The incorporation of additional LD funds from STAR allocations from one country confirms the cross-cutting influence of water and wastewater management to the other focal areas of GEF such as LD. Improving water and wastewater management through integrated approaches contributes directly to other socio-economic concerns such as human health and job creation.

CReW+ will address IW and LD Focal Areas by using an integrated water and wastewater management approach. The proposed project is seeking support from the following GEF Focal Areas:

GEF International Water:

- Objective 2: Balance competing water uses in the management of transboundary surface and groundwater
    - Program 3: Advance Conjunctive Management of Surface & Groundwater Systems
    - Program 4: Water/Food/Energy/Ecosystem Security nexus
- Objective 3: Foster Sustainable fisheries, restore and protect coastal habitats, and reduce pollution of coasts and LMEs.
    - Program 5: Reduce Ocean Hypoxia
    - Program 6: Prevent the loss and degradation of coastal habitat

The project will support regional and national actions to reduce nutrient pollution, improve marine and coastal ecosystems, and reduce health and environmental risks in the Wider Caribbean Region with multiple benefits to ecosystem, socio-economic activities, and assist with the compliance with the LBS Protocol of the Cartagena Convention as well as achieving the SDGs in particular SDG 6 and 14.

The project will reduce pressures on natural terrestrial and marine resources from competing land uses in the wider landscape including through the reuse of sludge as a soil enhancer and fertilizer, as well as other opportunities to maximize water and wastewater reuse opportunities not detrimental to environmental and human health. This will lead to increased water water/food/energy/ecosystem security.

The project will address water security through the incorporation of freshwater protection (water source protection, pollution prevention, increased efficiencies in water use, etc.), especially considering climate stressors such as increased temperatures and declining precipitation resulting in increased frequency and intensity of droughts in the region.

<u>GEF Land Degradation</u>

- Objective 1: Agriculture and Rangeland Systems: Maintain or improve flow of agro-ecosystem services to sustain food production and livelihoods).
    - Program 1: Agro-ecological intensification.
    - Program 2: SLM for climate-smart agriculture.

The project aims to implement small-scale, local, rural and peri-urban and community based solutions, such as: constructed wetlands for rural wastewater treatment; reuse of treated wastewater for agriculture; and the utilization of sludge from domestic wastewater as a natural fertilizer).

CReW+ will provide resources and expert input to assess and strengthen the national policy, legislative and institutional frameworks of participating countries to manage water and wastewater more effectively and in a more integrated manner. In so doing it will build upon the work of the CReW, IDB and UN Environment in the region.

Significant financial investments are still needed to reduce the amount of untreated or partially treated wastewater impacting water resources - surface water, groundwater and the Caribbean Sea. Impacts on economies and human health continue to be significant as well as the damage to coastal and marine ecosystems including degradation of coral reefs, mangrove swamps and seagrass beds. While much of the investment will need to come from national budgets and development assistance, the CReW+ is well placed to implement solutions at a more local scale while establishing a framework to ensure the impacts of all investments are sustained.

CREW+ builds upon the experiences and lessons learnt in the CReW Project, country priorities and emerging issues concerning water, wastewater management and achievement of the Sustainable Development Goals. With the added focus on improving watershed and freshwater basin management and water security, the project will expand on the core partnerships developed from CReW in particular with the private sector. CReW+ also involved wider participation from countries of the Wider Caribbean Region ensuring greater regional impact and transboundary cooperation. **A broader range of solutions will be employed, taking into consideration the diversity which exists in terms of the countries' sizes, situations and challenges.**

CReW+ will aim to:

- Identify a **suite/menu of innovative financing mechanisms for water resources management mainly for rural and peri-urban communities.**
- Identify **new technologies for treating wastewater in rural areas** where cost issues and sustainability may be a problem.
- Cater to **country specific /local waste water solutions** (depending on size, culture, capacity)
- **Promote a more integrated approach to water and wastewater management,** highlighting the negative effects of untreated wastewater, as well as the importance of watershed and freshwater basin protection, water conservation and efficiency, treated water reuse; and frameworks that maximize reuse opportunities especially by the private sector.
- Improve freshwater security especially in vulnerable communities through conservation of water sources - surface and groundwater, reduction of land-based pollution including from untreated wastewater, and improvements in management and final end-user consumption.
- Ensure that as many of the participating countries benefit from community and/or national level interventions with regional capacity building and knowledge management providing additional technical support for areas of greatest common need.
- **Promote sustainability at both national and regional levels through comprehensive consultation, education and communication activities.** Provide adequate opportunities for consultation and developing information products geared to various audiences (including the development of a supporting database) due to the complex, multi-sectorial nature and range of stakeholders already involved and those impacted by the poor water and wastewater management.

b. CReW+ Components, Outputs and outline activities

The CReW+ recognizes differences in readiness amongst countries throughout the Wider Caribbean Region to design and implement sustainable financing mechanisms and respond effectively to the challenges of wastewater management and watershed protection. The project design reflects this differential approach to ensure that investment of GEF funds results in the greatest impact. The basis for selection of national interventions will be based on an initial assessment of the institutional readiness of countries to implement integrated water and wastewater management solutions, water source protection and efficient use of water.

This will allow the project to directly address the greatest needs and challenges in each of the countries and therefore significantly advance water and wastewater management approaches. In countries that participated in the GEF CReW Project, support will be mainly for on-the-ground interventions with the greatest potential for replication and upscaling.

The following provides an overview of the rationale for each of the proposed components and an outline of the expected outputs and indicative activities:

Component 1: Institutional, policy, legislative and regulatory reforms for Integrated Water and Wastewater Management (IWWM).

Rationale of the Component: This component provides capacity building support for the further development and strengthening of national legal, regulatory, policy and institutional frameworks. This will enable countries to better design and implement broader and more integrated national and community-based solutions for water and wastewater management. It will also facilitate more harmonized regional approaches in meeting agreed regional and global water and wastewater related goals and targets. This support will be critical for countries to develop, upscale and/or sustain their national innovative financial mechanisms for water and wastewater management. The importance of enhancing the national enabling environment to ensure the long-term viability of financing mechanisms will not only focus on the water and wastewater sectors but will build synergies with related sectors such as tourism, health, agriculture and energy.

Under the "circular economy of water" the economic and environmental benefits of wastewater management and reuse go hand-in-hand hand with the protection and efficient management of existing water stocks in watersheds and freshwater basins. The work done under this component will enable more effective implementation of existing water and wastewater management plans, assist in the development of new national/municipal/ local integrated land use, water and wastewater management plans and facilitate their longer-term sustainability. Critical to these reforms will be support to more participatory processes involving national and regional consultations among key stakeholders in order to produce a set of country-specific and harmonized regional recommendations. This will be especially critical to the proposed development of a new Protocol on the management of Freshwater resources within the framework of the Cartagena Convention. Such a protocol will form a framework for a harmonized approach to the protection of watersheds, freshwater basins, surface water and ground water resources and will improve transboundary cooperation on water and pollution related issues.

This component will be both crosscutting and multi-sectoral in nature and seek to better understand, communicate and enhance the linkages between economic sectors. This will ensure that all participating countries are better able to implement more effective and integrated water and wastewater management approaches. This component will assist countries in greater application and use of regional appropriate criteria and standards in areas such as wastewater treatment and reuse based on experiences in other regions and from other GEF projects. It will also establish complementarity with legal and regulatory instruments for water source protection, including norms and standards addressing land use conservation (for surface and sub-surface water protection), efficient use of water, and water quality, among others.

This component will contribute several specific reform activities including:

i. Conducting targeted and institutionalized training through technical assistance and technology transfer including:- professional exchanges and certification of water and wastewater operators; operation and maintenance of water and wastewater treatment plants; training manuals and support for social entrepreneurship, institutional capacity and financial assessments; partnership with training institutions to enable further development and enhancement; and institutionalization and/or up scaling of national and as appropriate regional training programmes, including online and face to face courses, and programs to strengthen national and regional laboratory capacity to enhance evidence-based decision making.
ii. Strengthening national legal, regulatory and enforcement frameworks for integrated water & wastewater management, including adherence to new criteria and standards for water protection, water use and reuse.
iii. Incorporating Strategic Environmental and Regulatory Impact Assessments (SEAs & REAs) which will assist in ensuring greater compliance with new water and wastewater related policies, legislation and regulations while identifying opportunities for voluntary compliance especially by the private sector through appropriate policy and economic incentives and disincentives, codes of practice and others.
iv. Supporting the possible development of a new Protocol on Freshwater within the framework of the Cartagena Convention while continuing to facilitate more effective implementation of existing obligations under the Convention and in particular the LBS Protocol. Activities will assist governments in meeting other relevant regional and global targets such as the Sustainable Development Goals. Countries which have not yet ratified will be provided targeted support to overcome existing political, technical and capacity barriers to ratification and subsequent implementation of the LBS Protocol.
v. Establishing frameworks for greater engagement of private sector at both national and regional levels targeting in particular the tourism industry and water and wastewater utilities. This will include establishing codes of practice for industries and providing support for developing business cases/models to facilitate greater private sector involvement in innovative sanitation solutions, watershed and freshwater basin protection, treated wastewater reuse etc.

vi. Establishing national and regional data and information management systems including systems for data collection, analysis, interpretation, sharing and data maintenance. Existing national and regional systems for water and wastewater management will be rationalized including integration, consolidation, harmonizing of methods (system for sharing and maintaining data). Issues of data quality and quantity, gaps, and response mechanisms including new guidelines, regulations will be identified and implemented.

vii. Engaging High Level Political, Industry, Civil Society and Technical support to ensure commitment through education, awareness raising, attitude and behavioural change and knowledge management processes. This will support longer term sustainability of all reforms implemented. This will also entail use of existing national and regional decision-making mechanisms and identification of appropriate national and regional champions.

Component 2: Sustainable and tailor-made financing options for urban, peri-urban and rural Integrated Water and Wastewater Management (IWWM).

Rationale of the Component: This component will focus upon the countries readiness for future establishment and development of sustainable financing mechanisms for wastewater management. Diagnostics conducted in all participating countries will lead to customized documentation and recommendations regarding existing financing mechanisms for IWWM at local, national and regional levels, and make recommendations regarding the most appropriate sustainable financing mechanisms for IWWM at local, national and regional levels, depending upon their context, circumstances and size.
Component 2 will develop financial action plans and business models at national/local/community/rural levels to enable more effective IWWM approaches and long-term sustainability of the mechanisms established. The component will provide analysis and recommendations on available financing models and mechanisms, including revenue streams, payment for ecosystem goods and services, taxes, tariffs, polluter fees, Blue Bonds and Debt Swaps for Environment and the appropriateness of these models for application at community, local, national and regional levels. Consideration will also be given to developing a wider funding base to support on-going and future integrated water and wastewater investment and freshwater source protection in watersheds and freshwater basins. This will include development of strategic partnerships with the private sector, including and beyond traditional funders, development of local and national resource mobilization strategies, soliciting pledges and offers of financing, support for new proposal development, financial and economic research, donor mapping, outreach and advocacy, and new partnership frameworks. Training will be provided to selected target groups and agencies in the design, establishment and management of the various financial mechanisms developed.

Component 2 will also work in consultation with different stakeholders at rural level to provide appropriate innovative approaches to address IWWM with particular emphasis upon what is needed to ensure sustainability. This includes incorporating Payment for Environmental Services schemes that will transfer resources for water source conservation.
Additional activities will include: technical studies of different innovative financial solutions; professional exchanges and certification; manuals for various needs including operations and maintenance; advocacy and support for social entrepreneurship; national and regional level workshops on various topics, e.g. social entrepreneurship, watershed protection, treated water reuse and the water cycle (developed, assessed, enhanced, up-scaled and institutionalized towards better sustainability).

Component 3: Provision of innovative small-scale, local, rural, peri-urban and community-based solutions for IWWM.

Rationale of the Component: This component will provide for improved wastewater treatment (including reuse) in selected rural and peri-urban hotspots using innovative IWWM solutions and interventions seeking complementarity between IWWM solutions and water protection and water management practices at a watershed level.
This component will provide information and advice to all participating countries on a range of innovative technologies appropriate for small-scale solutions, supported by technical assistance to address smaller-scale, local and community-based projects, meeting the needs of rural or small urban communities. As innovations in wastewater treatment and reuse are being developed throughout the program, there is growing concern about how scarce water resources are being protected in order to guarantee the livelihood of populations and economic activity in a given watershed. Therefore, this component will support activities for improved freshwater source protection and efficient use of water in five (5) selected rural and peri-urban hotspots.

Specific interventions could include recycling and wastewater management through micro, small and medium enterprises. Public consultations with local stakeholders will be facilitated to enable local input and increase sustainability of solutions. Diagnostics in the participating countries will result in specific recommendations regarding appropriate technical options for application in specific contexts to address IWWM, including prevention and reuse. The technical solutions recommended at the local and

community level will be evaluated, and at least 50% of the interventions will involve low-cost innovative technologies that have proven to be very effective in treatment and reuse, and with very low operational and maintenance costs (See Section VI on innovation and scalability). Innovative and community-based solutions to the application of both technology and funding will be sought (e.g. community/rural specific financing action plans), such as constructed wetlands to treat wastewater from a group of dwellings.

Emphasis will be placed on technology that provides low cost and low operation and maintenance solutions, in order to enable sustainability of the intervention. Potential for replication and upscaling would be considerations/criteria in the selection of technology, and appropriate and feasible funding disbursement methods could be considered, e.g. the possibility of using existing entities. Local programmes to introduce skills training to enable community participation and maintenance of solutions will be undertaken.

Training will also be provided to improve operational and maintenance capacities, procurement, tendering and contractual processes. Replication plans will be developed and implemented. Experiences from local interventions will be documented for information sharing at the national and regional levels. Partnerships with existing programmes and projects will provide opportunities for useful interventions particularly those which are compatible with their initiatives.

In order to support improved protection of watersheds, freshwater basins including surface and groundwater resources, support will be provided to land conservation and other land uses that are compatible with water source protection; increased efficiencies in water end use (remains end use consumption); iii) allocation of treated effluents to various activities in accordance to water quality parameters required by different consumptive types; iv) Creation of a system of incentives for water conservation and reuse; and v) Implementation of pollution prevention, reduction and control measures so as to ensure greater water security and safety.

Component 4: Knowledge Management and Advocacy on the importance of Integrated Water and Wastewater Management (IWWM) in order to achieve the Sustainable Development Goals.

Rationale of the Component: This component will document lessons learnt, experiences and good practices, and will assist in managing project outputs so that they are accessible publicly. It will also provide communications support to internal and external partners, stakeholders and the wider public on all components and activities of the project.
Interventions at national and community levels will be preceded by stakeholder identification and assessment. These early consultations will follow best practices in stakeholder management and participation. This is especially important where innovative technologies are being considered to for implementation in local communities, and where prevailing attitudes and cultural perspectives are critical. Effective engagement will contribute to success and long-term sustainability of the solutions implemented.

Knowledge, Attitudes and Practices Surveys for key target audiences will be conducted early on to enable design and implementation of a comprehensive communications strategy in support of CReW+ objectives. Emphasis will be placed on watershed protection, water use efficiency, reuse of treated water, land-use planning and pollution prevention, reduction and control.

The communications strategy will have both internal and external audiences, with a Community of Practice established at the beginning of project implementation (perhaps as early as in project preparation phase) to promote internal communications and to facilitate learning and exchange amongst project partners. This component will support partnerships development and strengthening at local, national and regional levels to increase impact of the project. Training materials will be made available online and via different media for use by a wider audience and beneficiaries. It will also be developed to enable application through a “training of the trainer” approach. This would ensure a multiplier effect increasing overall exposure and awareness. Evaluation would be via questionnaires sent after training to capture any follow-up training conducted by participants. This component will also provide training in support of Components 1, 2, and 3.

The documentation and sharing of experience, lessons learnt and best practices from all components with inputs from internal and external stakeholders will be a major focus. The approach will be informed and assisted by the IDB Knowledge Division expertise (especially in terms of project management experience and lessons) as well as GEF IW: Learn tools (e.g. the GEF Practitioners Guide to Mainstream Knowledge Management into Project Design). This component will also be responsible for

updating of the CReW Clearing House Mechanism, which will include all project outputs as well as the regional IWWM database to be developed under Component 1.

IV) Incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF, CBIT and co-financing

GEF funds for the CReW+ project will provide incremental value across a range of project interventions and it will help continue the momentum of removing the financial, technical and institutional barriers that the Caribbean region faces and adopt a more integrated approach to ecosystem management with a principle focus on integrated water resources management. Project activities will not only create additional incentives for water utilities to consider wastewater projects on a stand-alone basis, or as part of a larger water/wastewater capital improvement plan, but also reduce nutrient loading, soil loss, sediment fluxes and pollution of vulnerable freshwater resources. The food, water and energy nexus component of this project will provide tangible outcomes especially for improving food and water security, making the region more climate resilient and reducing vulnerability of rural communities to the environmental and health related-impacts of poor wastewater treatment, improper sanitation, limited availability of safe and secure freshwater supplies. Reduced water-borne diseases and improved ecosystem health will enhance the regions capacity to meet the Sustainable Development Goals, in particular Goal 6 (water and sanitation) and Goal 14 (life below water). The GEF resources will also assist countries directly in overcoming remaining barriers to ratification and effective implementation of the Land-Based Sources of Marine Pollution (LBS) Protocol.

The activities of the proposed project will build on a strong baseline of: (i) investments completed and ongoing in support of watershed management, freshwater basin protection, and integrated water and wastewater management; (ii) technical assistance provided through non-reimbursable technical co-operations through IDB. These grant funds have supported the development and the implementation of projects in areas such as capacity building, governance, institutional strengthening, improving coordination with other economic development sectors, production of knowledge products etc. In 2017, the amount allocated to IDB CReW+ participating countries for TC´s in the region is approximately US$8 million.
Currently, IDB is channelling TC resources, in the order of US$1 million, for a new initiative, the Caribbean Islands Sustainable Development Platform, in support of action plans, institutional capacity building programs, and a facility (the Sustainable Islands Facility -- SIF) with investments to mobilize public and private sector resources investments, all aligned with the SDGs and Climate Paris Agreement in the Caribbean basin; (iii) developed and adopted national action/implementation plans for the Cartagena Convention and its three protocols, including the Land-Based Sources of Marine Pollution (LBS); (iv) regional initiatives promoting coordination for integrated water and wastewater management – for e.g. - Global Water Partnership–Caribbean (GWP-C), the Caribbean Water and Wastewater Association (CWWA), the Caribbean Water and Sewerage Association (CAWASA), the Caribbean Public Health Agency (CARPHA, formerly the Caribbean Environmental Health Institute), University of the West Indies (UWI) and through the work of both the IDB and UN Environment; and (v) financial mechanisms in the region, designed for the protection of water sources in critical watersheds, based on joint public-private partnerships, such as the Water Funds under a joint IDB/TNC/GEF/FEMSA initiative (Latin American Water Funds Alliance), which originated with a US$15 million contribution from the partners and managed to mobilize over $130 million for 20 Funds throughout the region.

Under the business as usual scenario, on a regional scale, the future development of interventions to improve water and wastewater management in the wider Caribbean region will continue to be fragmented in the absence of a more integrated and holistic vision for water resources management. This vision would need to consider the need to: (1) Protect freshwater resources through improved land use; (2) Improve efficiency in the use of existing water resources; (3) Reduce pollution of freshwater resources and the coastal and marine environment from the discharge of untreated domestic wastewater; (4) Identify a broader suite of financial options for both rural and national level interventions and; (5) Identify and implement innovative technological solutions for water conservation, wastewater management and re-use of treated wastewater that are cost-effective and sustainable and offer the greatest opportunity for replication and upscaling.

The GEF presence and intervention in a project of this nature, which includes eighteen GEF eligible countries, is critical because it will help enhance **national development strategies and plans** to better incorporate multi-sectorial approaches to Integrated Water and Wastewater Management (IWWM). The development of integrated national and regional platform/databases for IWWM will furthermore ensure more efficient use of financial, technical and human resources resulting in greater impacts at local, national and regional levels. Training for selected persons and agencies to drive national and regional reforms and for reporting on relevant SDGs and MEAs, will enhance regional and national coordination and information exchange and encourage more science based decision-making resulting from the use of the platform/database for IWWM.

Documentation and recommendations regarding existing financing mechanisms and appropriate structures to operate financing mechanisms for IWWM at rural, local, peri-urban, national and regional levels are needed in order to enhance stakeholder understanding of the different financing mechanisms and options available. These alternative funding options, financing action plans and business models supported by audience-specific training in the design, establishment and management of the financial mechanisms will improve the overall capacity of the countries to design and manage sustainable financing mechanisms.

This project, and with it the incremental funding requested from the GEF, offers a unique opportunity to develop and implement a range of country specific, customized recommendations for specific management approaches for IWWM including most cost-effective and sustainable solutions, as well as opportunities to maximize water reuse, protect water sources, and increase efficiencies in water use by various sectors while improving resilience to climate variability and climate change in particular drought conditions.

Training will also be provided in the operation and maintenance of wastewater facilities, procurement, tendering and contractual processes in addition to IWWM. This will enhance technical knowledge for the successful implementation and replication of proven solutions, including treated water reuse, safe reuse and/or disposal of bio solids, and improving water and wastewater management at small-scale, local and community levels.
A comprehensive communications strategy, an updated CReW clearinghouse mechanism, the development and implementation of information exchange mechanisms for the wider GEF portfolio and non-GEF projects will improve regional awareness of the importance of IWWM by local communities, civil society, the public and private sectors and importantly at the political and decision-making levels of Government.

The GEF grant of US$17,764,153 for this project will cover the incremental costs needed against a solid base funding of US$148,112,617 provided through co-financing contribution from IDB, UN Environment and their partners. The proposed activities are supported by the participating countries and they are providing contributions that are also essential to assist with the mainstreaming of the approaches developed into national policies to promote and sustain the pilot interventions and to enable the capacity strengthening supported by the GEF Grant to be sustained. In addition, several regional agencies including CARPHA, CAWASA, CWWA and TNC will be supporting the project through in-kind co-financing. It is expected that in the PPG phase, other organizations including private sector (e.g. tourism sector, private water supply companies), will be included in discussions to formulate the full project document. In particular, synergies with ongoing and future IDB-funded financing are present and blended with the project.[33] Opportunities for blending GEF CReW+ and IDB resources will be identified and explored in detail during the Project Preparation Phase.

During the development of the full-size project proposal, efforts will continue to mobilize additional co-financing from the private sector and in particular from the tourism sector. During the PPG stages and, subject to approval, the implementation phase, the project will continue to build upon and establish synergies with ongoing GEF and non-GEF projects relating to water and wastewater management in the region.

V) Global environmental benefits (GEFTF) and/or climate mitigation-adaptation benefits (LDCF/SCCF)

By promoting and supporting more integrated water and wastewater management in the WCR, the project would be helping to ensure that resources applied to water and wastewater management go further, i.e. the benefits are seen across several related sectors such as Energy, Agriculture, Fisheries, and Health while improving resilience of all of these sectors to climate change and variability. The environmental benefits obtained from implementing an integrated approach to water and wastewater management would be seen in the IW and LD focal areas. The proposed project will also contribute to Aichi targets 8 (Reduce pollution), 10 (Minimize Reef loss), and 14 (Restore Ecosystems).

The following global environmental benefits are anticipated: (i) improved marine and coastal ecosystems functioning as a result of investments and policy/legislative reforms, (ii) improved well-being of people whose livelihoods depend on coastal and marine ecosystems functioning to sustain their productive activities (fisheries, tourism, etc.); (iii) enhanced pollution control in the Caribbean Basin (coastal and marine waters) by leveraging resources for investments in land-based pollution reduction as well as through the removal of technical, institutional, policy, regulatory and financial barriers to such investments (iv) conservation of globally significant biodiversity, (v) improved governance and protection of freshwater resources (surface and ground water) at the watershed/freshwater basin level, (vi) GHG emission reduction and climate resilience resulting from integrated water and

[33] See Annex 3 for the list of on-going IDB-funded projects

wastewater management, (vii) increased water security, and improved access and availability of safe and adequate water supplies resulting from improved watershed management practices, increased climate resilience/adaptation capacity (in particular to rising temperatures, declining precipitation, and increased frequency and severity of droughts);(viii) reduce pressures on natural resources from competing land uses in the wider landscape including through the reuse of sludge as a soil enhancer and fertilizer; and increase opportunities to maximize reuse that is not detrimental to environmental and human health, and that promotes the water/food/energy nexus.

VI) Innovation, sustainability and potential for scaling up

The CReW+ is expected to demonstrate innovative technical, training and financial solutions for enhancing and expanding wastewater treatment capacity and safeguarding freshwater resources in the Caribbean. This will be achieved through: Financial Mechanisms (mainly through business models, financial mechanisms for different economic sectors and at different scales, by exploring approaches such as integrated cost recovery, by promoting one-water as a resource, and by promoting multipurpose facilities and the water-energy-food-climate nexus); Funding options (mainly through innovative means to obtain funds from alternative sources such as property taxes, environmental taxes, payment for ecosystem foods and services, and taxes on tourism, and not just through tariffs and government subsidies); Training (through more online training at a national level, MOOCs and more formal programmes for certification and accreditation); and Technical Solutions coupled with the potential value of waste water in the technologies being implemented, upscaling and replication of technology, seeking to achieve sustainable closed cycle projects (one water). Natural treatment processes will be prioritized, using innovative technologies with low levels of investment and low operational and maintenance costs for removal of pollutants and reuse of treated effluents. Examples are constructed wetlands, reed beds, sand filters, stabilization ponds, treatment and anaerobic sludge blanket digestion systems. Reuse technologies such as composting, agricultural irrigation, methane production during anaerobic processes and grey water reutilization will be incorporated in the solutions appropriately. Proposed measures for protecting watersheds and freshwater basins including surface and ground water resources will consider community level land-use planning which promotes long-term sustainability and reduced vulnerability to Climate Change.

Sustainability and the potential for scaling up will be encouraged through: the development of inventories of financing options; rural/community specific financing action plans; country specific business models; the institutionalization of business plans at local and national levels, and plans for upscaling/ replicating to guarantee continuity; use of payment for ecosystem benefits (PES) and payments for improved property value resulting from wastewater treatment and/or protection of watersheds and freshwater basins; and development of a regional database for Integrated Water and Wastewater Management, including the protection of water sources and increased efficiencies in water use.

Two fundamental aspects of this scaling-up approach are: improvement of the enabling environment through policy, legislative action, institutional engagement and greater investments; and the identification and deployment of technological options (mostly decentralized) that offer the most potential for replicability and sustainability. The Caribbean Platforms for Wastewater and Nutrients Management whose development was catalysed by the GEF CReW Project in collaboration with the UN Environment Global Programme of Action will further assist in replication and scaling up within the Wider Caribbean Region.

2. STAKEHOLDERS.

Will project design include the participation of relevant stakeholders from civil society organizations (yes ☒ /no☐) and indigenous peoples (yes ☐ /no☒)? If yes, identify key stakeholders and briefly describe how they will be engaged in project preparation.

The project is being developed for eighteen countries, from larger mainland states to SIDS. Activities to be implemented in each country will determine the particular stakeholders to be consulted. While actions to improve the policy, legislation and institutional environments will, for example, target decision-makers within ministries, utilities and relevant sectors, those aimed at improving local communities through innovative watershed protection and wastewater treatment will target existing community-based organizations and groups.

CReW worked mainly with stakeholders in the water and wastewater sector at both national and regional levels, due to its focus on the enabling environment and the development of Sustainable Financing Mechanisms (SFMs). Given the multi-sectorial nature of water and wastewater management, this often meant consulting via nationally appointed committees or inter-ministerial committees through national and community level consultations. CREW+ is expected to include more consultation with local stakeholders in rural areas due to the range of innovative technologies to be introduced and activities to safeguard freshwater resources at source. It will also include more consultation with the private sector (i.e. industrial groups and

associations) directly responsible for contaminated effluents and whose involvement in treatment and final discharge in wastewater streams is critical.

Efforts to introduce treated water reuse projects at local level entailed throughout CReW widespread consultation with various stakeholders, such as farmers and community-based organizations. Among the lessons learned from CReW include the need to engage stakeholders early on and provide them with training in various skills needed for a successful implementation, sustainability and replication. Efforts will also be made to include academic institutions, due to their important role in the development of course material and the implementation of the training sessions. For additional information on stakeholder mapping, see Annex 2 (Stakeholder Groups and Role in CReW+).

3. GENDER EQUALITY AND WOMEN'S EMPOWERMENT.

Are issues on gender equality and women's empowerment taken into account? (yes ☒ /no☐). If yes, briefly describe how it will be mainstreamed into project preparation (e.g. gender analysis), taking into account the differences, needs, roles and priorities of women and men.

While there have been improvements in most Caribbean countries since 1990 with more people gaining access to running water and toilet facilities, women in particular continue to be affected by the lack of sanitation facilities in both rural and urban areas of the Caribbean, as seen, for example in a squatters' community in St. John's, Antigua where poorly maintained communal latrines, without doors, are used by both men and women. During the preparation phase of CReW+, a detailed needs assessment of all stakeholder groups including the roles of women and men will be conducted to ensure that no groups are excluded and that there is active involvement in the project design, execution and the resulting benefits of the project. Capacity building efforts in local and community level interventions in Component 3 will be required to consider the particular needs of women in looking at solutions and providing them with the training for leadership for improved water security, sanitation, wastewater treatment and treated water reuse. In all project components, the implications of planned actions (from legislation, policies and programmes) upon both women and men will be considered and activities will be in line with the GEF Gender Mainstreaming and Gender Equality policy
(https://www.thegef.org/sites/default/files/publications/Mainstreaming_Gender_Eng_3.pdf)

Public awareness activities will seek to build awareness of how the provision of water and sanitation services impacts both men and women with targeted programs and outreach products that are gender sensitive.

4. RISKS. ***Indicate risks, including climate change, potential social and environmental 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 (table format acceptable).***

Risk Statement	Risk Level	Risk Mitigation Strategy
Governance structure	Low	Steering Committee and/or other project bodies meet periodically and provide effective direction/inputs
Stakeholder involvement. Domestic wastewater management is not a priority shared by all stakeholders in the region	Low	By enabling the private sector and civil society organizations through demonstrating the benefits of improving wastewater management
Limited political will of participating governments to push the implementation of the necessary pollution reduction measures at both national and local levels.	Medium	Encouraging leadership by National Agencies and working from project inception in finding champions at country and regional levels
Negative impact of governmental changes in one or more countries. Often a political change at government level leads to changes of technical leadership and discontinuation in an on-going project or process.	Low/Medium	Involving the with ruling and opposition parties constituency representatives, municipalities, others agencies and sectors when developing legislations and policies, as well as consultations and ensuring a multi-sectorial approach to the process
Social, cultural and economic factors	Medium	Social or economic issues or changes pose challenges to project implementation but mitigation strategies have been developed including use of partners who have already established a relationship with key stakeholders.

Cultural resistance to accept new wastewater management measures.	Medium	Communicate information to the general public on new wastewater measures in a way that is sensitive to local cultures and demonstrates direct benefits for the implementation of these new measures.
Hazard and climatic events, especially hurricanes are threats to the project. For example, hurricanes could delay project start up, impact on construction of facilities especially when located in low lying or coastal areas.	Medium	This is a regional project which will involve activities located in various geographical areas; therefore, threats are not concentrated i.e. Any climatic event that may happen in the region will affect a low number of participating countries. Appropriate disaster-preparedness measures will be implemented for local project sites and efforts will be made to ensure that proposed solutions are as resilient as possible.

5. COORDINATION. ***Outline the coordination with other relevant GEF-financed and other initiatives.***

The Secretariat for the Cartagena Convention as the Regional Seas Programme for the WCR in Jamaica is well placed to facilitate effective coordination with other GEF and non-GEF national and regional initiatives. This will be supported by the recently established UN Environment Caribbean Sub-Regional Office in Jamaica and UN Environment Regional Office for Latin America and the Caribbean in Panama as well as the presence of IDB National Offices and Water and Sanitation Specialists in many of the participating countries. This coordination which has been enhanced with other UN Agencies through the multi-country UNDAF Process and through the joint implementation of projects and activities in partnership with development banks, Global Multilateral Environmental Secretariats and other regional partners and agencies.

The project will collaborate with the GEF funded IWEco project to ensure synergies on Water Resources and Wastewater Management, and with GEF IWEco, World Bank/GEF Caribbean Regional Oceanscape Project (CROP) project and UNDP/GEF CLME+ projects to promote joint capacity building and knowledge exchange, building on partnerships and networks already established in the Wider Caribbean.

Through collaboration with PAHO and CARPHA, this project will support more integrated approaches to water and wastewater management that also support national and regional public health priorities.

Through the Caribbean Water and Wastewater Association (CWWA) and UN Environment GPA and the Caribbean Platforms for Wastewater and Nutrients Management, the project will continue to enhance the collaboration established with both in capacity building and influencing policy and decision making on water and wastewater management in the Caribbean.

The Global Wastewater Initiative (GWI) in particular which forms the broad framework for the Caribbean Wastewater Platform is of added relevance as in being a multiple stakeholder platform offers CReW+ the opportunity to exchange experiences at the global level, establish relationships with new partners working in wastewater management, and work collectively to identify innovative sustainable solutions. This platform offers the project a unique opportunity to learn how other regions have approached major water and wastewater management issues, challenges, opportunities and benefits such as wastewater reuse, nutrient removal and biogas production. In addition, the project will continue to collaborate in capacity building and to seek opportunities to influence policy and decision making on water and wastewater management.

Global Water Partnership – Caribbean (GWP-C) the project will collaborate with them in exchange of information to the Caribbean Integrated Water Resources Management Projects and Initiatives Database they are developing.

CATS- the project will ensure close collaboration especially on activities relating to water and wastewater management.
The CReW+ during the PPG Phase will continue to coordinate activities and build new relationships that will support integrated water and wastewater management in the region.

6. CONSISTENCY WITH NATIONAL PRIORITIES.

Is the project consistent with the National strategies and plans or reports and assessments under relevant conventions? (yes ☒ /no☐). If yes, which ones and how: NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, etc.
The high global priority for improving provision of safe and secure water supplies, sanitation and wastewater management has been reflected in the Millennium Development Goals (MDGs), the Johannesburg Plan of Implementation (JPOI) and the

Sustainable Development Goals (SDG) 6 and 13. The declaration of the SIDS Accelerated Modalities of Action [S.A.M.O.A.] Pathway (Samoa, 2014) recognizes the importance of wastewater treatment in SIDS which is also recognized by the GPA's Global Wastewater Initiative (GW2I) and Global Programme of Nutrient Management (GPNM).
The particular challenges for wastewater management and safeguarding of freshwater resources in Caribbean SIDS has been further articulated in the SIDS POA (Barbados 1994) and the Mauritius Strategy of 2005. Most of the major urban centers and rural communities of Caribbean SIDS are located in coastal areas, so in responding to wastewater management needs there must be careful consideration of existing and proposed land use, choice of appropriate technology, reducing negative impacts on human health and the environment, and evaluating insurance risks and the ability of persons to pay for the wastewater treatment services provided.

Freshwater resources - surface water and groundwater are also impacted by pollution from untreated wastewater, poor land use practices and lack of an integrated approach to water and wastewater management.

At a meeting of the High Level Forum of Ministers with Responsibilities for Water in 2013, 11 Ministers recommended key actions to improve water and wastewater management in the region based on lessons learned from the CReW project.

a) Relevant Regional/Global agreements include:

The Cartagena Convention:

The Convention includes three technical Protocols on oil spills, pollution and marine biodiversity that are all legally binding for the Caribbean region. The most relevant to the CReW+ is the Protocol Concerning Pollution from Land-Based Sources and Activities (LBS Protocol). As of July 2017, following CReW+ countries have ratified the LBS Protocol: Belize, Costa Rica, the Dominican Republic, Guyana, Panama, Saint Lucia, Trinidad & Tobago and Jamaica. For those Countries signatory to this agreement, this project will help them to meet the established targets. CReW+ will also support activities that both encourage and enable additional countries to accede to the Protocol during its implementation.

UN Convention to Combat Desertification and Land Degradation (UNCCD) - National actions:

Every CReW+ participating country is a party to UNCCD and National Action Programmes (NAPs) have been formulated by Barbados, Colombia, Costa Rica, Cuba, Dominican Republic, Grenada, Guatemala, Guyana, Honduras, Jamaica, Panama and Saint Kitts and Nevis. Several Sub-Regional Programmes (SRAPs) have also been launched and further implemented including, Dominican Republic and Colombia.

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

The proposed CReW+ project is consistent with the requirements and priorities of the participating countries (Barbados, Belize, Colombia, Costa Rica, Cuba, Dominican Republic, Grenada, Guatemala, Guyana, Honduras, Jamaica, Mexico, Panama, St Kitts and Nevis, Saint Lucia, St Vincent and the Grenadines, Suriname, and Trinidad and Tobago) and, their regional and global commitments to not only the conventions highlighted here but others which contribute to environmental sustainability.

7. KNOWLEDGE MANAGEMENT. ***Outline the knowledge management approach for the project, including, if any, plans for the project to learn from other relevant projects and initiatives, to assess and document in a user-friendly form, and share these experiences and expertise with relevant stakeholders.***

The distillation of lessons learned and best practices from the Project experience will be fundamental and will produce several information and briefing materials or products. These would include periodic briefing papers, case studies and experience notes – following IW: LEARN and IDB Knowledge Division formats. Based upon what was done in CReW, the following will be done: distillation of lessons learned and best practices from Project experiences during implementation; preparation of periodic briefing papers, case studies and experience notes – following IW: LEARN and IDB Knowledge Division formats, capturing key learning from all Components; and longer, more holistic case studies.

An online community of practice to include National Focal Points (NFPs) and persons from Executing and Partner Agencies will be established early in project implementation or even during the project preparation phase. The CReW¬+ intends to evaluate lessons learnt from the development of this tool and to use an improved mechanism from inception of the new CReW+ project. Regional meetings will include facilitated knowledge sharing sessions.

Communications and outreach materials will generally promote integrated water and wastewater management with emphasis on protection of freshwater at source (surface and ground water supplies), improved land used practices for protecting watersheds and freshwater basins, and changing attitudes and perceptions about the use of treated wastewater.

The project website will be populated with all project documents, including the knowledge documents. Arrange of media (audio-visual, broadcast, social and printed) will be used to disseminate information on project activities as well as to educate on integrated water resources management and the environmental, health and economic benefits of improving wastewater management. A quarterly newsletter and regular bulletins will also be used to share information, including lessons learnt, on project activities including through various social media platforms. Project materials will be prepared in both English and Spanish to ensure good exchange of information as well as feedback. CReW+ will participate fully with the GEF IW: LEARN and share experiences and lessons with the IW portfolio. Where appropriate the project will ensure that the relevant projects in the LD and C&W portfolios also benefit on the national actions that could lead to further global benefits.

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

A. RECORD OF ENDORSEMENT[34] OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S):[35] (Please attach the Operational Focal Point endorsement letter(s) with this template. For SGP, use this SGP OFP endorsement letter).

NAME	POSITION	MINISTRY	DATE *(MM/dd/yyyy)*
Mr. Edison ALLEYNE	Permanent Secretary	Ministry of Environment and Drainage - Barbados	04/07/2016
Ms. Sharon RAMCLAM	Chief Executive Officer	Ministry of Economic Development, Petroleum, Investment, Trade and Commerce - Belize	07/21/2016
Ms. Claudia Vasquez MARAZZANI	Head of the Office of International Affairs	Ministry of Environment and Sustainable Development - Colombia	07/22/2016
Mr. Ruben MUNOZ ROBLES	Director, International Cooperation	Ministry of Environment, Energy and Telecommunication - Costa Rica	07/22/2016
Mr. Enrique MORET HERNANDEZ	Director, Department for International Affairs	Ministry of Science Technology and Environment (CITMA) - Cuba	05/03/2016
Ing. Patricia ABREU FERNANDEZ	Deputy Minister for International Cooperation	Ministry of Environment and Natural Resources (SEMARENA) - Dominican Republic	03/26/2016
Mr. Fitzroy JAMES	Director	Ministry of Economic Development, Trade, Planning, Cooperatives and International Business - Grenada	04/08/2016
Mr. Oscar Ernesto MEDINILLA SANCHEZ	Minister of Environment and Natural Resources	Ministry of Environment and Natural Resources - Guatemala	07/05/2016

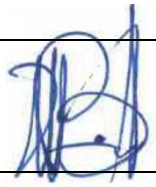
[34] For regional and/or global projects in which participating countries are identified, OFP endorsement letters from these countries are required even though there may not be a STAR allocation associated with the project.

[35] In view of the changes enacted to the original submission approved by the participating countries both in terms of overall budget but also in terms of focal area breakdown and scope of the interventions, the GEF focal points were informed accordingly on 04 July 2017 and asked for their review and no-objection approval by 28 July 2017. None of the participating countries had reservation with the revised content and process.

Dr. Indarjit RAMDASS	Executive Director	Environmental Protection Agency - Guyana	04/01/2016
Ms. Rosibel MARTINEZ ARRIAGA	Director of External Cooperation and Resource Mobilization	Secretariat of Energy, Natural Resources, Environment and Mines - Honduras	07/20/18
Ms. Gillian GUTHRIE	Senior Director	Ministry of Water, Land, Environment and Climate Change - Jamaica	05/25/2016
Mr. Carlos Raul DELGADO	Deputy General Director	Ministry of Finance and Public Credit - Mexico	07/22/2016
Ms. Elba Yanel CORTES BONILLA	Director of the International Affairs Office	National Authority on Environment - Panama	07/05/16
Ms. Lavern QUEELEY	Director, Department of Economic Affairs and PSIP	Ministry of Sustainable Development - St. Kitts and Nevis	04/12/2016
Ms. Caroline EUGENE	Assistant Permanent Secretary to the Ministry	Ministry of Sustainable Development, Energy, Science and Technology - St. Lucia	04/04/2016
Mrs. Janeel MILLER-FINDLAY	Environmental Services Coordinator	Ministry of Health, Wellness and the Environment - St. Vincent and the Grenadines	07/08/16
Ms. Nataly PLET	Environmental Policy Officer	Office of the President of the Republic of Suriname - Suriname	04/18/2016
Ms. Gayatri BADRI MAHARAJ	Managing Director (AG.)	Environmental Management Authority - Trinidad and Tobago	04/01/2016

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF policies[36] and procedures and meets the GEF criteria for project identification and preparation under GEF-6.

Agency Coordinator, Agency name	Signature	Date *(MM/dd/yyyy)*	Project Contact Person	Telephone	Email
Juan Pablo Bonilla, IDB-GEF Executive Coordinator		10/06/2017	David Wilk, Task Manager	+1-202-623-1843	davidw@iadb.org
Brennan Van Dyke, UN Environment GEF Executive Coordinator		10/06/2017	Isabelle Van der Beck, Task Manager	+1-202-974-1314	Isabelle.vanderbeck@unep.org

C. ADDITIONAL GEF PROJECT AGENCY CERTIFICATION (APPLICABLE ONLY TO NEWLY ACCREDITED GEF PROJECT AGENCIES)

For newly accredited GEF Project Agencies, please download and fill up the required **GEF Project Agency Certification of Ceiling Information Template** to be attached as an annex to the PIF.

[36] GEF policies encompass all managed trust funds, namely: GEFTF, LDCF, and SCCF

ANNEX 1: MAIN ACHIEVEMENTS AND LESSONS LEARNT OF CREW INCLUDE:

MAIN ACHIEVEMENTS

The CReW has achieved the planned objective in testing innovative approaches to financing wastewater infrastructure (in four pilot countries) supported by essential enabling activities to strengthen capacity to address policy/legislation issues and technical needs in all 13 countries. The project has also highlighted the significance of these 'enabling' conditions and the need for ensuring that these are adequate prior to investments. Feedback from the countries to the Terminal Evaluation demonstrated that all components were appreciated, complementary and undertaken to high quality level.

Within the Component I: Establishment of an innovative financing mechanism for wastewater management, the CReW has achieved the following:

- 2 of the 4 pilot countries (Belize and Jamaica) have started to generate repayments into the Financing Mechanism.
- Jamaica has implemented a very innovative mechanism called K-factor, which is used to repay funds to their Financing Mechanism.
- 37,041 people (8,356 households) will benefit from the access to improved wastewater treatment facilities once the construction is completed.
- 9,687 m^3/day of wastewater will be treated once the construction is completed.
- Reduction of 2,132 kilograms of BOD per day; 406 kilograms of nitrogen per day; 85 kilograms of phosphorus per day.
- 12 wastewater treatment plants will be completed by the end of the project.
- An important (and highly beneficial) output has been the development of national Operational Manuals for the Pilot Financing Mechanisms (PFMs). These manuals are an excellent concept and vehicle to implement project across all project countries.

The concept of the CReW project in testing options for wastewater financing, underpinned by essential national or regional drivers (e.g. the LBS Protocol, national policies etc.) was considered good or excellent. A strength of the project has been in highlighting the essential elements of the 'enabling conditions' that are required. Not only is it important to have the appropriate legislations, policies and enforcement, but it has also highlighted the need for sustainable financing through fees, tariffs, etc. to operate and maintain wastewater infrastructures. The project contribution has been the following:

- 7 countries have developed reforms to support implementation of the LBS Protocol.
- 23 Institutions have participated in capacity building activities for wastewater management.
- 40 Organizations have participated in awareness building activities.
- 75% of the participants in the workshops have perceived that their knowledge has increased.
- A new information sharing mechanism has been established.
- 5 countries have improved their policy, legal and/or institutional frameworks.
- 50% of participating countries have initiated national wastewater planning activities.
- 3 countries have developed and approved National Action Plans for wastewater management.
- 3 countries have established National Inter-Ministerial Committees to provide guidance and coordination.
- A Template for Wastewater management plan was developed.
- Jamaica became the fifth CReW country to ratify the Land Based Sources of Pollution Protocol in November 2015.
- More than 600 technicians, government officials, and other stakeholders have been trained in various aspects of wastewater management.
- In Jamaica, operator training has been institutionalized with regular certified courses being offered by the University of Technology.
- A methodology for Economic Resource Valuation for use in wastewater management was developed and applied at three pilot sites in two countries
-

As part of the Component II (Communications, Outreach, and Information Exchange), over 20 Wastewater management Communication products were developed with a wide range of awareness building activities and products disseminated at regional, national and local levels, and aimed particularly at decision makers. All these products have contributed to a better understanding of the need for good wastewater management.

LESSONS LEARNT

Many lessons/experience have been learnt and they have been utilized to build the new proposal CreW+.
A key lesson from the CReW is that the purpose of the project (testing of the financial mechanisms) was not initially appreciated by all stakeholders. Hence a conclusion is that more attention must be devoted to better explaining the project at inception.

All stakeholders involved in the project underestimated the time and effort to initiate this project, particularly the PFMs. The level of preparedness at the country level (ensuring that enabling conditions of institutions and policies are in-place, that potential projects are prepared and evaluated, etc.) needs to be enhanced. The PFMs countries appear also to have underestimated the capacity needs of the PMUs established in the initial stages, slowly building the staffing levels to be able to provide the necessary management at a local level. In addition, the ability of the GEF Implementing Agencies to adequately respond to evolving needs and provide flexible and innovative approaches, especially to small private sector companies, should be better considered prior to the follow-on project.

As a regional project addressing the multiple languages of the partner countries, translation (including proofing, etc.) of material (results, guidance, experiences, etc.) was not adequately resourced. Availability of project outputs in all languages is considered by the TE to be an essential element in encouraging the up-take and up-scaling by the countries and ensuring the maximum benefits are obtained from the GEF investments. In addition, the design of the project with four PFMs and the PCG all located in English speaking countries appeared somewhat imbalanced for such an ambitious regional project. This should be also recognized as an essential requirement for consideration in CReW+.

In addition to the previous mentioned, some specific lessons learnt from the project include:

- Implementation of financing mechanisms of different scales - from national, as in CReW, to community level "microfinancing"
- Equitable distribution of activities between Pilots & Non-Pilots countries.
- Greater engagement of the Caribbean Development Bank and other partners.
- Criteria for Investment Support: Phased/Modular approach with wastewater solutions being part of IWRM.
- More focus and therefore resources towards the stabilization of the enabling environment for the development of financing mechanisms.
- More focus on resources dedicated to the communications component.
- Promotion of a Broader Framework for Financing Mechanisms.
- Include more Innovative solutions and approaches at multiple levels.
- Resource Valuation (RV) as a decision-making tool; Wastewater as a Resource, particularly the implementation of small-scale treated wastewater reuse projects. Communication strategy, designed and implemented earlier.
- The development of the wastewater sector needs to be linked to the water sector.
- Countries could benefit from a period of preparedness to develop the capacity needed to execute new financial mechanisms.
- Development of a National Wastewater Management Policy and/or Strategy should be a prerequisite to introduction of a new financial mechanism.
- Peer-to-peer approaches can help to overcome existing financial, human resources and technical capacity constraints in areas such as data collection, laboratory analysis, technology development and policy and legal reforms.

ANNEX 2: STAKEHOLDER GROUPS AND ROLE IN CREW+

STAKEHOLDER (Groups)	ROLE IN CReW+
Government ministries and agencies	
Ministries/agencies with responsibility for water and wastewater (usually with responsibility for environment and/or health)	Responsible for establishing legislation and policies governing water and wastewater management, including effluent and water quality regulations, monitoring and enforcement. Key partners to strengthen the legislative, regulatory and institutional frameworks and to develop capacity for effective management of the WW sector, including monitoring and enforcement. Development of instruments to encourage better WWM.
Water/wastewater utilities	Responsible for provision of water supply and wastewater management services to urban and rural populations. Continue to work with these key partners to build capacity for effective management of the WW sector. Provide training and professional development. Encourage investment in R&D.
Other key ministries/agencies, e.g. with responsibility for:	
• Tourism	Responsible for hotels and other tourist attractions that often provide their own WW treatment facilities. Work toward ensuring that policies governing hotels and tourist attractions include requirements for adequate WW treatment and effluent standards and penalties for non-compliance. Similar standards can be incorporated into policies for community tourism – which will contribute also toward general community well-being. Reduce barriers to re-use.
• Agriculture	Responsible for agriculture, forestry, fisheries. Agriculture is a major user of water and generator of non-point source water pollution. Raise awareness and skills related to farming practices that treat and reuse wastewater. Relates to water rates and tariffs – need to identify full cost of service and align the rate paid. If potable water for agriculture is significantly subsidized or free, there is little incentive to conserve or look to ww reuse as an alternative to treated water.
• Trade and Industry	Responsible for entities that often generate significant wastewater which is usually managed on-site. Work toward ensuring that policies governing industry include requirements for adequate WW treatment and effluent standards including enforcement. Encourage collaboration and investment in R&D, waste reduction and resource recovery.
• Community development	Responsible for urban and rural development (often oversees local government or municipal authorities. Raise awareness and skills related to practices that treat and reuse wastewater. Community level WWT.
• Education	Responsible for the operation of schools and the formal curriculum taught in schools. Investigate opportunities to further incorporate sanitation issues and links to health, environment etc. in formal curriculum. Collaboration in R&D and best practices. Include sanitation issues/projects in school-based initiatives e.g. Panama's Healthy Schools Projects, Jamaica's Schools Environment Programme.
• Ministry of Foreign Affairs	Promotes regional interests in global issues. Engage in activities with foreign service officers to promote wastewater in the 2015 development agenda discussions at the UN as it relates to Caribbean SIDS. Engage with key decision makers to increase budget allocations for WW management and to consider tax incentives for innovative WW management systems. Engage with private sector funding agencies and banks to look for ways to reduce cost of investment in WWT.
Local government or municipal authorities e.g. National Association of Village	Responsible for: establishing local water supply and wastewater disposal systems; maintaining public sanitary conveniences. Engage more fully with local

STAKEHOLDER (Groups)	ROLE IN CReW+
Councils- Belize, District Coordination Units – Panama, Social Cohesion Council - Guatemala	authorities with respect to sanitation issues and provide information on access to funding for local groups and communities. Local authorities can help identify wastewater solutions with associated social and economic benefits as well as potential livelihood opportunities.
Ministry of Finance and Planning	Responsible for collecting and allocating public revenues towards WW initiatives, as well as having an important role in socio-economic development. Develop a fiscal and economic framework that supports investment into WW and sanitation projects. Help test innovative financial mechanisms for cost-effective and sustainable wastewater management in the WCR.
International, Regional and National Organizations and Networks that Focus on Water, Sanitation and Wastewater	
Caribbean Public Health Agency (CARPHA), Environmental Health and Sustainable Development Department (EHSD)CARPHA	Addresses impacts of human activity on the environment and the consequent effects on human health. Have programmes in water resources management, management of solid, liquid, hazardous, biomedical and electronic waste. Training, public awareness. Has strong links with the "youth in the region". Hosts Caribbean Environmental Forum and Exhibition. Collaborate on wastewater management training. Engage Health, Environment and Community stakeholders through core work areas and major multi-sectoral projects focused on pollution prevention using a ridge to reef approach, which includes wastewater management standards, monitoring programmes and encouragement of reporting, setting of targets and benchmarks.
Global Wastewater Initiative	Facilitates cooperation and coordination to better understand and address wastewater challenges and opportunities. Promotes and shares information on adequate wastewater treatment technologies and strategies, tools and guidelines, resource recovery and reuse. Contributes to knowledge generation and to international debates and agendas (e.g. SDGs). Organizes annual GW^2I event on wastewater. Through establishment of regional platform and to collaborate on implementing demonstration project on wastewater reuse
Caribbean Water and Wastewater Association (CWWA)	Promotes education and training in water supply, WW and solid waste disposal for water and WW professionals and raising general awareness among the general public. Promotes and shares research and development in supply, WW and solid waste disposal. Hosts annual C WWA Conference and Exhibition. Collaborate with these umbrella organizations to provide training and professional development as well as public awareness initiatives directed at the general public. Develop advocacy programmes to reach key national and regional decision makers to increase resources allocated to the WW sector and improvements in legislative and regulatory reform and monitoring and enforcement of existing regulations e.g. those related to effluent standards. Encourage gender and youth participation.
Caribbean Water & Sewerage Association Inc. (CAWASA)	Regional organization of water utilities - provides operator certification, staff training, regional conferences and management support services.
Global Water Operators Partnership (WOP) and regional WOPs – CariWOP and WOP-LAC	Shares expertise, experiences, models, lessons learned in operating water/wastewater utilities. Training, fund-raising, advocacy.
Global Water Partnership-Caribbean (GWP-C)	Network of water-related organizations in public, private and NGO sectors in the Caribbean. Water Climate and Development Programme (WACDEP) – goal is to promote water security and climate resilience in Caribbean states. The GWP-C Journalists Network on Integrated Water Resources Management (IWRM) is a body of journalists from the Caribbean region which builds awareness on IWRM and water related issues. Continue to partner with GWP-C in training and

STAKEHOLDER (Groups)	ROLE IN CReW+
	awareness raising, with an increased focus on WW management and sanitation. Provides an opportunity to include wastewater issues within water planning and establish a nexus between wastewater and water availability.
Global Water Partnership-Central America (GWP-CA)	Network of water-related organizations in public, private and NGO sectors in Central America. Conducts training and public awareness activities. Continue to partner with GWP-CA in training and awareness raising, with an increased focus on WW management and sanitation. A network similar to GWP-C Journalists Network on IWRM could be established in Central America.
The Regional Network for Water and Sanitation in Central America (RRASCA) – and its national networks e.g. Water and Sanitation Network of Honduras, Network for Water and Sanitation in Guatemala	Promotes sharing of experiences in water and WW management. Conducts training. Engage in partnerships to share best practices in legal and institutional arrangements as well as appropriate technologies.
The Nature Conservancy	Sponsor the conservation of marine and terrestrial areas of ecological importance that are affected by WW issues. Work more closely with partners in the Caribbean to promote WW investment and policy reform for the improvement of marine and coastal ecosystem function. Encourage activities that would lead to tighter pollution control.
World Resources Institute	Works closely with world leaders to promote sustainable natural resources management. Its water program seeks to sponsor initiatives that address challenges related both to water quality and quantity. Expand the scope of its projects to cover more countries in the WCR. Implement initiatives that prioritize the sustainable development of Caribbean water resources and work towards the goals of increased WW investment and policy reform.
Intergovernmental	
CARICOM – Sustainable Development Unit	Has a role in encouraging countries of the WCR to improve water quality and WW management. Support cooperation between member states and work towards increased ratification and implementation of the LBS Protocol.
OECS – Environment and Sustainable Development Unit	Assist member states in all matters pertaining to the sustainable use of water resources. Take further measures that work towards improving the well-being of people whose livelihood depends on coastal and marine ecosystems.
Pan-American Health Organization (PAHO)	It provides technical cooperation and mobilizes partnerships to improve water and sanitation issues in the countries of the WCR. Encourage cooperation between Caribbean countries to improve sanitation and use its expertise to take measures that reduce the prevalence of waterborne diseases.
Food and Agriculture Organization of the United Nations (FAO)	This organization plays an important role in securing more efficient, equitable and environmentally friendly use of water in agriculture. Support programs that influence national policy for more efficient, transparent and equitable use of water for agriculture. Work with stakeholders to increase awareness and improve WW management in agriculture.
Central American Integration System (SICA) – Central American Commission on Environment and Development (CCAD)	Important in promoting cooperation between member states. Its Regional Committee for Water Resources (CRRH) coordinates and facilitates projects related to the sustainable management of water resources in Central America. Use its influence in the region to support the strengthening of national WW policy by member states. Encourage cooperation between countries of Central America on water related issues.
Regional and National Associations and Networks in Related Areas	

STAKEHOLDER (Groups)	ROLE IN CReW+
Tourism Caribbean Hotel and Tourism Association, Caribbean Alliance for Sustainable Tourism (CAST) (includes Caribbean-Central American Action (C-CAA), Caribbean Tourism Organization (CTO)). Central America Tourism & Hotel Investment Exchange. National tourism associations e.g. Jamaica Hotel and Tourist Association, Panamanian Association of Hotels etc.	Organizations that promote tourism and networking among hotels and tourist attractions. CAST specifically promotes responsible environmental and social management of natural and heritage resources respectively, within the hotel and tourism sector. Hotels often manage on-site WW treatment plants and many are part of environmental certification programmes. Since tourism is such a big part of the WCR's economy and has such a large impact on water use and WW generation, this sector has a big role to play in effective water and WW management and should be fully engaged in CReW2.
Business National business associations e.g. Jamaica Manufacturers' Association, Small Business Association, Private Sector Organization of Jamaica. International Chamber of Commerce (ICC) and members (e.g. ICC Caribbean, ICC Costa Rica etc.).	Networks that share best practices and expertise within the business community. Provides technical assistance, advocates for policy change etc. These umbrella organizations can assist in awareness raising and training for member firms, companies, consultants to increase focus on and appreciation of effective WW management.
Environment National environmental NGOs and professional associations e.g. Jamaica Institute for Environmental Professionals, Belize Enterprise for Sustainable Technology, Panama's National Association for the Conservation of Nature (Ancon)	Networks of organizations that focus on a range of environmental issues. Engage in training, advocacy, raising awareness. There are opportunities to increase focus on wastewater and sanitation issues among the various environmental messages being delivered. Professional organizations can provide advocacy for legislative and policy reform and can assist in capacity building/training.
Businesses	
Large firms e.g. breweries, sugar factories, food processors, manufacturing firms	Certain large firms are significant wastewater generators and are usually responsible for operating their own WW treatment plants. Other companies discharge into the general sewage system. All are accountable for ensuring that effluents meet national standards. Share best practices and build capacity for effective WW management.
Local hotel owners and commercial developers	Maintain WW treatment plants for their own use and use of specific housing schemes. Share best practices and build capacity for effective WW management.
Environmental services consultants	Individuals and firms that provide environmental services such as environmental impact assessments, multilateral; environmental agreements, WW treatment plant design and development, monitoring etc. Share best practices in WW management. Engage in process to reform legislative, regulatory and institutional frameworks, training, public awareness and capacity assessments.
Financial Sector	
Commercial banks, credit unions	Provide loans for businesses and individuals. Engage with banks to facilitate loans to businesses and community organizations for improvements in sanitation facilities.
Spanish Cooperation Fund for Water and Sanitation in Latin America and the Caribbean	Special grant fund created by the Government of Spain to help countries in Latin America and the Caribbean expand water and sanitation services and support their efforts to reach the Millennium Development Goals for the sector. Promote this fund and explore opportunities for CReW stakeholders to tap into the fund.

STAKEHOLDER (Groups)	ROLE IN CReW+
National funding/grants programmes e.g. Environmental Foundation of Jamaica, CHASE fund	Provide funding e.g. small grants for community-based projects related to environment, health, community development etc. Explore opportunities to promote/fund community-based projects that improve sanitation in both rural and urban communities.

ANNEX 3: IBD RELEVANT WATER AND SANITATION PROJECTS IN THE CARIBBEAN

Country	Project Number	Project Title	Description	Total Amount for the Operation (USD)	Total Amount related to CReW Outcomes (USD)	Start and End Dates
Mexico	ME-T1326	Wastewater Treatment and Management of Non Revenue Water	(I) Financing scheme and strengthening of operation and maintenance mechanisms, for which a financing scheme for the construction, operation and maintenance of the WWTPs will be developed. (ii) Valuation and costs of sanitation (iii) Dissemination of results, which seeks to strengthen the capacities of actors at different levels of government.	$800,000	$472,000	Dec 2016 - Jun 2019
Dominican Republic	DR-L1057	Santiago Water Supply Service Improvement Program	The general objective of the project is to improve access to drinking water in the metropolitan area of Santiago de los Caballeros. The specific objectives are: (i) to improve the continuity of drinking water service in areas where it is deficient; (ii) to improve operational efficiency by improving business management and corporate governance.	$25,000,000	$10,580,000	Oct 2014 - Oct 2019
Guyana	GY-X1003	Water Supply and Sanitation Infrastructure Improvement Program	The operation will tackle pressing issues linked to the poor quality of water supply and sanitation services in three selected areas outside the capital Georgetown. tanks units.	$19,784,173	$4,121,320	Oct 2014 - Oct 2019

Honduras	HO-G1005	Intervention Models in Water and Sanitation for Rural Dispersed Area in Honduras	The proposal aims to develop guidelines for models water and sanitation intervention in scattered rural areas (populations less than 200 inhabitants), based on the systematization of experiences existing lessons arising from technological alternatives and pilots forms of sustainable approach	$525,000	$208,570	May 2016 - May 2019
Mexico	ME-L1147	Sustainability of Water Supply for Rural Communities	The program has the following components: i) Institutional Development ii) Social Care and Community Participation, and iii) Infrastructure.	$450,000,000	$109,177,920	March 2014 - March 2018 (It is estimated at least one year extension)
Panama	PN-L1148	Water Security Program within the Water and Sanitation Framework in Panama	The program will aim to improve the sanitary conditions of the population served by IDAAN by providing a financially sustainable long term service. In addition, the institutional framework of the sector and the protection of water resources will be strengthened.	$20,000,000	$14,000,000	2017 - 2022
Total				**$516,109,173**	**$138,559,810**	