

IWEco National Sub-Project 1.7
Addressing Land Degradation in the Georgetown
Watershed, Saint Vincent

SAINT VINCENT AND THE GRENADINES
Appendix 37

COVER SHEET

- Name of small-scale intervention: **Addressing Land Degradation in the Georgetown Watershed, Saint Vincent**
- Name of Lead Partner Organization:
 - a) Ministry of Health, Wellness and the Environment
- Contact person:
 - a) Janeel Miller-Findlay, Director, Environmental Management Department
- IWEco Project focus: Land Degradation
- Total area covered: Targeted interventions for land degradation mitigation over 15 hectares within a wider 100 hectare zone of influence to restore agricultural land productivity of lands impacted by flooding, reduce risk to life and property from flood occurrence and reduction of sedimentation (for ecosystem restoration and improved ecosystem management)
- Duration of sub-project: 48 months
- Amount of GEF grant: **\$999,685 USD**
- Amount of Co-financing: **\$1,608,875 USD**
- Total funding: **\$2,608,560 USD**

CONTENTS

1	PROJECT IDENTIFICATION.....	4
1.1	Project Summary	4
2	PROJECT DESIGN	7
2.1	Background and Context	7
2.2	Overall Objective and Outcome	186
2.3	Consistency with International Efforts	197
2.4	Activities, Outputs, Outcomes.....	198
2.5	Incremental Reasoning	22
2.6	Budget.....	27
2.7	Project Timeline	31
2.8	Risk Analysis.....	34
2.09	Sustainability	385
2.10	Replicability	406
2.11	Execution Arrangements	417
2.12	Communications and Dissemination Mechanisms	418
2.13	Monitoring and Evaluation (M&E)	439
3	ANNEXES	
	Annex 3.1 Logical Framework and Objectively Verifiable Impact Indicators	517
	Annex 3.2: Letters of co-financing	638
	Annex 3.3 Terms of Reference for Partners and Consultants	639
	Annex 3.4 Carbon accounting - St Vincent & the Grenadines	61

1 PROJECT IDENTIFICATION

1.1 Project Summary

The **Georgetown Watershed** management area on Saint Vincent encompasses some 5,750 ha (22.2 square miles), including the drainage basins of the (a) Byera River, (b) Congo Valley river and Jennings river, which merge midway to form Grand Sable river, that flows to the coast, (c) Caratal river and Perseverance river and (d) the Langley Park river. The Georgetown community was severely impacted by Hurricane Tomas in October 2010 and destructive floods associated with an extreme rain event in April 2011 and trough systems in December 2013, 2015 and 2016. The watershed has also been undergoing gradual degradation, mainly associated with agricultural development. In the upper-most reaches of the watershed the illicit cultivation of marijuana is contributing to the problem. Pig rearing has been increasing particularly in the Jennings/Congo valley with six production units established. Pens are located directly on the banks of the rivers where the untreated effluent is discharged directly into the adjacent watercourse posing environmental and human health hazards downstream. Effluent discharged directly into the mouth of the Perseverance River by St Vincent Distillers is creating a nuisance to the community and impacting the aquatic biodiversity downstream. The watershed area falls within a national biodiversity hotspot, which is home to several rare and threatened species, most significantly the endemic St Vincent Parrot (*Amazona guildingii*), a national flagship for conservation in the country, and five endemic reptiles.

The project, mainly under the land degradation focal area, will target reforestation and conservation forestry interventions over at least 7.5 hectares within upland areas where landslides have occurred and along some 1.8 km of riverbank that continue to actively erode. Approximately 10 hectares of farmland was affected by the flood event of April 2011; at least 2 hectares of the most severely degraded area will be reclaimed using a range of soil stabilization and forest management techniques. This area will be used to demonstrate best practices and as a learning centre for sustainable land management practices. It is expected that some 15 to 20 farm holdings will be positively impacted, bringing these lands back into productive potential in the medium to long-term. A sub-component of the project will be to carry out thinning in *Hibiscus elastus* (Blue Mahoe) and *Swietenia mahagoni* Mahogany forest plantations located at Perseverance over approximately 5 hectares. This intervention will also improve stability of the existing forest plantation and enhance the diversity of the forest, through natural regeneration of indigenous forest tree species. This will further increase the habit of the endemic St. Vincent Parrot, resulting in increase of the population.. The thinnings will be sold to demonstrate financial viability of improved husbandry.

Despite the significant erosion and scarring of the landscapes within the watershed, natural regeneration has occurred in degraded areas, comprising pioneer species as well as localized species of galba, locus, fiddlewood, etc. Notwithstanding the natural succession, there is a clear distinction between these patches of scrubbery and surrounding stands of mature forest, untouched by the disasters. Enrichment planting of naturalized species will be done on approximately 2 hectares of the 7.5 hectares to stabilize the already unstable soil, as well as to increase the biodiversity within the secondary forest.

Several access roads to the the watershed as well as the major water catchment in the area have been damaged due to the combined floods of 2011,2013, 2015 and 2016. In the 2016 floods portions of the road was cutoff completely and a temporary diversion was done subsequently, to restore access to the watershed. Currently there are large fissures in the asphalt surface layer and portions of the dirt

road is overgrown with weeds. The project will assist with the reahabilitation of the road allowing access to workers to carry out silvicultural interventions in the watershed to further promote soil and water conservation in the area.

The project will also target the reduction of direct discharges of pig effluent into the environment through the employment of dry manure techniques. This assistance to the livestock farmers will build on the good agricultural practices programme of the Ministry of Agriculture. The project will contribute to the development of the Jennings Bird Watching Trail; an upgrade to an existing forest patrol trail that has the potential to be a significant revenue earner for the community given the avian diversity and uniqueness in the upper watershed as well as the outstanding aesthetic appeal of the environment. The trail upgrade will result in spin-off benefits to the community through jobs linked to the provision of services, accommodation, trail guiding and retail of indigenous local branded souvenirs. The GEF Small Grants Programme will support at least one community group in the Georgetown area to take advantage of the economic potential associated with implementation of the project.

While the direct project interventions in sustainable land and forestry management will be over approximately 15 hectares, the entire watershed over 5,750 hectares will be managed as a unit within the scope of the project. Fifty hectares of the forest protected will directly benefit ecotourism. It is expected that the active SLM interventions to reduce the rate of upland degradation and restore the integrity of riparian ecosystems will lead to benefits within the wider watershed through in-situ conservation. Through on-site land and forest cover investments within 15 hectares over the target watershed areas, it is expected that an estimated 1,403.3 equivalent tonnes of CO₂ over the life of the project, or an average of 280.7 tCO₂eq/year will be sequestered.

The project will also implement a census of the St. Vincent parrot (*Amazona guildingii*), endemic to the island of St. Vincent and the Grenadines, and one of the rarest and most magnificent parrot species globally. The parrot's populations have suffered decline through the 20th century until the early 1980s. Following recent conservation action and public awareness, numbers increased from 370-470 individuals in 1982 to approximately 519 in 2002, and then to 734 in 2004 (Greenwood 1994, Culzac-Wilson *et al.* 2003, Wege D. *in litt.* 2005). According to the IUCN Red List of Threatened Species' website, the current population stands at approximately 730 birds (Loro Parque Fundación 2008). Despite the increasing populations, due to limited size of its home island, human impacts on the habitat and natural disasters, the *Amazona guildingii* retains its status as vulnerable under the IUCN Red List.

A series of public awareness strategies will be implemented to build on the work of conservationists in the early 1900s. In collaborations with private sector and educational institutions, a suite of information products, activities and events will be implemented. Public awareness and outreach products as well as knowledge management products will be created and lessons learned and good practices documented, for dissemination towards replication in other ecological hotspots. These include but are not limited to branding of flagship endemic species on bottled water extracted from the watershed, social media promotions, environmental music videos and a St Vincent Environment Music Festival, stage play, mascot, media awareness workshop, forestry summer programmes, interpretative signs along nature trails and school awareness campaign.

Table of Regional Components, Project Outcomes, and Link to Sub-Project

Regional Component	Project Outcomes
C1. TECHNICAL SOLUTIONS & BENEFITS	C1.1 Measurable stress reduction at project sites through appropriate sustainable water, land and ecosystems management interventions that account for climate change.
	C1.2 Enhanced livelihood opportunities and socio-economic co-benefits for targeted communities from improved ecosystem services functioning.
C2. MONITORING SYSTEMS	C2.1 Strengthened national and regional systems for monitoring of environmental status with respect to key international agreements.
C3. POLICY & CAPACITY	C3.1 Strengthened policy and legislation for the effective management of water, land and ecosystems resources that account for climate change.
	C3.2 Strengthened capacity of national and regional institutions and other stakeholders for water, land, and ecosystems management that accounts for climate change.
C4. KNOWLEDGE MANAGEMENT	C4.1. Improved engagement and information access for practitioners and other stakeholders through targeted knowledge sharing networks.

Table of GEF FA Objectives, Project Outcomes and Corresponding Sub-Project Outcomes

GEF Focal Area Outcome	Project Outcomes (above)	Sub-Project Outcomes
National Component 1 Objective: To develop and foster the implementation of targeted Innovative, climate-change resilient approaches to integrated sustainable land and water resources management and enhanced management and maintenance of ecosystem services within the Georgetown Watershed.		
IW 1.3, 2.3; LD 3.3, BD 2.1	C1.1 Solutions	Measurable stress reduction at project sites through appropriate sustainable water, land and ecosystems management interventions that account for climate change.
LD 3.2; BD 2.1	C1.2 Benefits	Enhanced livelihood opportunities and socio-economic co-benefits for targeted communities from improved ecosystem services functioning
National Component 2 Objective: To strengthen Sustainable Land Management (SLM), Integrating Water Resources Management (IWRM) and ecosystems Monitoring and Indicators frameworks in Saint Vincent and the Grenadines		
IW 2.1; BD 2.1	C2.1 Monitoring	Adoption into national accounts of IW and LD, and BD-related indicators of process, stress reduction, and environmental and socioeconomic status to monitor improvements in the management of land and water resources and wastewater
National Component 3 Objective: To strengthen policy, legislative and institutional reforms and capacity building to support Sustainable Land Management (SLM), Integrating Water Resources Management (IWRM) and ecosystem services management taking into consideration climate change resilience building in Saint Vincent and the Grenadines.		
IW 1.1, 1.4, 2.1	C3.1 Policy	Strengthened policy and legislation for the effective management of water, land and ecosystems resources that account for climate change.
LD 3.1, 3.2; SFM 1.1, 1.2	C3.2 Capacity	Strengthened capacity of national and regional institutions and other stakeholders for water, land, and ecosystems management that take climate change into account.
National Component 4 Objective: To enhance knowledge exchange, promotion of best-practices, replication and expanding stakeholder involvement in Saint Vincent and the Grenadines		
SFM 1.3	C4.1. Knowledge	Improved information access and enhanced engagement of practitioners and other stakeholders via targeted knowledge sharing networks

Table of Sub-Project Outputs and GEF funding and co-finance

Outputs	Sources of funding		
	GEF funding	Co-financing/ counterpart	Total Cost
	(US\$)	(US\$)	(US\$)
Component 1.1 - Innovative Solutions	372,216	506,490	878,706
Sub-component - 1.1.1: Riverbank rehabilitation/restoration investments along Perseverance River, Jennings and Congo Valley and Langley Park Rivers	327,216	299,370	626,586
Sub-component - 1.1.2: Investments in rehabilitation/reforestation of lands at Perseverance impacted by Hurricane Tomas and April 2011, 2013, 2015 and 2016 floods	45,000	207,120	252,120
Component 1.2 – Socio-economic benefits	65,000	129,130	194,130
Sub-component - 1.2.1. Community-based investments to enhance revenue generation within target communities supported by GEF-SGP	65,000	129,130	194,130
Component 2.1 - Systems for monitoring	62,700	239,785	302,485
Sub-component - 2.1.1: Suite of project site and national-level IW and LD, and BD-related indicators of process, stress reduction, and environmental and socioeconomic status and field monitoring systems	62,700	239,785	302,485
Component 3.1 - Policy & legislation	46,520	174,710	221,230
Sub-component - 3.1.1: New and/or revised policies and regulations on water supply and sanitation based on the IWRM Roadmaps (and IWRM/WUE strategies where they may exist), National Plans of Action for SLM and ecosystem conservation.	46,520	174,710	221,230
Component 3.2 - Capacity building	149,243	376,340	525,583
Sub-component - 3.2.1: Strengthened National Inter-sectoral Committee - NEAB	44,300	179,260	223,560
Sub-component - 3.2.2: Training programmes, resources and built capacity for enhanced water, land and ecosystem management amongst stakeholders	84,943	179,260	264,203
Sub-component - 3.2.3: Cross-sectoral sensitization and awareness-raising programmes for all relevant stakeholders	20,000	130,240	150,240

St Vincent & the Grenadines Sub-project 1.7

Component 4.1 - Engagement and knowledge access	107,665	182,420	290,085
Sub-component - 4.1.1: Technical exchanges and conference participation to facilitate knowledge transfer across the Caribbean and other SIDS regions	77,465	164,320	241,785
Sub-component - 4.1.2: Suite of best practices and lessons learnt contributing to a Community of Practice (COP) in integrated water, land and ecosystems management for SIDS	30,200	18,100	48,300
GEF IW- Support to minimization of LBSP	75,000	0	0
GEF SFM support to reforestation and forest livelihood	121,342	0	0
TOTAL (in PIF)	N/A	N/A	N/A
TOTAL (revised if applicable)	999,685	1,608,875	2,608,560

2 PROJECT DESIGN

2.1 Background and Context

The Georgetown watershed, where interventions will be focused, is 22.2 sq. miles and it is located on the North Eastern coast between Byera River and Langley Park River (Figures 1 and 2). The watershed, in addition to Georgetown itself, is comprised of the villages of O'Brien's Valley, Spring Village, Basin Hole, Dickson, Mt Bentick, Chapman's Village, Perseverance, Chester Cottage, Byera, Grand Sable, Langley Park, Chili, Overland/ Waterloo/ Orange Hill, and Touroma. The local population was estimated 6914 in 2001, with 3,532 males and 3,382 females. The 2001 population census stated that 1,271 of the 1,926 households own their properties. There were 172 squatters, who problems in the forest by cutting trees without supervision and permission¹.

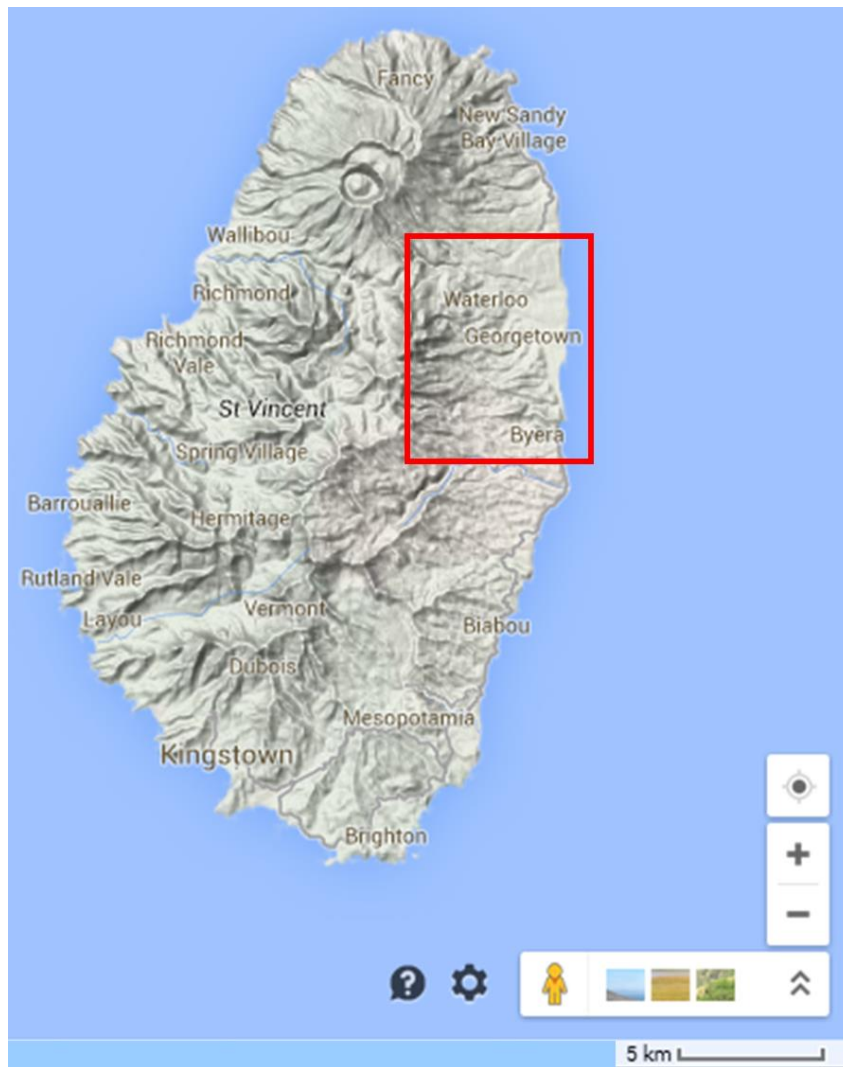


Figure 1. Location of the Georgetown watershed project area (source: Google Maps)

¹ Adams, L.D. (2013) Land degradation in Georgetown, Final Report IWeco Project, Ministry of Health, Wellness and the Environment, Kingstown, St Vincent and the Grenadines

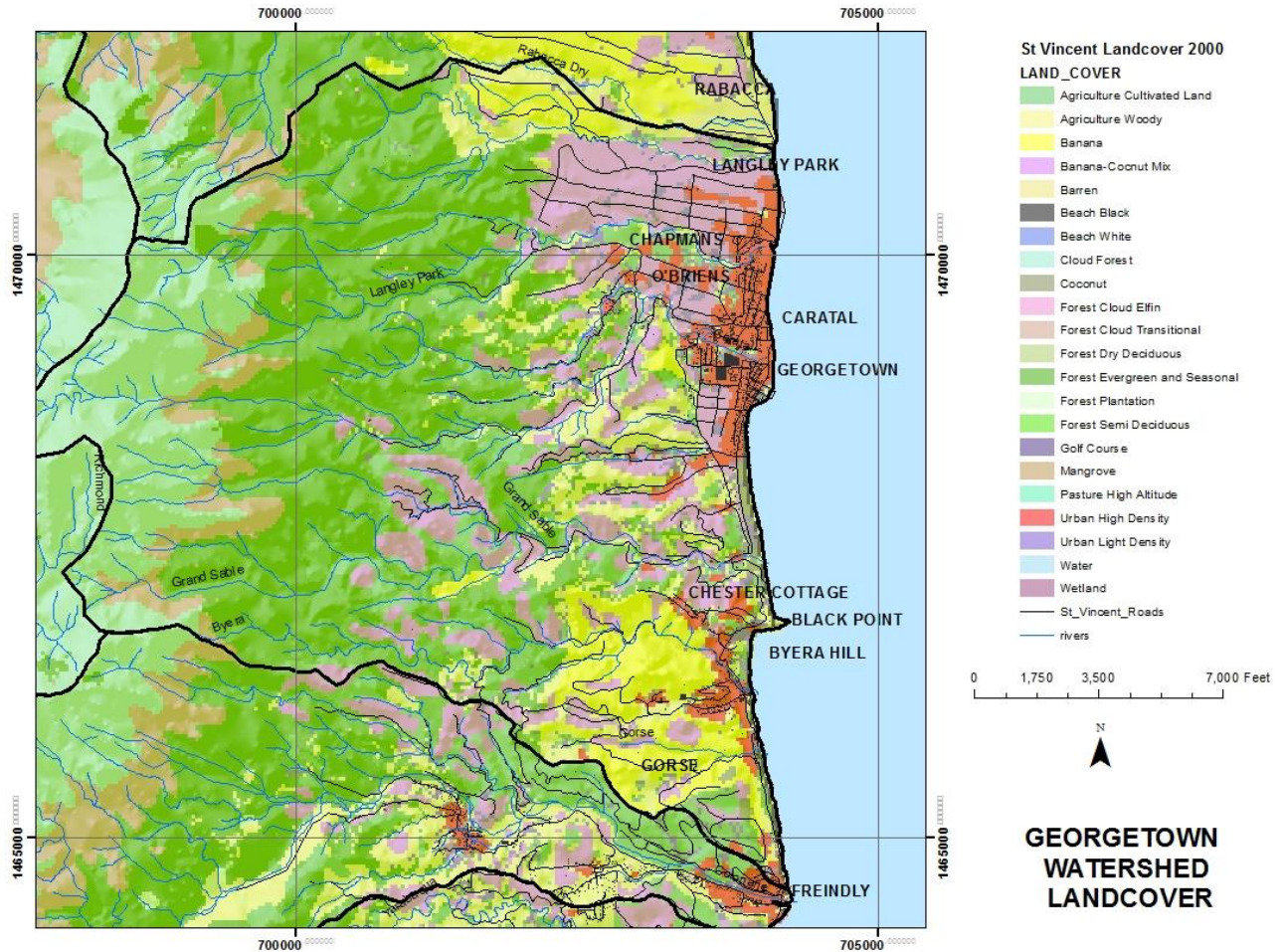


Figure 2: Georgetown watershed landcover 2000, St Vincent (Source: Adams 2013)

The Georgetown watershed rises from sea level on the coast westwards to the interior to heights of over 900 meters. The central mountains run in a north to south direction with spurs running eastwards with numerous steep gorges which are drained by several tributaries which for (4) four main rivers, (a) Byera river, (b) Congo Valley river and Jennings river merge midway to form Grand Sable river that flows to the coast, (c) Caratal river and Perseverance river and (d) the Langley Park river. The rivers all flow eastwards from the central range. The coastal area is flat, about 3 meters to 5 meters above sea level and rises westwards to 900 meters in the central range of mountains. The coastline is eroded by the wave action and is prone to floods and seas surges, which reach well into the coastal plains. Residential areas are located on the coast and along the Caratal, Perseverance and Langley Park rivers. The southern coastal area of Grand Sable is built along the main road¹.

The rainfall averages 2,752.6 mm per annum. There are two distinct seasons (dry and wet). It enjoys an average temperature of about 23 degrees Celsius. Surface water is the source of portable water, irrigation water and industrial supplies. The watershed supplies 5% of the national demand. Jennings and Perseverance are harnessed by CWSA. Perseverance River has a minimum capacity of 856,000 gallons of water per day. The floods of April 2011, 2013, 2015 and 2016 caused severe damage in this

watershed, including to the irrigation supplies from the National Irrigation Authority that resulted in disruption of ecosystem services, many of which have not been restored¹.

Surface water is the major source for potable water, irrigation and industrial supplies. The annual average rainfall is sufficient to meet local requirements. The Perseverance River has a minimum capacity of 856,000 gallons of water per day; seasonal shortages occur only during an extended dry season. Furthermore, the watershed provides 5 % of the national demands. Jennings and Perseverance rivers are harnessed by the Central Water and Sewerage Authority (CWSA) to supply portable water. A spring in Congo Valley provides adequate water supply for the water bottling plant. Between 2009 and 2012, the volume of water extracted annually from the Perseverance River has declined from 130,038 to 83,918 million gallons annually, as a result of the catchment being severely damaged by Hurricane Tomas in 2010 and the floods of 2011, 2013, 2015 and 2016.

While the CWSA aims to bring consistently potable water to all homes, poor land use practices continue to affect the quality of water. During the rainy season particulate matter and sediments find their way into water, due to lack of equipment for coagulation, sedimentation and filtration. It is also possible that agricultural chemicals can contaminate the water¹.

Biodiversity surveys for Saint Vincent and the Grenadines are incomplete². Adams (2013) collated a faunal inventory of the Georgetown watershed. He listed 48 bird species, including the endemic and vulnerable Saint Vincent parrot (*Amazona guildingii*) and the endangered whistling warbler (*Catharopeza bishop*), the endemic subspecies rufous-throated solitaire (*Myadestes genibarbis*) and house wren (*Troglodytes aedon musicus*), as well as birds endemic to Saint Vincent, the Grenadines and Grenada, such as the Grenada Flycatcher, *Myiarchus nugatory*, and the Lesser Antillean Tanager, *Tangara cucullata*. St Vincent and the Grenadines' national bird, *A. guildingii*, is confined to mature rainforest between 125 and 1,000 m, mostly in the upper reaches of the Buccament, Cumberland, Colonarie, Congo–Jennings–Perseverance and Richmond valleys, though birds do stray into nearby farmland and plantations to forage. The other mainland endemic, *C. bishopi* is found primarily within the Colonarie and Perseverance valleys and at Richmond Peak³. The Georgetown watershed thus harbours biodiversity of global importance; however, it barely touches Important Bird Area VC003 in the higher ranges.

With five of the seven reptiles being national endemics, the Georgetown watershed represents a high degree of reptilian endemism (Table 1). The endemic Saint Vincent Frog (*Pristimantis shrevei*) and the rare Antillean fruit-eating bat (*Brachyphylla cavernarum*) add further biodiversity value to this area. Iguanas, armadillos, crustaceans and mullets are hunted and harvested for food; domesticated livestock is also present. Forests provide homes for birds and other wildlife, connectivity to the central forest reserve, stabilize the land, and are used for traditional medicines, fuel, ornamentals, craft and construction purposes.

² www.cbd.int

³ Birdlife.org

Table 1: Reptiles found in the Georgetown watershed, their distribution and status (Adapted from Adams, 2013)

Common Name	Scientific name	Distribution	Status
Black Snakes	<i>Chironius vincenti</i>	Vincentian endemic	Critically endangered
Saint Vincent boa	<i>Corallus cookii</i>	Vincentian endemic	Not assessed
St Vincent tree anole	<i>Anolis griseus</i>	Vincentian endemic	Not assessed
St Vincent bush anole	<i>Anolis trinitatus</i>	Vincentian endemic	Not assessed
Cuban Brown anole	<i>Anolis sagrei</i>	Introduced from Cuba	Alien invasive, still uncommon
Congo snake	<i>Mastigodryas bruesi</i>	Vincentian endemic	Not assessed
Iguana	<i>Iguana iguana</i>	Indigenous	Uncommon due to hunting

The vegetation types of the Georgetown watershed range from cactus scrub in the coastal zone, through a farming zone dominated by largely introduced crop species to 300 m.a.s.l., from where it rises through various forest types, mostly seasonal and evergreen forests, which has been disturbed by volcanic eruptions, hurricanes and human activity, and primary rain forest largely limited to upper Colonarie to ca 500 m.a.s.l.

The flora of much of the Georgetown watershed is dominated by crop species, although a significant portion of lands lie fallow as a result of the decline of banana cultivation. Areas identified in Map 1 as under mixed coconut and banana cultivation are now either fallow or carry livestock, root crops and vegetables.

Despite much fallow land, farming remains the principal occupation in communities of the Georgetown watershed, followed by public service (teachers, police, and hospital staff). Georgetown was once known as 'Sugar town', until the 1990s, when the sugar industry declined. With the recent collapse of the banana industry, the most residents no longer aspire to farming. Praedial larceny has been recorded as the worst socio-economic problem, followed by poor access roads, high cost of inputs, and unreliable work force. The Forestry Department and National Craft Centre have aimed to add value by working with males and females of this area to produce craft from straw and bamboo. The market size is marginal, discouraging mostly the male trainees of the Georgetown Craft Centre, but a group of women, mostly mothers, remains active.

The rough Atlantic off the Georgetown coast allows only for off-shore fishing. There is no coastal reef in the area off Georgetown. Local industries include a water bottling plant at Congo Valley, a rum distillery in Georgetown and an agro-processing plant at Grand Sable - owned by the Windward Island Farmers Association (WINFA) - that processes local fruits, but is in need of repairs. The mainly privately-owned distillery produced four brands of rum from imported molasses. The effluent from this plant is discharged into the mouth of the Perseverance River and is a major environmental concern. Citizens have also invested in tourism, restaurants, salons, boutiques and recreation.

The Black Point recreational facility is run by a Community Based Organizations (CBO's) under the auspices of the National Parks Rivers and Beaches Authority. This facility accommodates visitors from other communities and foreign tourists. It is very active in the tourist season, weekends and public holidays. Some stakeholder discussions to develop tours from the site through the Jennings and Congo valleys are on-going.

According to a 2004 investigation, forest lands are being lost at an annual rate of 3%2. Table 2 indicates that there are rare and endemic species present in the intervention area. However, the

country's biodiversity is threatened by various factors, including limited and ineffective land use planning, deforestation and other forms of habitat loss and fragmentation, excessive use of agro-chemicals, forest fires, sand mining, and destructive harvesting practices and unsustainable use of resources. Land degradation from illicit cultivations on the slopes of the La Soufriere is a major concern.

Table 2: Plants of global significance found in the Georgetown watershed, their distribution and status (Sources: <http://ecflora.cavehill.uwi.edu>, Adams, 2013 and www.saintlucianplants.com)

Common Name	Scientific name	Distribution
None known	<i>Peperomia vincentiana</i>	Lesser Antillean endemic; cloud montane rainforest
None known	<i>Begonia vincentina</i>	Lesser Antillean endemic, very wet semi-open spots
None known	<i>Miconia andersonii</i>	Lesser Antillean endemic, St Vincent to Grenada only
None known	<i>Miconia cornifolia</i>	Lesser Antillean endemic
Awali	<i>Clusia major</i>	Lesser Antillean endemic; rainforest tree, fruit eaten by parrot
Galba	<i>Calophyllum antillanum</i>	West Indian endemic, quite rare tree of coastal forest and secondary semi-evergreen seasonal forest
Gomier	<i>Dacryodes excelsa</i>	West Indian endemic, lower montane rainforest
Gwigwi	<i>Aiphanes minima</i>	West Indian endemic, lower montane rainforest

Several initiatives have been undertaken in SVG in order to achieve the CBD 2010 target, including species and habitat protection. Strategies and activities promoting the sustainable use of resources have been incorporated into the plans and programmes of the primary biodiversity agencies, such as the Forestry Department and the Fisheries Division, using the ecosystem approach. The Integrated Forest Management and Development Programme (IFMDP) was established in 2003 to address deforestation and illegal forestry activities. One of the main components of the project is the development of “viable employment alternatives in rural communities, preventing deforestation while promoting the sustainable use of the forest resources”⁴. Management interventions of the project proposed here focus on land stabilization within steep agricultural zones.

Adams (2013) conducted a stakeholder analysis to identify all the primary and secondary stakeholders who have vested interest in the issues that affect land degradation within the Georgetown watershed in order to select stakeholders with whom the project can work to achieve the goals and reduce the threats to the targets set (Figure 3). The suggested role of each stakeholder is shown in Table 3.

⁴ Government of Saint Vincent and the Grenadine (2003). Plan for the Integrated Forest Management and Development Programme.

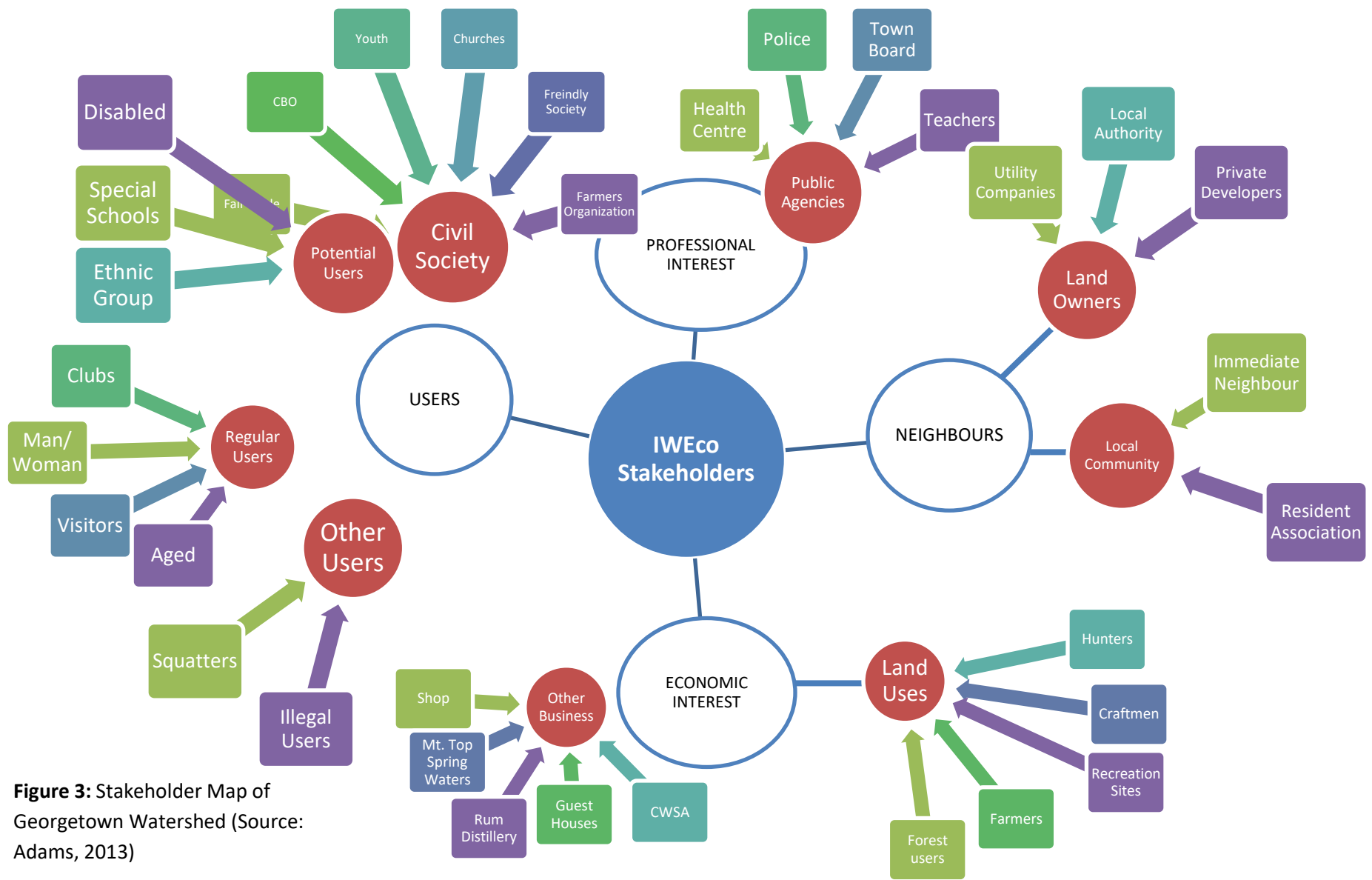


Figure 3: Stakeholder Map of Georgetown Watershed (Source: Adams, 2013)

Table 3: Georgetown watershed stakeholder analysis (Source: Adams, 2013)

SECTOR	Stakeholders	Interests	Source of Power	Potential Areas of Conflict	Capacity to Participate in Management
Private Sector	Farmers and Livestock Tenders	<ul style="list-style-type: none"> • Access to suitable land • Need affordable water for irrigation and crop production. 	<ul style="list-style-type: none"> • Economic • Food Security • Cultural tradition 	<ul style="list-style-type: none"> • Good agricultural practices (GAP) • Impact of animal waste in water. • Poor Garbage disposal 	<ul style="list-style-type: none"> • Low • Poorly organized. • Too dependent on government.
	Land Owners, Developers etc.	<ul style="list-style-type: none"> • Access to land • Access to rivers • Conveyance of structures. 	<ul style="list-style-type: none"> • Land ownership • Economic 	<ul style="list-style-type: none"> • Price • Access rights • Lease Agreements with government 	<ul style="list-style-type: none"> • High
	Agro Processors, Mountain Top Springs St Vincent Distillers	<ul style="list-style-type: none"> • Using portable water. • Rechargeable functions of the watershed 	<ul style="list-style-type: none"> • Economic 	<ul style="list-style-type: none"> • Cost of rights to extract water • Potential depletion of water source. 	<ul style="list-style-type: none"> • High • Value for money • Water quality and availability
Government	MARTFF	<ul style="list-style-type: none"> • Manage forested land to maintain ecological integrity and best soil conservation practices 	<ul style="list-style-type: none"> • Policy • Legislative • Control • Enforcement 	<ul style="list-style-type: none"> • Squatting • Extraction of forest products. • Improper use of land 	<ul style="list-style-type: none"> • High
	MHWE	<ul style="list-style-type: none"> • Monitor health and wellness • Inspection of foods 	<ul style="list-style-type: none"> • Legislative • Enforcement • Policy 	<ul style="list-style-type: none"> • Negative impact of waste disposal 	<ul style="list-style-type: none"> • High (results may determine future funding)
	Other Government Ministries and Statutory Organizations	<ul style="list-style-type: none"> • Infrastructure and services 	<ul style="list-style-type: none"> • Policy • Control • Legislative • Improving the quality of life 	<ul style="list-style-type: none"> • Impact of animal waste on water quality. • Consumers dependence on resources • Taxes, fines. 	<ul style="list-style-type: none"> • High • Significant influence on implementation
	CWSA	<ul style="list-style-type: none"> • Manage, • Collection, • Distribution, • Mitigate • Impacts of human activity 	<ul style="list-style-type: none"> • Legislative • Control • Policy 	<ul style="list-style-type: none"> • Private land ownership and access rights. • Improper disposal of waste • Water price to consumers 	<ul style="list-style-type: none"> • High • Regulations and maintenance
Civil Society	Cooperatives Fair Trade Consumers	<ul style="list-style-type: none"> • Need affordable supplies 	<ul style="list-style-type: none"> • Economic • Votes 	<ul style="list-style-type: none"> • Quality • Supplies • Costs 	<ul style="list-style-type: none"> • Moderate (lobbying)
Popular	Media		Outreach	Campaign	Low
	Politicians		Votes	Campaign	High
	Location			Land value, Accessibility	Low
	Environment		pollution	Clean. Future generations	Low

St Vincent & the Grenadines Sub-project 1.7

SECTOR	Stakeholders	Interests	Source of Power	Potential Areas of Conflict	Capacity to Participate in Management
		Planners		Evaluation, quality professionalism	Low
		History		Preservation, Reuse and revival	Moderate

The following is the list of national NGO and CBO stakeholders and anticipated roles in the project.

Table 4. Roles of lead local non-governmental and community-based organizations in support of the project.

Local organization	Role in project
National Parks, Rivers and Beaches Authority	<ul style="list-style-type: none"> Advocate and support improved management of the resources of the watershed (in partnership with the (Forestry Department) Assist in the monitoring of investments in meeting project targets
St Vincent and the Grenadines Hotel and Tourism Association	<ul style="list-style-type: none"> Promote eco-touristic opportunities associated with the project Advocate for improved environmental resources management for tourism product enhancement
St. Vincent and the Grenadines Chamber of Industry and Commerce	<ul style="list-style-type: none"> Provide collateral co-financing support to augment project investments Advocate and promote improved environmental management practices amongst the private sector
Windward Islands Farmers Association	<ul style="list-style-type: none"> Support the training of farmers in soil conservation and sustainable land use practices Promote improved and sustainable agricultural practices amongst farmers
Community Groups	<ul style="list-style-type: none"> Provide general support to the promotion of community involvement for advancement of improved environmental practices and sustainable livelihoods

While laws relevant to land degradation exist, some are out-dated, the regulatory and institutional frameworks are weak and policy implementation is inadequate. Many institutions lack requisite capacity, due to human resource and financial constraints to effectively implement statutory obligations for IWRM, SLM, BD, and SFM. This is exacerbated by poor coordination amongst agencies and low awareness of policy makers, who, consequently, do not prioritize wider public education on LD issues. As a result of few incentive programmes, stakeholder buy-in is limited, with non-state agencies and community organization lacking capacity to facilitate stakeholder engagement. Traditionally, the private sector and NGOs have played a minimal role in environmental and sustainable development matters. In the last decade, however, the NGOs have had greater involvement in environmental issues, with involvement largely in consultations on environmental and sustainability development issues, as well as the planning and

execution of small community environmental projects. However, none is listed for the Georgetown area⁵. The National Inter-sectoral Committee, NEAB, is a suitable anchor point for interventions at the policy level.

The most relevant legislation with reference to IWEco is:

- **Forest Reserve Conservation Act** makes provision for the conservation, management and proper use of the forests, watersheds, the declaration of a forest reserve, cooperative forests and conservation areas. The prevention and control of forest fires. A conservation plan is to be prepared by the department every 10 years. The plan must be commented on by several stakeholders- Department of Agriculture, Central Planning Unit, Central Water and Sewage Authority (CWSA), St. Vincent Electricity Services (VINLEC) and National Trust in a stakeholder consultation. In addition lands are to be demarcated as forest reserves and conservation areas in order to maintain clean and reliable water supply for domestic industrial and commercial use. Measures are to be taken to facilitate agricultural development and stabilize the land. The Forestry Department, through the Director of Forestry is responsible for the enforcement of this legislation.
- The **Environmental Services Act** No. 15 of 1991 makes provisions for the control of emissions and effluent discharge into water bodies. To date, no regulations are in place to assist with the enforcement of this Act.
- The **Central Water & Sewerage Act** provides a basis for water abstraction and distribution and for water quality management in SVG. The Act makes provision for the designation of protected areas for the protection of water resources. However, national standards for the discharge of treated effluents into surface water are not in place but the CWSA applies relevant WHO or EU standards.
- The **Central Water and Sewage Authority (CWSA) Act** of 1991 provides for the conservation, control apportionment and use of water resources in SVG. Section 15 provides the authority to acquire land in accordance with the Land Acquisition Act and subject to section 6 of the constitution section 17 gives the authority to construct works for the protection of the source of any body of water conservation and storage of water. Under section 21 the Minister on advice of the authority may declare protected areas for the conservation of water.
- The **Environmental Health Services Act**, No 14, 1991 makes the Ministry of Health and Environment the competent authority for the promotion and protection of public health by providing for and ensuring the protection and maintenance of the environment. Major functions under this Act are regulating, monitoring and controlling environmental pollution and investigating, preventing and remediating environmental pollution, including the management and disposal of solid, liquid and gaseous waste.
- The **Waste Management Act** of 2000 defines the roles and responsibilities of the National Solid Waste Authority and provides the framework for waste management planning and waste management operations in SVG. The Act is supported by the Solid Waste Management Regulations of 2006, which, among other things, establish the national standards for the handling of solid wastes such as derelict vehicles, scrap tires, used oil, special waste etc and specify the requirements for obtaining licences and permits in connection with waste management operations.
- The **Town and Country Planning Act** No. 45 of 1992 is the main planning and development legislation in SVG. The Act provides for the orderly and progressive development of land and the proper planning

⁵ Isaac, P (2013) Sustainable Land Management. Saint Vincent and the Grenadines. Issue Paper. <http://www.gov.vc/housing/images/stories/issue%20paper%20svg.pdf>

of town and country areas and provides for the control of development and matters connected therewith. A Physical Planning and Development Board is mandated to prepare national and local area land use plans and to administer the development control process. This Board is comprised of 10 public sector representatives and three members not in the public service. The Physical Planning Unit (PPU) within the Ministry of Housing, Informal Settlements, Lands and Physical Planning provides professional, technical and administrative support to the Board.

- The **Beach Protection Act** protects beaches and regulates the removal of sand, coral, stones, shingle, gravel and other materials from the shores of Saint Vincent and the Grenadines and adjoining seabeds. The 2009 revision further empowers the minister to make regulations to protect the beaches and to designate any beach for a protected area.
- The **Agricultural Act** of 1951 and Revised Edition of 2009 aims to ensure that owners and occupiers of agricultural land fulfill their obligation to the community by managing their land in such a manner as to prevent erosion and ruination of the soil and by cultivating all cultivatable land under their control. The Chief Agricultural Officer has the authority to bring a delinquent owner/occupier under supervision until remediation is effected. Subsequently, the owner/occupier is obliged to maintain any anti-erosion works.
- **National Park Act** of 2002 and Amendment of 2010 aims to make provision for protected areas and the establishment of an authority for protected areas, to make further provision for the preservation, protection, management and development of the natural, physical and ecological resources and the historical and cultural heritage of St. Vincent and the Grenadines and for connected matters. The Minister of Tourism, Sports and Culture shall take measures he thinks fit under the act to promote the establishment of protected areas for preservation, protection, management and development of the natural, physical and ecological resources and the historical and cultural heritage of St. Vincent and the Grenadines.

2.2 Overall Objective and Outcomes

2.2.1 Objective: The goal of this sub-project is to reduce and revert land degradation within the Georgetown watershed, Saint Vincent, by an integrated water, land and ecosystems management approach. Three objectives are being pursued:

- Objective 1: Reduction in risk posed by land degradation to the Georgetown community (flood and landslide), farmlands (soil loss and pollution) and waters (sediment load in rivers and near coastal marine habitats)
- Objective 2: Assist the establishment of revenue-generating small and micro businesses in target communities within the Georgetown watershed
- Objective 3: Enhanced cross-sectoral enabling environment for integrated landscape management by empowered communities in the Georgetown watershed

2.2.2. The expected outcomes are:

C1.1 Measurable stress reduction at project sites through appropriate sustainable water, land and ecosystems management interventions that account for climate change.

C1.2 Enhanced livelihood opportunities and socio-economic co-benefits for targeted communities from improved ecosystem services functioning

- C2.1:** Strengthened national and regional systems for monitoring of environmental status with respect to key international agreements.
- C3.1:** Strengthened policy and legislation for the effective management of water, land and ecosystems resources that account for climate change.
- C3.2:** Strengthened capacity of national and regional institutions and other stakeholders for water, land, and ecosystems management that take climate change into account.
- C4.1:** Improved information access and enhanced engagement of practitioners and other stakeholders via targeted knowledge sharing networks

2.3 Consistency with National and International Efforts

As outlined in the main project document, the GEF strategies for LD, BD and IW are consistent with Saint Vincent and the Grenadines' effort signatory of relevant multilateral environmental agreements (MEAs). The indicators selected to assess progress of IWECO project interventions also aim to support Saint Vincent and the Grenadines in their monitoring and evaluation of progress and reporting to these conventions.

Project interventions are consistent with the **Sustainable Forest management/REDD-Plus Strategy** with a view to multiple environmental benefits, such as conservation, sustainable management of forests and enhancement of forest carbon stocks, as well as strengthening the national spatial planning framework under Components 1 & 3. The project will support the sustainable land management interventions articulated under the **UN Convention to Combat Desertification and Land Degradation (UNCCD)** National Plan of Action (NAP), which has been drafted and is currently being validated for Saint Vincent and the Grenadines. A **Subregional Action Programme (SRAP)** is also underway⁶.

Saint Vincent and the Grenadines has developed its National Biodiversity Strategies and Action Plans (NBSAP; pending revision) and has submitted its 5th National Report to the **UN Convention on Biological Diversity (CBD)**. The NBSAP places top priority on the conservation of biodiversity. Key actions that include a more integrated approach to the management of protected areas in St. Vincent and the Grenadines, including reforestation and management of alien invasive species; capacity building; appropriate institutional and legislative reforms; institution of self-financing mechanisms for biodiversity conservation and ensuring equitable sharing of benefits. These coincide with the GEF BD strategic goal of *mainstreaming biodiversity conservation and sustainable use into production landscapes, seascapes and sectors*.

The pollution of soil, water and the atmosphere, and global climatic change affect all ecosystems and as such are management priorities for the Vincentian Government and thus themes that run throughout all of the sections on the NBSAP. The regional IWECO project build on mainstreaming of IWRM and ecosystems management principles, advanced in several Caribbean countries under the **Integrating Watershed and Coastal Area Management in Caribbean Small Island Developing States (GEF-IWCAM)** Project, into national development frameworks by implementing innovative solutions for reduced pollution, improved fresh and coastal water resources management in consideration of the challenges imposed by climate change and climate variability.

⁶ UNCCD (2011) Country Profiles – Latin American and Caribbean Regional (draft for internal purposes only)

Saint Vincent and the Grenadines is participating in a number of complementary regional and global projects, which have committed co-finance towards the IWECO FSP:

- **Enhancing the adaptive capacity of rural economies and natural resources to climate change in selected Caribbean small island and low lying coastal developing states:** This GIZ-funded and CARICOM/CARPHA-led project on the management and protection of land based natural resources and agricultural production systems addresses some of the main threats and challenges posed by climate change to the marine and coastal resources through capacity-building that will be coordinated to complement the IWECO objective.
- **The Caribbean Pilot Program for Climate Resilience (PPCR), Regional Strategic Program for Climate Resilience (SPCR)** is financed by the Climate Investment Funds (CIF) and aims to (i) pilot and demonstrate approaches for integration of climate risk and resilience into development policies and planning, (ii) strengthen capacities at the national levels to integrate climate resilience into development planning, (iii) scale up and leverage climate resilient investment, building upon other ongoing initiatives; and (iv) enable learning-by-doing and sharing lessons at the country, regional and global levels. In Saint Vincent and the Grenadines, this project will support monitoring and evaluation of environmental hazards, watershed management, public sensitization and awareness, integrated planning, and data management. It will also build capacity in Saint Vincent and the Grenadines for this SID to participate more effectively in regional strategic initiatives for climate resilience, particularly, the collection of climate relevant data, data analysis, impact modeling and applied adaptation.
- The **Critical Ecosystem Partnership Fund (CEPF) in the Caribbean Islands Biodiversity Hotspots** is a US\$6.9 million grant, managed by the Caribbean Natural Resources Institute (CANARI), to support civil society in developing and implementing conservation strategies and raising public awareness on the implications of loss of biodiversity. Given the implementation period of 2010 to 2015, the IWECO proposal was coordinated with CANARI for optimal complementarity.
- The **Caribbean Challenge**, led by the Nature Conservancy (TNC), aims to protect the health of Caribbean lands and waters and pilots a model of sustainable, multi-country funding that could help solve the problem of unfunded, ineffective national parks in the Caribbean. In Saint Vincent and the Grenadines as well as Grenada, TNC is working with local partners to survey all the Grenadines, in order to identify threats and conservation strategies, and map priority sites in need of protection, with the goal of developing and managing a system of cross-national marine protected areas.
- **Coastal Protection and Climate Change Adaptation in Small Island Developing States in the Caribbean Project** is a KfW Development Bank funded project and implemented by CCCCC across St. Lucia, St. Vincent and the Grenadines, Grenada and Jamaica. The project includes local adaptation measures in the protection, rehabilitation and sustainable management of coastal zones, improved management of existing protected areas (infrastructure, equipment, management plans, etc.), reduction of anthropogenic stressors on coastal ecosystems (drainage channels, sediment entries, unadapted/unadjusted tourism), reduction of non-sustainable livelihoods/use of natural resources (certain fishing practices, use of firewood, etc), rehabilitation of existing ecosystem (mangroves, corals, beach vegetation, seagrass beds) and establishment of artificial ecosystem (artificial reefs, possibly in conjunction with coral transplanting).
- **Climate Change Adaptation in the Eastern Caribbean Fisheries Sector Project** is a USD 5,460,000 grant funded by GEF and implemented in Antigua and Barbuda, Dominica, Grenada, St Lucia, St Kitts and Nevis, St Vincent and the Grenadines, and Trinidad and Tobago. The objective of this

project is to increase resilience and reduce vulnerability to climate change impacts in the Eastern Caribbean Fisheries Sector, through introduction of adaptation measures in fisheries management and capacity building of fisherfolk and aquaculturists. The project aims to create better understanding and awareness of climate change vulnerability, create resilience of fisherfolk, fisherfolk organizations and aquaculturists, and improve governance by mainstreaming climate change adaptation in multilevel fisheries governance.

2.4 Activities, Outputs

Component 1: To develop and foster the implementation of targeted innovative, climate-change resilient approaches to integrated sustainable land and water resources management and enhanced management and maintenance of ecosystem services within the Georgetown Watershed.

Sub-component 1.1 - Innovative Solutions

Activities

- **1.1.1.1a** Reforest at least 2 hectares with native species at Perseverance
- **1.1.1.1b** Thin 5 hectares of forest through at least one 1 thinning cycle
- **1.1.1.1c** Conduct a parrot census to determine health and status of population
- **1.1.1.1d** Improving 635.46 m² access roads to watershed resources
- **1.1.1.1e** Conduct water sampling and analysis for a relevant number of key spots for Vincent and for Grenadines.
- **1.1.1.2a** Some 1,800 metres of riverbank stabilized within the target area using fruit trees, glory cedar and other species and bioengineering measures
- **1.1.1.2b** Construction of a 20 feet ford (apron) across the river to facilitate access to forest plantation. There has been a build up of boulders and erosion of river bank due to the passage of Hurricane Tomas (and worsened by the subsequent rains in April 2011 and December 2103, 2015 and 2016)
- **1.1.2.1** Demonstrate Sustainable Land Management Principles, techniques and applications 22.2 square miles (5720 hectares) of forest.

Outputs

- Access restored to upper watershed to maintain critical forest for water and soil conservation, through the installation of river crossing platform and improved road access at Perseverance.
- Reforested and stabilized lands in Perseverance, resulting in increase in population species abundance and diversity toward prior natural condition of ecosystem (to be used as field demo; best practice guidelines)
- Detailed parrot census conducted and status of the species determined and water sampling and analysis conducted & analytical data available

Outcomes

- ***Measurable stress reduction at project sites through appropriate sustainable water, land and ecosystems management interventions that account for climate change.***

Sub-component 1.2 – Socio-economic benefits (supported through the GEF Small Grants Programme)

Activities:

- **1.2.1.1a** Upgrade five kilometres of existing forest trail in the watershed to be branded ‘Jennings Bird Watching Trail’ to an acceptable standard to ensure walking safety through the installation of appropriate walking surfaces, including one rest station/ interpretation centre, signage and at least 4 lookout platforms
- **1.2.1.1b** Designate at least 50 hectares of forest protected directly for ecotourism purposes linked to the trail rehabilitation
- **1.2.1.1c** Install at least 2 investments in dry-system effluent management at selected pig farms that currently constitute a significant threat to ambient water quality

Outputs:

- Investment in the Jennings Bird Watching Forest Trail with upgraded recreational facilities to include requisite capacity building
- Integrated/sustainable waste management for pig production with inputs for organic agriculture (100% of the effluent/compost utilized in crop production)

Outcomes:

- ***Enhanced livelihood opportunities and socio-economic co-benefits for targeted communities from improved ecosystem services functioning through an increase in revenue generating ventures***
- ***Increased consumptive use of riverine and near-shore marine fisheries (subsistence fishing - tri-tri, crayfish, mullets, macaw fish) as a result of improved ecosystem/watershed management***

Component 2: Strengthen Sustainable Land Management (SLM), Integrating Water Resources Management (IWRM) and ecosystems Monitoring and Indicators frameworks in Saint Vincent and the Grenadines

Component 2.1 - Systems for monitoring

Activities

- **2.1.1.1** Participatory (rapid) water and land-related diagnostic analysis for the Georgetown watershed to inform watershed basin master plans (frameworks) developed for Georgetown watershed and best practice guidelines / code of practices for adoption in national regulations;
- **2.1.1.2** Integrative (across sectors/users) appropriate decision support tools (water information systems, spatial [GIS] databases) by Year 3 to support the policy development and legislative

reform processes as well as to provide a measure of success in addressing water quality and water use problems;

- **2.1.1.3** Mainstreaming SLM and IWRM into national accounts through the application of an indicator framework to monitor improvements in water resources management and land degradation mitigation.

Output

- Adoption into national accounts of IW and LD, and BD-related indicators of process, stress reduction, and environmental and socioeconomic status to monitor improvements in the management of land and water resources and wastewater

Outcome

- ***Strengthened national and regional systems for monitoring of environmental status with respect to key international agreements***

Component 3: To strengthen policy, legislative and institutional reforms and capacity building to support Sustainable Land Management (SLM), Integrating Water Resources Management (IWRM) and ecosystem services management taking into consideration climate change resilience building in Saint Vincent and the Grenadines

Component 3.1 - Policy & legislation

Activities

- **3.1.1.1** Conduct targeted legislative reviews to support design and development of water/waste water and SLM policies or augment existing instruments
- **3.1.1.2** Drafting of new and/or revised policies and regulations on water supply and sanitation integrating ICZM and BD conservation issues
- **3.2.1.1** Facilitate the re-constitution of the National Environmental Advisory Board (NEAB)

Outputs:

- New and/or revised policies and regulations on water supply and sanitation based on the IWRM Roadmaps (and IWRM/WUE strategies where they may exist), National Plans of Action for SLM and ecosystem conservation
- Strengthened inter-sectoral National Environmental Advisory Board (NEAB)

Outcome:

- ***Strengthened policy and legislation for the effective management of water, land and ecosystems resources that account for climate change***

- ***Strengthened capacity of national and regional institutions and other stakeholders for water, land, and ecosystems management that take climate change into account***

Component 3.2 - Capacity building

Activities:

- **3.2.2.1** Develop and execute capacity building programmes for key public and private sector stakeholders for improved (and mainstreamed) sustainable water and land resource management at both policy and technical levels
- **3.2.2.2** Develop and execute public awareness and sensitization programmes to support capacity building efforts and produce the following information and knowledge management products, activities and events:
 - branding of flagship endemic species on bottled water extracted from the watershed
 - social media promotions
 - environmental music videos and St. Vincent Environment Music Festival
 - stage play
 - mascot
 - media awareness workshop,
 - forestry summer programmes
 - interpretative signs along nature trails
 - school awareness campaign.

Outputs:

- Programmes for training and capacity building to support the implementation on LD and watershed management, integrating SLM & ecosystem management, IWRM/WUE and ICZM management issues to support mainstreaming and implementation throughout the relevant government, private sector agencies and civil society organizations
- Programmes for of cross-sectoral sensitization and awareness-raising for all relevant stakeholders on LD and watershed management, integrating SLM & ecosystem management, IWRM/WUE and ICZM management issues to support mainstreaming and implementation

Outcome:

- ***Strengthened capacity of national and regional institutions and other stakeholders for water, land, and ecosystems management that take climate change into account***

Component 4: enhance knowledge exchange, promotion of best-practices, replication and expanding stakeholder involvement in Saint Vincent and the Grenadines

Component 4.1 - Engagement and knowledge access

Activities

- **4.1.1.1** Support technical exchange and internships among participating SIDs on best practices for land degradation mitigation and improved natural resources management
- **4.1.1.2** Develop project-specific and country-relevant information and knowledge products including the development of a web portal (using existing national platforms and the overall project website) for knowledge sharing
- **4.1.2.1** Contribute to the expansion, updating and promotion of the existing community-based resource assessment tool (originally developed by the GEF IWCAM Project, in which Saint Vincent and the Grenadines also participated) thereby making information and learning resources for use in community-(and school) based assessments of natural resources

Outputs:

- Suite of best practices and lessons gathered from the national project that are exchanged with the Caribbean Region as well as other SIDS regions
- Information and knowledge outputs from the national project contributed to a Community of Practice (COP) for land degradation mitigation for the Caribbean region for vertical as well as horizontal (multi-sectoral) information exchanges with local stakeholders, as well as debates on the needs and aspirations of people, project deliverables and environmental realities

Outcome

- ***Improved information access and enhanced engagement of practitioners and other stakeholders via targeted knowledge sharing networks***

2.5 Incremental Reasoning

2.5.1 Baseline:

The preceding GEF-IWCAM Project initiated a process of capacity building in the management of watersheds and coastal areas through activities to plan and manage aquatic resources and ecosystems on a sustainable basis at the regional level. The project developed toolkits to support IWCAM reforms in policy, legislation and institutional arrangements, but also implemented pilot demonstration interventions aimed at improving the quality of fresh and coastal water resources for up-scaling and replication. Thus, the IWCAM end-of project achievements can be used as baseline for IWECO.

Saint Vincent and the Grenadines did not have a national pilot under IWCAM. However, the following innovative solutions relevant to Saint Vincent and the Grenadines were developed in other participating countries and are available for transfer and adaptation:

- **Wastewater management and pollution control** in Elizabeth Harbour, Exuma, the Bahamas; McKinnons Pond, Antigua and Barbuda; the AuLeon community (Fond d'Or watershed), St. Lucia
- **Integrative land use (good agricultural practices and sustainable land management), waste management and pollution control** in the Cienfuegos Watershed and coastal area, Cuba; in the Drivers River Watershed in East-Central Portland in Jamaica; and in the Courland Watershed and Buccoo Reef, Tobago
- **Industrial pollution control** in the lower Haina River basin, Dominican Republic

As noted by a recent UNCCD report⁷, Saint Vincent and the Grenadines currently has no nation-wide DLDD-specific monitoring systems in place. There is an environmental monitoring system partially covering DLDD established at the national level. A monitoring system available at the sub-national level and under the control of the Forestry Department covers watershed monitoring, i.e. stream flow and deforestation. Saint Vincent and the Grenadines is also part of the Caribbean Drought Monitoring Network. However, there is a general lack of baseline information (e.g. water quality standards) that would allow for determination of change of status; policy stance/norms that limits exchange of relevant information, e.g. water quality and financial data, or data that establish a causal relationship between land degradation/pollution and human health.

According to the NBSPA of Saint Vincent and the Grenadines, progress towards implementation of the Cartagena Convention framework is moderate in Saint Vincent and the Grenadines. The Protocol Concerning Specially Protected Areas and Wildlife in the Wider Caribbean (SPA) was adopted in 1990, but has not yet entered into force. St. Vincent and the Grenadines has not taken legal steps to implement the SPA Protocol.

As a result of weak a weak regulatory framework and the above-mentioned barriers to implementation of existing laws and policies, there is evidence of multiple land degradation and poor agricultural practices, but also of biodiversity of global significance within the Georgetown watershed (see detailed baseline in logframe for specifics). Available data are not fully analysed or used in decision making. Many institutions lack requisite capacity due to human resources and financial constraints; staff turnover is high. Inter-agency coordination is deficient.

Not all relevant international and regional treaties that have been ratified have also been integrated into national law. Some existing national legislation lacking supporting regulations, while existing instruments are dominated by command and control, rather than participatory approaches. As a result stakeholder buy-in is weak.

2.5.2 Business as usual scenario:

A significant portion of the island of St Vincent has been declared forest reserves, which are critical for the protection of biodiversity of global importance, surface and groundwater resources, scenic and touristic purposes. However forest reserve boundaries are unmarked, and lack of patrolling sanctions encroachment on the reserves and other government lands which, in turn, has caused conversion from

⁷ UNCCD (2011) *ibid*

forest to banana and food crops. Serious threats emanate from encroaching farming activities and illegal crop cultivation. Deforestation of steep slopes is likely to lead to soil-erosion, landslides, and lowered water quality through siltation of potable water sources. Siltation can result in degradation of offshore reefs and fisheries, and cause damage to hydroelectric equipment. The continued denudation of forestland in St. Vincent threatens wildlife habitat including that of the St. Vincent parrot in Vermont, and Cumberland, and the Congo, Jennings, and Perseverance Valleys. The nature-tourism potential of affected areas can be severely impaired.

If unsustainable land management practices persist, as a result of lack of awareness of alternatives, an inadequate regulatory framework, weak agencies and poor stakeholder involvement, loss of forests would continue at an estimated rate of 3% per year, reducing both the quantity and quality of water in the Georgetown watershed. This would further compound the reduction in good quality water that can be extracted as a result of river course and infrastructure damage during Hurricane Tomas and the 2011 floods. Critical habitats for wildlife and plants of global significance would decrease, while the fragmentation between remnants would increase, with the concomitant effect on population dynamics at the landscape level.

The buffering capacity of forest and riparian strips would continue to decline. Erosion of fertile soil and sedimentation along the rivers would increase, ultimately building up in downstream coastal and marine ecosystems, whose services would be disrupted, particularly when water flow is augmented by heavy rains or storms.

There is currently no comprehensive coastal zone management programme nor specific regulations or requirements for protecting coastal resources⁸. Streams, rivers and coastal water quality in populated areas are threatened by pollution from inadequate disposal of sewage and gray water from domestic and industrial activities. In Georgetown, the high ground water level impedes the absorptive capacity of the soil, and increases the possibility for water pollution and nutrient enrichment of marine waters in coastal areas. Water polluted by industrial effluent run-off into coastal waters results in the deterioration of reefs. Pollution caused by the distillery and pigs farms is already a health and environmental hazard. Unsightly and foul-smelling sections of the watershed are not only unattractive to visitors, but affect the daily lives of local residents and could probably led to health implications. Without strengthening the regulatory and institutional framework for the implementation of acceptable ownership/management rights and management of environmental/water resources of St Vincent, stress levels would continue to increase, with deteriorating effects on environmental health ecosystem functioning and associated livelihoods, particularly of those defined as poor.

2.5.3 Incremental reasoning:

Project interventions in Saint Vincent and the Grenadines will mostly focus on the GEF Land Degradation (LD) Strategy by slowing and reversing current trends in land degradation, caused by deforestation and unsustainable land management practices. Specifically, the project will address GEF 5 Strategic Objective 3 "*to reduce pressures on natural resources from competing land uses in the wider landscape*" with co-benefits in the Biodiversity, Sustainable Forest Management (SFM) and International Waters focal areas.

⁸ Isaac (2013) ibid

Country-level interventions will seek to increase forest and tree cover and implement landscape approaches for terrestrial and marine protected area management within the “ridge to reef” framework. Integrated programming is likely to trigger transformational changes in the agriculture and forest sectors. The approximate annual costs for investments are just over US\$220,000. This is being complemented by externally (international donors) and internally (Government of St Vincent and the Grenadines, private sector) financed programmes and activities.

Following a consultative needs assessment in the Georgetown watershed, inclusive of a knowledge, awareness, practices & behaviour (KAPB) survey and gender audit, innovative solutions will be adapted for the participatory development of a watershed basin master planning framework for the Preseverance River/Georgetown watershed with investment in:

- integrated, sustainable waste management for pig production and organic agriculture
- reforestation and rehabilitation of Perseverance lands that were affected by Hurricane Tomas and April 2011, 2013, 2015 and 2016 floods.
- installation of field demonstrations for land rehabilitation and restoration, including revegetation, conservation measures, drainage, etc.
- improvement of distillery effluent/waste management at St Vincent Distilleries

These approaches are consistent with the Sustainable Forest management/REDD-Plus Strategy, where management regimes that strengthen conservation, sustainable management of forests and enhancement of forest carbon stocks will be supported. They will also bring about co-benefits in BD and IW. Foreseen biodiversity and SFM co-benefits include conservation of biodiversity of global significance, improved forest management practices with concomitant increased carbon stored in forest ecosystems and/or emissions avoided from deforestation and forest degradation. International Water co-benefits will result from the process of stress reduction and lead to improved quality and flow of water bodies.

At the strategic outcome level, the project will enhance the cross-sectoral enabling environment for integrated landscape management and enhance institutional capacity of agencies involved. The project has been designed to secure multiple environmental benefits and to strengthen the spatial planning framework, including the development of regulatory and institutional framework and the necessary tools to promote SFM and SLM in St Vincent and the Grenadines. IWeco and the complimentary PPCR/SPCR project will increase the capacity to monitoring and evaluate environmental hazards in Saint Vincent and the Grenadines. Indicators were selected with international standards and reporting obligation to MEAs in mind, so that sustainable use is made of the acquired capacity. The UNDCC report states that for Saint Vincent and the Grenadines no nationwide DLDD-specific monitoring systems are currently in place.

At the capacity-building level, community codes of practices and best practice guidelines for regional/global (SIDs) audiences will be developed and demonstrated. Training of trainers in workshops and cross-sectoral sensitization and awareness-raising will assist in widening adoption. The identification, strengthening and mainstreaming of indicators in national accounts and global reporting as well as the participatory development of a monitoring protocol for periodic assessment of environmental indicators (ground and surface water quality in particular) at Georgetown intervention sites will strengthen the National Environmental Advisory Board, existing decision-making tools and increase community buy-in. Upgraded facilities at Jennings Bird Watching Forest Trail will

improve sustainable livelihoods. Technical exchanges between countries and dissemination of lessons learnt via a range of media will enhance regional and global (SIDs) collaboration.

2.5.4 Expected benefits:

The St. Vincent National Economic and Social Development Plan 2013-2025 states that a 'Healthy ecosystem and the sustainable use of natural resources are integral components in the continued survival and development of the nation'. This project will provide a methodological framework in which sustainable development can occur. In so doing, the entire nation will benefit from its outputs and impacts. Farmers in denuded areas will benefit directly by having soil restoration strategies developed and implemented on their behalf. The stabilization of the riverbanks will bring multiple benefits in the form of clean water, fruits from the trees used to stabilize the riverbanks as well as slowing any possible change in river course that may directly affect communities downstream. This increased vegetation will result in decreased CO₂ and increase O₂ levels in the atmosphere, improvement in the quality of the physical environment of the project area and general improvement in the quality of life.

Implementation of this project will bring new employment opportunities to the community where the project would be implemented thus improving the socio-economic condition of St. Vincent and the Grenadines. Further, the regional nature of the project will foster the regional integration process and strengthen information exchange.

While Saint Vincent and the Grenadines has made considerable progress in human development, there is still a high incidence of poverty in both rural and urban areas. The project will achieve an improvement of the social and economic welfare of Georgetown residents through improved water and wastewater management and improved ecosystem services functioning, equitable for gender and disadvantaged groups, specifically by:

- Access to safe drinking and ambient water for women and men as well as disadvantaged groups.
- The participatory development of at least one community-based livelihood-building initiative

Integrative benefits through the GEF multi-focal area management approach - Sustainable Forest Management, Land Degradation and International Waters: Sustainable forest management investments will augment efforts at mitigating land degradation that has been of concern at the national level. The St. Georges Watershed on the eastern corridor of mainland St. Vincent has been severely impacted by recent storm events which have resulted in land degradation that was in part triggered by poor land management practices associated with agriculture mainly in the mid-reaches of the watershed. The passage of Hurricane Tomas in October 2010 followed by an extreme rainfall events in April 2011, 2013, 2015 and 2016 led to many slope failures, surface erosion and blockages and alteration of the path of the main river that led to flooding and destruction of assets downriver. Several farm holdings have been, and will continue to be compromised in terms of short to medium-term productivity losses if restorative measures are not implemented. The upper watershed that extends well into the interior mountains remains substantially under forest cover, however some areas were affected by the significant storm events where landslides continue to contribute to sediment loading to the river channel increasing the flood risk downstream.

The SFM investments will employ a combination of traditional planting of forest species that are indigenous to the local area so as to maintain the ecological character along with integration of tree crops (in agro-forestry systems) of favour to farmers to assist with land conservation while contributing to economic benefits. Specific locations particularly along the river channel segments that were severely impacted will be stabilized through a combination of tree planting and bio-engineered solutions. Through

on-site land and forest cover investments within 15 hectares over the target watershed areas, it is expected that an estimated 1,403.3 equivalent tonnes of CO₂ over the life of the project, or an average of 280.7 tCO₂eqv/year will be sequestered (Annex 3.4).

The actions under the project will be supported by improvement in the policies that mainstream sustainable land and forest management within the wider national development frameworks so as to reduce the extent of land degradation in the country. The key outcome from investments supported by the GEF SFM contributions are in the promotion of good management practices in existing forests that are effected through enhancement of the enabling environment and uptake and up-scaling of lessons learnt in the management of land and forest resources.

2.5.5 Gender dimensions

The project will seek to carefully consider gender mainstreaming in the development and implementation of SLM/ecosystems management, ensuring equitable access to and management of safe and adequate water, for domestic supply, sanitation, food security and environmental sustainability by women and men, as well as vulnerable and marginalized groups in the Georgetown watershed, Saint Vincent. Land degradation caused by land use changes, poor agricultural and land use practices, along with poor and/or indiscriminate waste discharges influences the mid to long-range sustainable access to resources for agriculture and fisheries development, and development and sustainability of productive sectors such as tourism. These influences have very direct economic value-chain impacts where the flow of benefits are compromised which in turn affects household income security, maintenance of health and stability in the home and the community at large. The gender roles in counterbalancing these impacts will need to be evaluated so as to determine relative influence and how the project can support means to address gender-based deficiencies and understand strengths in adapting.

Emphasis will be placed on advancing gender mainstreaming within policy and capacity building elements of the project; at the national level and across the regional components of the project mainly within Component 3 related to policy. During project inception, a gender audit is to be undertaken within the project area and environs so as to generate information which is not currently available. The project will seek to carefully consider gender mainstreaming in the development and implementation of SLM/ecosystems management, ensuring equitable access to and management of safe and adequate water, for domestic supply, sanitation, food security and environmental sustainability by women and men, as well as vulnerable and marginalized groups in the Georgetown watershed, Saint Vincent.

In particular, as it relates to household income security, a previous identification of craft making as a source on livelihood enhancement, had the result that at the end of the intervention only the women remained engaged. In this instance therefore the enhancing of livelihood opportunities will be undertaken in a manner as to ensure equity along gender lines.

2.6 Budget and Co-finance

The total cost of the St Vincent and the Grenadines sub-project is **2,608,560** USD. The GEF Grant is **999,685** USD. The co-financing is **1,608,875** USD, provided by the international regional support agencies; UNEP Car/RCU, UNDP, CARPHA, OECS and UWI.

Table 5: Sub-project 1.7 – Entire budget at activity level

National Sub-project 1.7: St Vincent & the Grenadines	GEF Funding	Co-Financing	Total component Cost
Component 1.1 Measurable stress reduction at project sites through appropriate sustainable water, land and ecosystems management interventions that account for climate change.	372,216	506,490	878,706
Sub-component 1.1.1 Riverbank rehabilitation/restoration investments along Perseverance River, Jennings and Congo Valley and Langley Park Rivers	327,216	299,370	626,586
Activity 1.1.1.1 Watershed restoration and management , including liberation thinning, improvement to access road and parrot census	282,216	204,680	486,896
Activity 1.1.1.2 Riverbank restoration	45,000	94,690	139,690
Sub-component 1.1.2: Investments in rehabilitation/reforestation of lands at Perseverance impacted by Hurricane Tomas and the 2011, 2013, 2015 and 2016 floods	45,000	207,120	252,120
Activity 1.1.2.1 Demonstrating Sustainable Land Management Principles	45,000	207,120	252,120
Outcome 1.2 Enhanced livelihood opportunities and socio-economic co-benefits for targeted communities from improved ecosystem services functioning	60,000	129,130	189,130
Sub-component 1.2.1 Community-based investments to enhance revenue generation within target communities supported by GEF-SGP	60,000	129,130	189,130
Activity 1.2.1.1 Community resilience; improving livelihood practices	65,000	129,130	189,130
Component 2.1: Strengthened national systems for monitoring of environmental status with respect to key international agreements.	62,700	239,785	302,485
Sub-component 2.1.1: Suite of project site and national-level IW and LD, and BD-related indicators of process, stress reduction, and environmental and socioeconomic status and field monitoring systems	62,700	239,785	302,485
Activity 2.2.1.1 Participatory (rapid) water and land-related diagnostic analysis (using a community participatory approach) for the Georgetown watershed informs a watershed basin master plans (frameworks) developed for Georgetown watershed and best practice guidelines / code of practices for adoption in national regulations	8,000	56,720	64,720
Activity 2.2.1.2: Installation of a monitoring protocol for periodic assessment of identified environmental indicators at intervention sites and decision support tools (water information systems, spatial [GIS] databases)	28,500	87,355	115,855
Activity 2.2.1.3 Mainstreaming SLM and IWRM; develop and apply an indicator framework	26,200	95,710	121,910
Component 3.1: Strengthened policy and legislation for the effective management of water, land and ecosystems resources that account for climate change.	46,520	174,710	221,230

St Vincent & the Grenadines Sub-project 1.7

Sub-component 3.1.1: New and/or revised policies and regulations on water supply and sanitation based on the IWRM Roadmaps (and IWRM/WUE strategies where they may exist), National Plans of Action for SLM and ecosystem conservation.	46,520	174,710	221,230
Activity 3.1.1.1 Legislative review to support water/waste water and SLM policies.	10,520	62,290	72,810
Activity 3.1.1.2 Drafting of new and/or revised policies and regulations on water supply and sanitation integrating ICZM and BD conservation issues	36,000	112,420	148,420
Component 3.2: Strengthened capacity of national institutions and other stakeholders for water, land, and ecosystems management that take climate change into account.	145,243	376,340	525,583
Sub-component 3.2.1: Strengthened National Inter-sectoral Committee - NEAB	40,300	179,260	223,560
Activity 3.2.1.1 Capacity building for management effectiveness	44,300	179,260	223,560
Sub-component 3.2.2: Training programmes, resources and built capacity for enhanced water, land and ecosystem management amongst stakeholders	84,943	130,240	215,183
Activity 3.2.2.1 Capacity building in related Ministries to use policy in decision making	25,000	96,820	121,820
• Activity 3.2.2.2 Public Awareness and sensitization, including environmental music video and music festival, etc.	59,943	33,420	93,363
Sub-component 3.2.3: Cross-sectoral sensitization and awareness-raising programmes for all relevant stakeholders management, IWRM/WUE and ICZM management issues to support mainstreaming and implementation	20,000	66,840	86,840
Activity 3.2.3.1 Capacity building of selected ministry staff and non-state actors to support the mainstreaming of SLM and IWRM	20,000	66,840	86,840
Component 4.1: Improved information access and enhanced engagement of practitioners and other stakeholders via targeted knowledge sharing networks	107,665	182,420	290,085
Sub-component 4.1.1: Technical exchanges and conference participation to facilitate knowledge transfer across the Caribbean and other SIDS regions	77,465	164,320	241,785
Activity 4.1.1.1 Support technical exchange and internships among participating SIDS	30,315	77,980	108,295
Activity 4.1.1.2 Knowledge Management for project management effectiveness	47,150	86,340	133,490
Sub-component 4.1.2: Suite of best practices and lessons learnt contributing to a Community of Practice (COP) in integrated water, land and ecosystems management for SIDS	30,200	18,100	48,300
Activity 4.1.2.1 Strengthen community-based resource management	30,200	18,100	48,300
GEF IW- Support to minimization of LBSP	75,000	0	0
GEF SFM support to reforestation and forest livelihood	121,342	0	0
TOTAL	999,685	1,608,875	2,608,560

2.6.1 Co-financing

Table 6. Co-finance

Name of Co-financier	Sources of Co-financing	Type of Co-financing	Amount
Government of Saint Vincent and the Grenadines*	Government	In kind	\$0
UNEP Car/RCU	GEF Agency	In kind	\$210,000
UNDP	GEF Agency	In kind	\$35,000
CARPHA	Other Multilateral Agency	In kind	\$448,875
OECS	Other Multilateral Agency	In kind	\$840,000
UWI	Other - University	In kind	\$75,000
	Total co-financing		\$1,608,875

*Note: co-financing from the Government of St. Vincent & the Grenadines will be negotiated at project inception

Consultants working for technical assistance in the subproject description:

Table 7. Consultants working for technical assistance in the subproject description

Activity	GEF(\$)	Co-financing (US\$)	Project total (US\$)
International consultants	0	0	0
Local consultants	174,420	78,125	256,545
Totals	174,420	78,125	256,545

2.7 Project Timeline

Table 8: Workplan and Timeline

M = Meeting, **R** = Report (includes other publications), **W** = Workshop, **S** = Communication Strategy, **MR** = Mid-term Report, **TR** = Terminal Report, **I** = Project website (NOTE: the timing of the outputs are indicative; these will be finalized on project inception and subject to review during project implementation)

National Sub-project 1.7: St Vincent & the Grenadines	Year 1				Year 2				Year 3				Year 4			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Outcome 1.1 Measurable stress reduction at project sites through appropriate sustainable water, land and ecosystems management interventions that account for climate change.																
Sub-component 1.1.1 Riverbank rehabilitation/restoration investments along Perseverance River, Jennings and Congo Valley and Langley Park Rivers																
Activity 1.1.1.1 Watershed restoration and management , including liberation thinning, improvement to access road and parrot census	W/R			R		R		R								
Activity 1.1.1.2 Riverbank and river course restoration	W/R			R												
Sub-component 1.1.2: Investments in rehabilitation/reforestation of lands at Perseverance impacted by Hurricane Tomas and the 2011, 2013, 2015 and 2016 floods																
Activity 1.1.2.1 Demonstrating Sustainable Land Management Principles	W/R			R		R										
Outcome 1.2 Enhanced livelihood opportunities and socio-economic co-benefits for targeted communities from improved ecosystem services functioning																
Sub-component 1.2.1 Community-based investments to enhance revenue generation within target communities supported by GEF-SGP																
Activity 1.2.1.1 Community resilience; improving livelihood practices					W			R		R		R	W/R			
Outcome 2.1: Strengthened national systems for monitoring of environmental status with respect to key international agreements.																
Sub-component 2.1.1: Suite of project site and national-level IW and LD, and BD-related indicators of process, stress reduction, and environmental and socioeconomic status and field monitoring systems																

St Vincent & the Grenadines Sub-project 1.7

National Sub-project 1.7: St Vincent & the Grenadines	Year 1				Year 2				Year 3				Year 4			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Activity 2.1.1.1 Participatory (rapid) water and land-related diagnostic analysis (using a community participatory approach) for the Georgetown watershed informs a watershed basin master plans (frameworks) developed for Georgetown watershed and best practice guidelines / code of practices for adoption in national regulations	W	R														
Activity 2.1.1.2: Installation of a monitoring protocol for periodic assessment of identified environmental indicators at intervention sites and decision support tools (water information systems, spatial [GIS] databases)			W	R		R		R		R	W/R					
Activity 2.1.1.3 Mainstreaming SLM and IWRM; develop and apply an indicator framework	W			R		R		R		R		R		R		R
Outcome 3.1: Strengthened policy and legislation for the effective management of water, land and ecosystems resources that account for climate change.																
Sub-component 3.1.1: New and/or revised policies and regulations on water supply and sanitation based on the IWRM Roadmaps (and IWRM/WUE strategies where they may exist), National Plans of Action for SLM and ecosystem conservation.																
Activity 3.1.1.1 Legislative review to support water/waste water and SLM policies.					W			R								
Activity 3.1.1.2 Drafting of new and/or revised policies and regulations on water supply and sanitation integrating ICZM and BD conservation issues						R		R								
Outcome 3.2: Strengthened capacity of national institutions and other stakeholders for water, land, and ecosystems management that take climate change into account.																
Sub-component 3.2.1: Strengthened National Inter-sectoral Committee - NEAB																
Activity 3.2.1.1 Capacity building for management effectiveness			W	R		R		R		R		R				
Sub-component 3.2.2: Training programmes, resources and built capacity for enhanced water, land and ecosystem management amongst stakeholders																
Activity 3.2.2.1 Capacity building in related Ministries to use policy in decision making																
Activity 3.2.2.2 Public Awareness and sensitization, including environmental music video and music festival, etc.	W	R		R	W	R		R	W	R		R	W	R		R
Sub-component 3.2.3: Cross-sectoral sensitization and awareness-raising programmes for all relevant stakeholders																
Activity 3.2.3.1 Capacity building of selected ministry staff and non-state actors to support the mainstreaming of SLM and IWRM	W			W	R											
Outcome 4.1: Improved information access and enhanced engagement of practitioners and other stakeholders via targeted knowledge sharing networks																
Sub-component 4.1.1: Technical exchanges and conference participation to facilitate knowledge transfer across the Caribbean and other SIDS regions																

St Vincent & the Grenadines Sub-project 1.7

National Sub-project 1.7: St Vincent & the Grenadines	Year 1				Year 2				Year 3				Year 4			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Activity 4.1.1.1 Support technical exchange and internships among participating SIDs								R		R		R		R		
Activity 4.1.1.2 Knowledge Management for project management effectiveness						I		R		R		R		R		R
Sub-component 4.1.2: Suite of best practices and lessons learnt contributing to a Community of Practice (COP) in integrated water, land and ecosystems management for SIDS																
Activity 4.1.2.1 Strengthen community-based resource management			W		W	R		R	W	R		R	W	R	W/R	

2.8 Risk Analysis

Risk	Rating	Risk management strategy
Capacity limitations within targeted communities, including stakeholder fatigue and negative view of repetitious interventions of low impact lead to low level of stakeholder buy-in. Also lack of support by local counterpart state agencies and low adoption rates by some stakeholders, e.g. marijuana growers.	high	Participatory approaches and social marketing are employed from the onset and on regular basis, including initial needs assessments and adaptive risk mitigation from project inception. Consultative and iterative engagement, responsive to needs of all stakeholders.
Private sector is not sufficiently integrated and perceives limited gains, therefore adopting a 'business-as-usual' approach (St Vincent Distilleries is particularly crucial). Established systems are not maintained as a result of low resource commitment.	high	Engage private sector from inception; identify trendsetters and cultivate relationship with St Vincent Distilleries. Encourage several community-based small and micro enterprises to diversify risk.
Changes in implementation arrangements at national level; capacity constraints; over-subscribed staff and high staff turnover in agencies. Limited policy level buy-in (environmental issues not prioritized) during challenging fiscal times shifts priorities away from sustainable resource management and diminishes national investment post-project.	medium	Broad stakeholder involvement to render benefits independent of party politics; Social marketing approaches. Consultative and iterative development of frameworks and plans. Analyses and fine tuning of interventions aims for financial self-sustainability by project end.
Occurrence of natural or other causes that may compromise overall implementation; for example floods could further erode river banks and before seedlings can root properly.	High	The five year project foresees four years for on-the-ground interventions, leaving a 20% time buffer in case of set backs.
Shifted priorities due to unforeseen events with a severe impact on the biophysical or socioeconomic environment in Saint Vincent.	medium	

Risk	Rating	Risk management strategy
Indicators frameworks promoted by the GEF and donor community are difficult to align within national accounts due to capacity human resource and financial limitations.	medium	Realistic priority indicators that are also promoted by GEF and other partners are selected for baseline data setting
Low buy-in by regional partners agencies and/or challenges amongst the donor that negatively impacts commitment in maintaining partnership arrangements and to lend support during and post-project.	low	Broad regional partner engagement from project inception. Regular PSC Skype conferences and annual regional meetings will include key partners to maintain and open line of communication and feedback mechanisms
Limited willingness of stakeholders to think and plan in cross-sectoral manner	medium	Intersectoral project management team established from inception; a priority focus of the intervention
Lack of baseline information (e.g. water quality standards) that would allow for determination of change of status; policy stance/norms that limits exchange of relevant information, e.g. water quality, financial data etc	medium	Identify deficient baseline data early in project and gather during first 6 months
Limited overlap of practitioners and internet users groups.	low	A range of media will be employed to reach all practitioners. These include written outputs, radio and television programmes, social media and other internet resources, workshops, and social marketing events
Redirection of river course and removal of obstructions are not cost-effective, e.g. because of under-estimation of full intervention cost	low	No specific measure, as occurrence/magnitude of risk will not be known until after project end
Tradition may limit impact of equitability measures during implementation period.	low	Project will work with community leader who have a track record of influencing others

2.09 Sustainability

Over the past eighteen years there have been three significant flood events (Hurricane Tomas 2010, The April Floods 2011, the Christmas floods 2013 as well as flood events in 2015 and 2016) that have resulted in landslides, disruption to regular water course, destruction of farms, homes and loss of lives. Consequently, the government has initiated a restoration programmes aimed at slope stabilization, shoreline stabilization, river

training and land restoration. These activities are part of the Region Disaster Vulnerability Response Program (RDVRP) that is currently being implemented and likely to expand in scope and duration following the Christmas Flood.

This IWECO project will dovetail into the work being done nationwide and will be subjected to the same M&E programme and work standards. All of these activities will be captured and reflected under the programme of work guided by the National Physical Development Plan using lessons learnt across the region over the last decade.

This project addresses elements of the country's obligation under the UNCCD and as such will be monitored for reporting purposes to the UNCCD. This reporting is continuous and tied to national development and sustainable land management

The project will employ participatory methodologies and proactively involve a wide range of stakeholders, ranging from disadvantaged community members to the private sector, both at the industrial and micro-entrepreneurial level. This diverse set of skills and backgrounds will soon be identified and the most cost-effective and practicable solutions will subsequently be targeted to each group and according to local conditions, in order to increase adoption rates and self-sufficiency both during and after project closure. Their efforts will be supported by capacity-building activities and strengthening of the policy and legislative framework in order to create a conducive environment for sustainability. Cross-training of practitioners who serve on inter-sectoral implementation and project management teams will reduce the dependency of continued efforts on a few individuals.

2.10 Replicability

The interventions proposed here represent a first step towards sustainable replication and adaptation of lessons learnt during the predecessor GEF-IWCAM Project. As detailed in section 2.5.1., IWCAM piloted a water security project on Union Island, St. Vincent and the Grenadines. Lessons learnt from this project are now proposed for replication in and adaptation to the conditions of the Georgetown watershed on the main island of St Vincent.

The installation of proven innovative solutions in the Georgetown watershed represent a south-south learning of lessons learnt from pilot projects under IWCAM in agroforestry (i.e. in the Cienfuegos Bay and watershed, Cuba), in effluent management and treatment (i.e. from Antigua & Barbuda) and community-led ecotourism planning (i.e. from the Bahamas).

It is expected that further lessons on adaptation requirements for the transfer of IWCAM innovative solutions across Caribbean SIDs will be learnt during IWECO. This, in turn, will allow a more systematic replication of solutions in IWRM, SLM, BD and SFM across the Caribbean region.

The suite of IW, LD and BD-related indicators of process, stress reduction, and environmental and socioeconomic status that will be identified and strengthened under the current project phase in the Georgetown watershed, as well as the protocol to monitoring them, can be extended to the national level for the management of land/ecosystems, water resources and wastewater.

Participation in major relevant conferences will facilitate the promotion and enhance replication opportunities of tested technologies and adaptation protocols, e.g. via the IW Learn successor. .

2.11 Execution Arrangements

The sub-project in Saint Vincent will be implemented over a four year period with the Ministry of Agriculture, Forestry, Fisheries, Rural Transformation, Industry & Labour, being the National Executing Agency. The Forestry Department or Director of Forestry will have direct oversight of the project and will function as the Project Director. A Project Manager (PM) and Project Assistant (PA) will be hired by the project, and a local counterpart from the Forestry services will be assigned as project liaison. The Project Manager will be responsible for the day to day running of the project. The PM, PA, Forestry counterpart and the Project Director will constitute the project management team. The Project Director will be responsible for direct communication with the PS, Minister or other appropriate senior person representing the Government of St. Vincent and the Grenadines.

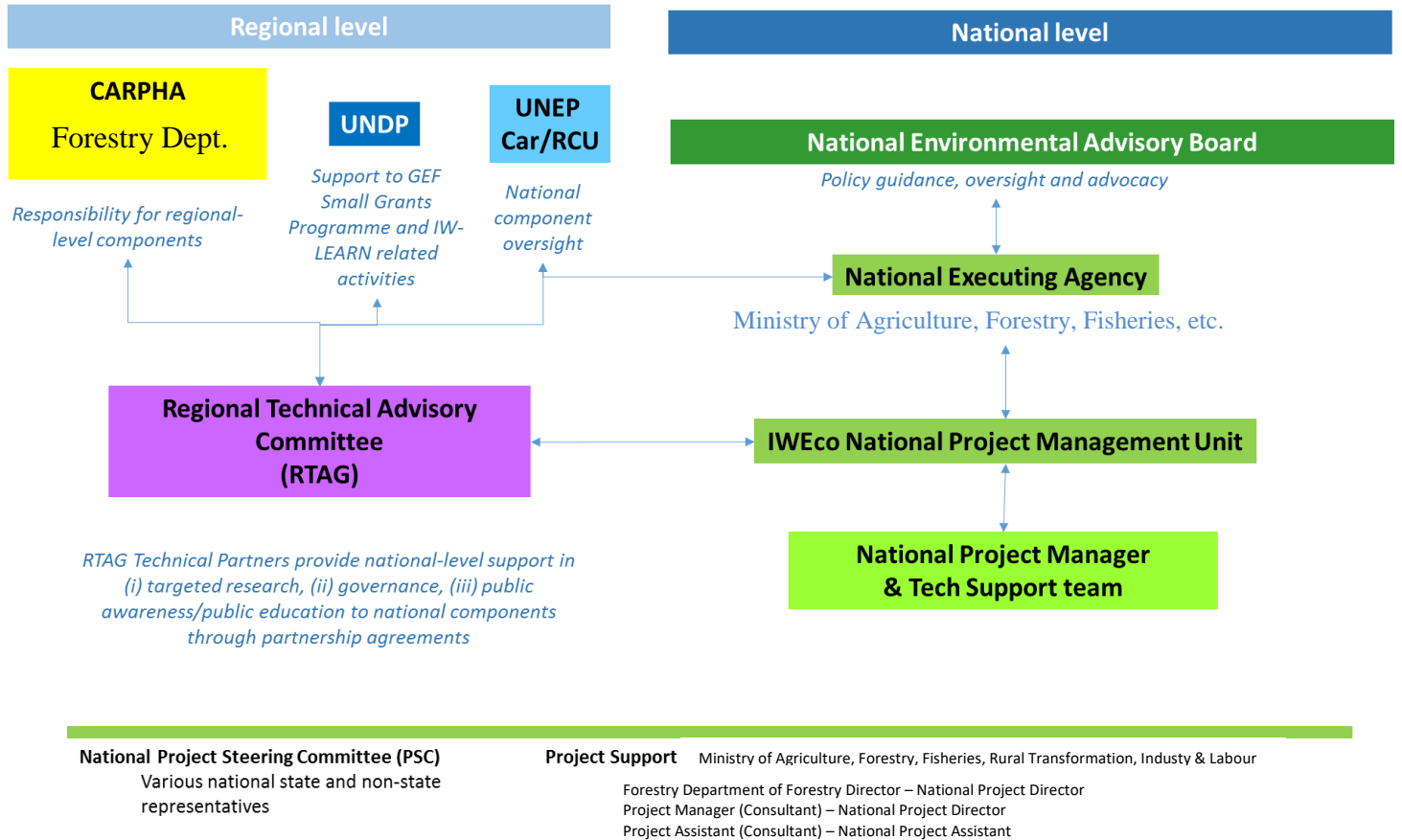
The National Environmental Advisory Board (or other well constituted authorized body) will serve as the National Steering Committee, which will provide guidance to the Project Management Unit (PMU). The National Steering Committee will ensure involvement of all relevant entities, synergies with other national projects, and that all existing policies and development strategies of government are adhered to.

CARPHA will assist the project through the provision of technical support and will ensure that the overall vision of the regional (global) project is achieved. CARPHA and the UNEP-PMU will work together to ensure full participation in regional components and the exchange of best practices to support the KM component of the project.

The project will be subjected to UNEP/GEF M&E requirements, namely the preparation of annual work plans (AWP), submission of quarterly operational reports (QOR) and project implementation reviews (PIR). The stipulated Mid Term Evaluation (MTE) and Terminal Evaluation (TE) will also form part of the project M&E. Monitoring and Evaluation will follow UNEP, GEF and National requirements to the extent possible.

The logical framework matrix provides outcome and impact indicators and corresponding means of verification. These will provide the means of verification for the M&E tools used in project monitoring.

Any substantial project or budget revision will confirm to GEF stipulations and will be done with the full knowledge and cooperation of UNEP. The GEF Small Grants Programme will support parallel initiatives within the Sandy Bay area, some 10.78km from Perseverance. This project focuses on improving community livelihoods through preservation of the cultural heritage of the indigenous people of St. Vincent and the Grenadines. This centres around their dependency on the natural resources and traditional methods of conservation based on cultural norms. This ecotourism heritage project is valued around US\$87,000.00 and will include land stabilization and reforestation interventions, the creation of nature trail, traditional Garifuna village, and create opportunity for linkages to the turtle conservation initiative in the community of Sandy Bay.



2.12 Communications and Dissemination Mechanisms

The project manager is responsible for the day to day management of the project and for reporting to the Permanent Secretary and the regional project management body. Report to the Permanent Secretary becomes part of the Ministries report to the Cabinet of Ministers and to the nation at large. Additionally, output from stakeholder meetings will be widely circulated through the Agency for Public Information (API), the national radio station and the three national newspapers.

Report to the donors would be through regular technical and financial progress reports, and where required-through audit reports,

Dissemination for public education will be effected through a range of media in order to reach all practitioners. These include written outputs, radio and television programmes, social media and other internet resources, workshops, and social marketing activities and events. The initial KEP will provide information as to which audience is best targetted by which media, which will be selected accordingly.

2.13 Monitoring and Evaluation (M&E)

The sub-project will be monitored through the following M&E activities:

Sub-project start-up: An Inception Workshop will be held within the first 3 months of the establishment of the National Project Management/Coordinating Unit involving those with assigned roles in the overall project organization structure, UNEP, CARPHA and where appropriate/feasible regional partners (like PCI Media Impact and other members of the Public Awareness/Public Education Partnership), national advisors as well as other national and local stakeholders. The Inception Workshop is crucial to building ownership for the project and commitment to achieving project results and to plan the first year annual work plan.

The following are the key areas to be addressed in the Inception Workshop:

- Provide clear understanding amongst all partners of the project and create ownership of the sub-project.
- Detail the roles, support services and complementary responsibilities of UNEP Car/RCU , CARPHA and PCI Media Impact vis à vis the project team.
- Provide guidance on the roles, functions, and responsibilities within the sub-project's decision-making structures, including reporting and communication lines, and conflict resolution mechanisms.
- Review the sub-project staff Terms of Reference as appropriate.
- Finalize the first annual work plan based on the project results framework and the relevant GEF Tracking Tool. Review and agree on the indicators, targets and their means of verification, and recheck assumptions and risks.
- Provide a detailed overview of reporting, monitoring and evaluation (M&E) requirements. The Monitoring and Evaluation work plan and budget should be agreed upon.
- Discuss financial reporting procedures and obligations, and arrangements for annual audit.
- Plan and schedule National Project Steering Committee meetings.

The first National Project Steering Committee meeting should be held within the first 6 months following the Sub-Project Inception Workshop. An Inception Workshop report is a key reference document and must be prepared and shared with participants to formalize various agreements and plans decided during the meeting.

Sub-project monitoring of implementation progress will be undertaken by the National Project Implementation Unit (NPIU) through the provision of quarterly reports. The reports are the responsibility of the National Project Coordinator, and will be developed with the close support of the PCU and RPC. Progress reports will be submitted to the PCU for onward submission to the PSC for review and reflection on challenges and opportunities. These reports will be the principle tools of regular project monitoring, form the basis for adaptive management. Each report will minimally contain:

- An account of implementation activities undertaken during the reporting period, and an update and assessment of progress against the implementation plan;
- Identification of (known and/or new) barriers to project implementation and corresponding recommendations for corrective actions during the following period (including revisions to the implementation plan, as necessary);
- A detailed and costed work plan for the subsequent reporting period, including status of funds held locally and, when necessary, a request for further cash transfers to the sub-project;
- An updated inventory of non-expendable equipment and items procured for the project; and

- Copies of project meeting reports or minutes and participant lists, as well as other technical outputs submitted to the project PCU.

The monitoring information will then be compiled and submitted as part of the reporting for the project, and integrated in the periodic reporting by the executing agencies to the PCU. The collection of information at the national and regional levels will be part of the project's knowledge management efforts.

Periodic Monitoring through site visits: the UNEP CAR/RCU will conduct visits to sub-project sites based on the agreed schedule in the sub-project's Inception Report/Annual Work Plan to assess first hand project progress. Other members of the NPSC may also join these visits. A Field Visit Report will be prepared by the National Project Manager and will be circulated no less than one month after the visit to the sub-project team and NPSC members.

Mid-term Evaluation of sub-project cycle: The sub-project will undergo an independent Mid-Term Evaluation at the mid-point of sub-project implementation. The Mid-Term Evaluation will determine progress being made toward the achievement of outcomes and will identify course correction if needed. It will focus on the effectiveness, efficiency and timeliness of project implementation; will highlight issues requiring decisions and actions; and will present initial lessons learned about project design, implementation and management. Findings of this review will be incorporated as recommendations for enhanced implementation during the final half of the sub-project's term. The organization, terms of reference and timing of the mid-term evaluation will be decided after consultation between the parties to the sub-project document. The Terms of Reference for this Mid-term evaluation will be prepared by the UNEP based on guidance from the Regional Coordinating Unit. The relevant GEF Focal Area Tracking Tools will also be completed during the mid-term evaluation cycle.

End of Sub-Project: An independent Final Evaluation will take place prior to the final NPSC meeting and will be undertaken in accordance with UNEP and GEF guidance. The final evaluation will focus on the delivery of the sub-project's results as initially planned (and as corrected after the mid-term evaluation, if any such correction took place). The final evaluation will look at impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental benefits/goals. The Terms of Reference for this evaluation will be prepared by the UNEP with the support of the Regional Coordinating Unit and the GEF.

During the last three months, the sub-project team will prepare the Sub-Project Terminal Report. This comprehensive report will summarize the results achieved (objectives, outcomes, outputs), lessons learned, problems met and areas where results may not have been achieved. It will also lay out recommendations for any further steps that may need to be taken to ensure sustainability and replicability of the sub-project's results.

Learning and knowledge sharing: Results from the sub-project will be disseminated within and beyond the project intervention zone through existing information sharing networks and forums. The sub-project will identify and participate, as relevant and appropriate, in scientific, policy-based and/or any other networks, which may be of benefit to project implementation though lessons learned. The project will identify, analyze, and share lessons learned that might be beneficial in the design and implementation of similar future projects. Finally, there will be a two-way flow of information between this sub-project and other projects of a similar focus.

Table 9: Monitoring and Evaluation Matrix for Sub-project 1.7

Sub-Project 1.7: Addressing Land Degradation in the Georgetown Watershed, Saint Vincent in St. Vincent & the Grenadines				
Project Outputs	Description of indicator	Baseline level	Mid-term targets	End-of-project targets
National component 1: To develop and foster the implementation of targeted Innovative, climate-change resilient approaches to integrated sustainable land and water resources management and enhanced management and maintenance of ecosystem services within the Georgetown Watershed				
Sub-component 1.1.1 Riverbank rehabilitation/restoration investments along Perseverance River, Jennings and Congo Valley and Langley Park Rivers	<ul style="list-style-type: none"> • area planted/number and types of trees (hectares) • linear riparian distance stabilized (km; ha) • estimated soil loss (t/ha/yr) • visible signs of surface erosion – rill and gully erosion • ambient water quality (bacterial load; sediment load-TSS; COD; BOD; other relevant parameters) • M² of road rehabilitated • # of parrots populations • # of water samples collected and analysed. 	<ul style="list-style-type: none"> • Landslide areas and eroded/denuded areas overrun with vines (smothering trees) • Major erosion caused by major floods of 2011 • encroachment by farmers - destruction of riparian zones • CWSA has domestic intake at Jennings/ Congo valley and at Perseverance • work with farmers in Diamond on riverbank stabilization • major recreational area that has been compromised - loss of traditional and economic use • threat to road to farms and CWSA intake • threats to downstream communities due to heightened flood risk • obstructions causing accelerated erosion on riverbanks of farm holdings causing loss of land area • River banks devoid of buffer/supporting vegetation • Absence of river course maintenance programme • Current populations of parrot is considered stabled. 	<ul style="list-style-type: none"> • at least 1 hectare reforested with native species at Perseverance • At least 1000 metres of riverbank stabilized using fruit trees, glory cedar • at least 30% reduction in measured TSS (related to sediment load) • at least 80% survivorship of planting materials (seedlings) • at least 100 metres of river channel realigned over the site (repacking of large boulders along the bank at upper site and include planting of glory cedar at lower site) – reduce • reduction by at least 20% in visual evidence of soil exposure - acute land degradation at site • At least 635.46 m² of roads rehabilitated. • Reasonable increase in parrot population. 	<ul style="list-style-type: none"> • total of at least 2 hectares reforested with native species at Perseverance • total of at least 1800 metres of riverbank stabilized • at least 30% reduction in measured TSS (related to sediment load) • at least 80% survivorship of planting materials • at least 200 metres realigned over the site • At least 635.46 m² of roads rehabilitated. • Reasonable increase in parrot population.
Sub-component 1.1.2: Investments in rehabilitation/reforestation of lands at Perseverance Tomas and April 2011 floods	<ul style="list-style-type: none"> • ground vegetation coverage on exposed landslide/slope failure areas (hectares) • Estimated biomass accumulation (Kg C/ha/year) • invasive species occurrence 	<ul style="list-style-type: none"> • Plantation forest overcrowded; need thinning • reduced undergrowth with increased potential for overland erosive flow • areas overrun with vines that do not allow for seeding in of beneficial 	<ul style="list-style-type: none"> • At least 5 hectares of forest thinned - 1 thinning cycle (to enhance yield) • At least 25% in ground vegetation cover over exposed areas in target sites 	<ul style="list-style-type: none"> • Total of 5 hectares of forest thinned • reduction by at least 50% in visual evidence of soil exposure - acute land degradation at site • Invasive species proliferation at least 40%

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

Project Outputs	Description of indicator	Baseline level	Mid-term targets	End-of-project targets
	<ul style="list-style-type: none"> mortality rate of seedlings/planting material diversity of planting material; 	species (e.g. food sources for wildlife)	<ul style="list-style-type: none"> Invasive species (vine) proliferation at least 20% less than adjacent non-target areas At least 15% increase in biomass accumulation Mortality rate of plantings is less than 30% 	<ul style="list-style-type: none"> less than adjacent non-target areas at least 40% increase in biomass accumulation Mortality rate of plantings is less than 20%
<p>Sub-component 1.2.1 Community-based investments to enhance revenue generation within target communities supported by GEF-SGP</p>	<ul style="list-style-type: none"> length of trail upgraded number of visitors number of persons/business enterprises benefiting revenue earnings from trail and by businesses area of forest/landscape protected volume and use of compost number of farmers applying technology 	<ul style="list-style-type: none"> presence of endemic biodiversity - parrot, warbler, black snake, others existing forest patrol trail also used for parrot surveys designated biodiversity hotspot in upper reaches of watershed some degree of camping and hiking by locals - not current tourism attraction availability of rooms for rent - with view to future tourism development potential link to hiking trails to Soufriere Volcano good potential to supply local produce from farms and craft from forests in area pig effluent not treated to acceptable quality standards before discharge onto rivers no evidence of good practices/investment in effluent management high risk of exposure of contaminants to humans contributing to negative human health degradation of ecosystems apathetic view and lack of awareness Declining ecosystem productivity in near-shore fishing areas as a result of land-based degradation land and 	<ul style="list-style-type: none"> at least 3 km of nature trail upgraded to acceptable walking safety commencement of upgrade of one rest station/ interpretation centre, signage installation and other facilities installation increase in number of visitors by at least 20% increase in income generation to beneficiaries by 10% disaggregated by gender at least 1 investment in dry-system effluent management with select farmers with effluent/compost being 100% utilized in crop production and at land deg demo site 	<ul style="list-style-type: none"> at least 5 km of trail upgraded to acceptable walking safety including operation of rest station/ interpretation centre, installed signage and at least 4 lookout platforms increase in number of visitors by at least 40% increase in income generation to stakeholders by 30% overall 50 hectares of forest protected directly for ecotourism purpose; total of at least 2 investments in dry-system effluent management with select farmers.

Sub-Project 1.7: Addressing Land Degradation in the Georgetown Watershed, Saint Vincent in St. Vincent & the Grenadines				
Project Outputs	Description of indicator	Baseline level	Mid-term targets	End-of-project targets
		water with resultant declines in economic benefits to dependent communities		
National component 2: To strengthen Sustainable Land Management (SLM), Integrating Water Resources Management (IWRM) and ecosystems Monitoring and Indicators frameworks in Saint Vincent and the Grenadines				
Sub-component 2.1.1: Suite of project site and national-level IW and LD, and BD-related indicators of process, stress reduction, and environmental and socioeconomic status and field monitoring systems	<ul style="list-style-type: none"> • monitoring protocol/framework installed at target sites • Number of trained project personnel/stakeholders • quality of datasets • National register/compendium of agreed indicators at national level • complement of trained professionals 	<ul style="list-style-type: none"> • Very limited information exists on pollutant discharges and impacts to receiving environments • Tracking of appropriate indicators is poor to non-existent • assessments are very sporadic and limited time series; (iv) data and information tends not to be analyzed • decision making is very often not based on scientific information • instrumentation vulnerable to storm events (water level recorders) washed away by storm flows • Regulatory requirements for development do not place significant reliance on application of environmental indicators • limited use of environmental indicators in socio-economic development and assessment of impacts of environmental degradation on productive sector outputs 	<ul style="list-style-type: none"> • Data collection protocol and field data capture system installed • All relevant project personnel and core stakeholders trained on application of framework • Data collection and assessment at least twice per year • Assessment report on national progress towards indicators integration with recommendations for enhancement (based on IWCAM work) • At least 2 awareness raising events targeting policy and technical personnel • Initiation of national reporting alignment process with environmental indicators 	<ul style="list-style-type: none"> • Set of data and information products to support project progress assessment • data collection protocol linked to information systems within regulatory agencies • National reporting frameworks aligned to include environmental indicators • register/compendium of national indicators • at least 80% of target professionals trained in application of indicators framework • At least 4 awareness raising events carried out targeting policy and technical personnel
National component 3: To strengthen policy, legislative and institutional reforms and capacity building to support Sustainable Land Management (SLM), Integrating Water Resources Management (IWRM) and ecosystem services management taking into consideration climate change resilience building in Saint Vincent and the Grenadines.				
Sub-component 3.1.1: New and/or revised policies and regulations on water supply and sanitation based on the IWRM Roadmaps (and IWRM/WUE strategies where they may exist), National Plans of Action for	<ul style="list-style-type: none"> • Ratified policies • bills passed into law • new regulations 	<ul style="list-style-type: none"> • Investments in legislative reform as a result of review processes take a long time to go through parliamentary processes • low level of priority assigned hampers rate of progress • buy-in at the highest political level, the private 	<ul style="list-style-type: none"> • Draft national land / water resources legislation and regulations formulated • At least 2 public and a high-level policy maker awareness seminars/workshops convened 	<ul style="list-style-type: none"> • National land / water policy provisions ratified by government • Support legislation and regulations adopted • Total of at least 4 public and a high-level policy maker awareness seminars/workshops convened

Sub-Project 1.7: Addressing Land Degradation in the Georgetown Watershed, Saint Vincent in St. Vincent & the Grenadines				
Project Outputs	Description of indicator	Baseline level	Mid-term targets	End-of-project targets
SLM and ecosystem conservation.		sector and civil society is not at desired levels		
Sub-component 3.2.1: Strengthened National Inter-sectoral Committee - NEAB	<ul style="list-style-type: none"> Adopted terms of reference for NEAB Number of meetings and attendance of the NEAB 	<ul style="list-style-type: none"> National inter-sectoral coordinating mechanism weak and not mainstreamed in national-level planning; existence of multiple such committees typically 'project-driven' typically composition of same agencies across most such committees some level of stakeholder fatigue and capacity limitations in making meaningful contributions. 	<ul style="list-style-type: none"> Rules of Procedure for NEAB developed and NAEB re-launched at least 3 NEAB meetings convened – include project progress review on the agenda 	<ul style="list-style-type: none"> Total of at least 4 NEAB meetings per annum during project implementation
Sub-component 3.2.2: Training programmes, resources and built capacity for enhanced water, land and ecosystem management amongst stakeholders	<ul style="list-style-type: none"> Number of training activities number and diversity of stakeholders that participated disaggregated by gender resource materials 	<ul style="list-style-type: none"> Some level of prior capacity building mainly associated with projects where resources are available routine training and capacity building is somewhat limited on account of resource constraints 	<ul style="list-style-type: none"> Needs assessment based on existing and planned initiatives completed Harmonized capacity building programme designed and under implementation execution of at least 4 training for priority needs – at least 30% of core targeted stakeholders recipients of training 	<ul style="list-style-type: none"> At least 60% of professionals in lead agencies and primary CSO stakeholders trained in core technical areas
Sub-component 3.2.3: Cross-sectoral sensitization and awareness-raising programmes for all relevant stakeholders	<ul style="list-style-type: none"> National PA/PE programmes Number of private sector partners engaged number and diversity of media products generated number and diversity of stakeholders impacted disaggregated by gender 	<ul style="list-style-type: none"> Public awareness and public education programmes are ongoing but tends to be ad-hoc and/or sporadic in roll-out and typically project-driven such programmes tend not to be sufficiently mainstreamed as part of routine outreach activities of responsible agencies often the result of capacity constraints, either human and/or financial recognition that engagement of schools in such programmes must be expanded but mainstreamed within school curricula 	<ul style="list-style-type: none"> Comprehensive national PA/PE programme in support of the project range of printed and electronic media products at least 4 special seminars held 	<ul style="list-style-type: none"> range of printed and electronic media products At least 10 seminars held - contribute to heightened awareness to support project implementation

Sub-Project 1.7: Addressing Land Degradation in the Georgetown Watershed, Saint Vincent in St. Vincent & the Grenadines				
Project Outputs	Description of indicator	Baseline level	Mid-term targets	End-of-project targets
		<ul style="list-style-type: none"> • Linkages between mainstream media and relevant agencies to facilitate outreach are weak - mainstream media may ascribe low priority/attention to matters related to the environment • private sector not targeted sufficiently to trigger their empowerment and acceptance of their contributory roles 		
National component 4: To enhance knowledge exchange, promotion of best-practices, replication and expanding stakeholder involvement in Saint Vincent and the Grenadines				
Sub-component 4.1.1: Technical exchanges and conference participation to facilitate knowledge transfer across the Caribbean and other SIDS regions	<ul style="list-style-type: none"> • Number of technical exchanges • Number of stakeholders participating in conference events 	<ul style="list-style-type: none"> • There are periodic partnership technical exchanges and dialogues at regional and international for a • transfer of experiences needs to be deepened and to filter to community level • Several opportunities exist for participation at major conferences to showcase work and exchange ideas among SIDS regions • outputs from such exchanges result in new intellectual contributions to projects and programmes including new initiatives. 	<ul style="list-style-type: none"> • At least 2 technical exchanges between countries within the Caribbean and 1 between other SIDS regions (target a maximum of 5 persons to participate) • core stakeholders participate in at least 1 major event to present findings from national project (target max of 5 persons to attend such events) 	<ul style="list-style-type: none"> • At least 4 technical exchanges within the Caribbean and 2 between other SIDS regions • Stakeholders participate in total of at least 2 major events to present findings from national project.
Sub-component 4.1.2: Suite of best practices and lessons learnt contributing to a Community of Practice (COP) in integrated water, land and ecosystems management for SIDS	<ul style="list-style-type: none"> • Approved/endorsed best practice guidelines by target users • best practices readily available as reference in a compendium 	<ul style="list-style-type: none"> • Limited formal capture of workable methods, tools and techniques; land, water and ecosystems management guidelines are not currently integrated within physical planning and development protocols but access to information platforms and practical application is not well understood • The Communities of Practices is not yet well 	<ul style="list-style-type: none"> • at least 2 best practice guidelines published in various media formats and used by stakeholders • project website for interactive sharing developed and functional 	<ul style="list-style-type: none"> • At least 4 best practice guidelines/manuals) published • website actively used for information sharing

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

Project Outputs	Description of indicator	Baseline level	Mid-term targets	End-of-project targets
		defined and requires further support and development inputs		

3 PROJECT ANNEXES

Annex 3.1 Logical Framework and Objectively Verifiable Impact Indicators

Sub-Project Goal: Reduce and revert land degradation within the Georgetown watershed, Saint Vincent, by an integrated water, land and ecosystems management approach.					
Results Level	Indicator	Baseline	Targets	Sources of verification	Risks and Assumptions
<p>Outcome 1.1 Measurable stress reduction at project sites through appropriate sustainable water, land and ecosystems management interventions that account for climate change.</p>	<p>(i) Movement toward a favourable change in status in the condition of the resource base in the Georgetown Watershed, as evidenced by scientific observation and tracking the relevant indicators; (ii) Investments successfully demonstrate stress reduction and replication is taking place based on lessons learnt; (iii) Replication and up-scaling of methods and approaches is initiated in other parts of the country and across other SIDS</p>	<p>(i) assessments are very sporadic - cannot assess change over time; (ii) information tends not to be analyzed; (iii) reports generated are not shared - info lost; (iv) limited capacity to utilize information - data is sometimes not used to make decisions - data is not available so hampers use in decision-making</p>	<p>(i) establish of baselines as applicable; (ii) install capacity for use of info in decision making; (iii) rehabilitation and ecosystem restoration in upland areas and riparian zones over at least 15 hectares</p>	<p>(i) internal agency reports; (ii) national reporting to conventions and other international and regional frameworks; (iii) replication of tools, methods and techniques in other communities through new investments; (iv) reports of replication and up-scaling to other sites in the country and translation to other Caribbean countries and at the global level</p>	<p>Risks: (i) frameworks for monitoring are established that exceed national level capabilities for long-term support; (ii) established systems are not maintained as a result of resource commitment</p> <p>Assumptions: governments and patterns will continue commitment and investments in monitoring systems; (ii) stakeholders will recognize and value benefits of monitoring systems and will contribute towards maintenance of such systems; (iii) results/information from monitoring systems will be effectively communicated toward effecting meaningful change in practice; (iv) design of systems will be sensitive to capacities of</p>
<p>Sub-component 1.1.1 Riverbank rehabilitation/restoration investments along Perseverance River, Jennings and Congo Valley and Langley Park Rivers</p>	<ul style="list-style-type: none"> • area planted/number and types of trees (hectares) • linear riparian distance stabilized (km; ha) • estimated soil loss (t/ha/yr) • visible signs of surface erosion – rill and gully erosion • ambient water quality (bacterial load; sediment load-TSS; COD; BOD; other relevant parameters) 	<ul style="list-style-type: none"> • Landslide areas and eroded/denuded areas overrun with vines (smothering trees) • Major erosion caused by major floods of 2011 • encroachment by farmers - destruction of riparian zones • CWSA has domestic intake at Jennings/ Congo valley and at Perseverance • use for river washing • irrigation abstraction from Mt Pleasant area - Langley Park also in Perseverance (may not be operational) • fishing in rivers - crayfish and tri-tri at river mouth • work with farmers in Diamond on riverbank stabilization 	<p>Mid-term</p> <ul style="list-style-type: none"> • at least 1 hectare reforested with native species at Perseverance • At least 1000 metres of riverbank stabilized using fruit trees, glory cedar • at least 30% reduction in measured TSS (related to sediment load) • at least 80% survivorship of planting materials (seedlings) • at least 100 metres of river channel realigned over the site (repacking of large boulders along the bank at upper site and include planting of glory cedar at lower site) – reduce 	<p>(i) Aerial photos; (ii) Technical and scientific reports/publications; (iii) project reports; (iv) Ministry reports; (v) media releases</p>	<p>(i) frameworks for monitoring are established that exceed national level capabilities for long-term support; (ii) established systems are not maintained as a result of resource commitment</p> <p>Assumptions: governments and patterns will continue commitment and investments in monitoring systems; (ii) stakeholders will recognize and value benefits of monitoring systems and will contribute towards maintenance of such systems; (iii) results/information from monitoring systems will be effectively communicated toward effecting meaningful change in practice; (iv) design of systems will be sensitive to capacities of</p>

Sub-Project Goal: Reduce and revert land degradation within the Georgetown watershed, Saint Vincent, by an integrated water, land and ecosystems management approach.					
Results Level	Indicator	Baseline	Targets	Sources of verification	Risks and Assumptions
		<ul style="list-style-type: none"> major recreational area that has been compromised - loss of traditional and economic use threat to road to farms and CWSA intake threats to downstream communities due to heightened flood risk obstructions causing accelerated erosion on riverbanks of farm holdings causing loss of land area River banks devoid of buffer/supporting vegetation Absence of river course maintenance programme 	<ul style="list-style-type: none"> reduction by at least 20% in visual evidence of soil exposure - acute land degradation at site <p>End of Project</p> <ul style="list-style-type: none"> total of at least 2 hectares reforested with native species at Perseverance total of at least 1800 metres of riverbank stabilized at least 30% reduction in measured TSS (related to sediment load) at least 80% survivorship of planting materials at least 200 metres realigned over the site 		stakeholder agencies to mainstream systems
<p>Sub-component 1.1.2: Investments in rehabilitation/reforestation of lands at Perseverance impacted by Hurricane Tomas and April 2011 floods</p>	<ul style="list-style-type: none"> ground vegetation coverage on exposed landslide/slope failure areas (hectares) Estimated biomass accumulation (Kg C/ha/year) invasive species occurrence mortality rate of seedlings/planting material diversity of planting material 	<ul style="list-style-type: none"> Plantation forest overcrowded; need thinning reduced undergrowth with increased potential for overland erosive flow areas overrun with vines that do not allow for seeding in of beneficial species (e.g. food sources for wildlife) 	<p>Mid-term</p> <ul style="list-style-type: none"> At least 5 hectares of forest thinned - 1 thinning cycle (to enhance yield) At least 25% in ground vegetation cover over exposed areas in target sites Invasive species (vine) proliferation at least 20% less than adjacent non-target areas At least 15% increase in biomass accumulation Mortality rate of plantings is less than 30% <p>End of Project</p> <ul style="list-style-type: none"> Total of 5 hectares of forest thinned reduction by at least 50% in visual evidence of soil 	Aerial photos; technical and scientific reports/publications	

Sub-Project Goal: Reduce and revert land degradation within the Georgetown watershed, Saint Vincent, by an integrated water, land and ecosystems management approach.					
Results Level	Indicator	Baseline	Targets	Sources of verification	Risks and Assumptions
			exposure - acute land degradation at site <ul style="list-style-type: none"> • Invasive species proliferation at least 40% less than adjacent non-target areas • at least 40% increase in biomass accumulation • Mortality rate of plantings is less than 20% 		
Outcome 1.2: Enhanced livelihood opportunities and socio-economic co-benefits for targeted communities from improved ecosystem services functioning	(i) Potential for sustainable livelihood improved through creation of spin-off economic benefits; (ii) Evidence of income generation and/or economic benefits (for community, private sector) beyond the direct investments of the project	(i) limited understanding of resource use/extraction rates/ use characterization - by community, government, private sector (note - need to consider illicit harvesting of resources like marine turtles); (ii) studies exist re the marine valuation of ecosystems services - need to look at the terrestrial (iii) limited understanding amongst stakeholders of consequences of actions on their own livelihoods - e.g. degradation of riparian zones - note there are provisions for degradation control under Fair Trade regime for banana production (iv) limited enforcement under existing laws	(i) good knowledge of economic dimension of resource use - valuation of ecosystem services; (ii) positive economic growth of economic status of targeted stakeholders	(i) national planning and development reporting; (ii) national reporting to conventions and other international and regional frameworks; (iii) revenue generation records within beneficiary communities; (iv) media releases	Risks: (i) senior policy makers and other stakeholders do not regard investments in improved environmental management within national development priorities; (ii) private sector are not sufficiently integrated, perceive limited gains and adopt a 'business-as-usual' approach Assumptions: (i) governments integrate environmental considerations within mainstream planning in respect to contributions to improved health and
Sub-component 1.2.1 Community-based investments to enhance revenue generation within target communities supported by GEF-SGP	<ul style="list-style-type: none"> • length of trail upgraded • number of visitors • number of persons/business enterprises benefiting 	<ul style="list-style-type: none"> • presence of endemic biodiversity - parrot, warbler, black snake, others • existing forest patrol trail also used for parrot surveys • designated biodiversity hotspot in upper reaches of watershed 	Mid-term <ul style="list-style-type: none"> • at least 3 km of nature trail upgraded to acceptable walking safety • commencement of upgrade of one rest station/ interpretation centre, 	(i) Technical reports; promotional materials; (ii) Certificates of completion and/or hand-over agreements; (iii) press releases; (iv) ambient water quality test results; volumes	

Sub-Project Goal: Reduce and revert land degradation within the Georgetown watershed, Saint Vincent, by an integrated water, land and ecosystems management approach.					
Results Level	Indicator	Baseline	Targets	Sources of verification	Risks and Assumptions
	<ul style="list-style-type: none"> revenue earnings from trail and by businesses (US\$/yr) area of forest/landscape protected volume and use of compost from livestock rearing number of farmers applying technology 	<ul style="list-style-type: none"> some degree of camping and hiking by locals - not current tourism attraction availability of rooms for rent - with view to future tourism development potential link to hiking trails to Soufriere Volcano good potential to supply local produce from farms and craft from forests in area pig effluent not treated to acceptable quality standards before discharge onto rivers no evidence of good practices/investment in effluent management high risk of exposure of contaminants to humans contributing to negative human health degradation of ecosystems apathetic view and lack of awareness Declining ecosystem productivity in near-shore fishing areas as a result of land-based degradation land and water with resultant declines in economic benefits to dependent communities 	<p>signage installation and other facilities installation</p> <ul style="list-style-type: none"> increase in number of visitors by at least 20% increase in income generation to beneficiaries by 10% disaggregated by gender at least 1 investment in dry-system effluent management with select farmers with effluent/compost being 100% utilized in crop production and at land deg demo site <p>End of Project</p> <ul style="list-style-type: none"> at least 5 km of trail upgraded to acceptable walking safety including operation of rest station/ interpretation centre, installed signage and at least 4 lookout platforms increase in number of visitors by at least 40% increase in income generation to stakeholders by 30% overall 50 hectares of forest protected directly for ecotourism purpose; total of at least 2 investments in dry-system effluent management with select farmers. 	<p>of treated waste; (v) reports/publications; (vi) Records/financial statements from cooperatives; (v) tailored financial data capture tool</p>	<p>livelihood attainment; (ii) the benefits of investments in environment is adequately reflected in national accounts and standard development indices; (iii) development partners continue to support investments in improved environmental management towards improved community welfare and economic livelihoods</p>

Sub-Project Goal: Reduce and revert land degradation within the Georgetown watershed, Saint Vincent, by an integrated water, land and ecosystems management approach.					
Results Level	Indicator	Baseline	Targets	Sources of verification	Risks and Assumptions
			<ul style="list-style-type: none"> increase in the number of locations exploited for subsistence fishing 		
National component 2: To strengthen Sustainable Land Management (SLM), Integrating Water Resources Management (IWRM) and ecosystems Monitoring and Indicators frameworks in Saint Vincent and the Grenadines					
<p>Outcome 2.1: Strengthened national and regional systems for monitoring of environmental status with respect to key international agreements.</p>	<p>(i) Heightened awareness amongst policy makers and national stakeholders of the value of monitoring systems for informed decision making; (ii) Improved understanding of the impacts of project investments on change of environmental status through monitoring and tracking the relevant indicators; (iii) Decision makers and technical personnel are using the data and information generated to strengthen the evidence base and apply it in future decision making.</p>	<p>Capacities in relevant state and non-state agencies are not as strong; challenge of high turnover of staff and knowledge is lost;</p>	<p>(i) technical personnel applying accepted methods and techniques in making IWRM, SLM, BD and SFM assessments that support decision-making; (ii) community-based organizations, schools and other NGO groups are engaged in supportive assessments at the local community level</p>	<p>(i) relevant state of environment reports at national and regional levels; (ii) UN convention and other international and regional reporting outputs; (iii) strengthened training/capacity building programmes</p>	<p>Risks: (i) limited ability to sustain capacity building efforts post-project</p> <p>Assumptions: (i) governments, non-state organizations, private sector and community beneficiaries will remain committed to investment in capacity development</p>

<p>Sub-component 2.1.1: Suite of project site and national-level IW and LD, and BD-related indicators of process, stress reduction, and environmental and socioeconomic status and field monitoring systems</p>	<ul style="list-style-type: none"> • monitoring protocol/framework installed at target sites • Number of trained project personnel/stakeholders • quality of datasets • National register/compendium of agreed indicators at national level • complement of trained professionals 	<ul style="list-style-type: none"> • Very limited information exists on pollutant discharges and impacts to receiving environments • Tracking of appropriate indicators is poor to non-existent • assessments are very sporadic and limited time series; (iv) data and information tends not to be analyzed • decision making is very often not based on scientific information • instrumentation vulnerable to storm events (water level recorders) washed away by storm flows • Regulatory requirements for development do not place significant reliance on application of environmental indicators • limited use of environmental indicators in socio-economic development and assessment of impacts of environmental degradation on productive sector outputs 	<p>Mid-term</p> <ul style="list-style-type: none"> • Data collection protocol and field data capture system installed • All relevant project personnel and core stakeholders trained on application of framework • Data collection and assessment at least twice per year • Assessment report on national progress towards indicators integration with recommendations for enhancement (based on IWCAM work) • At least 2 awareness raising events targeting policy and technical personnel • Initiation of national reporting alignment process with environmental indicators <p>End of Project</p> <ul style="list-style-type: none"> • Set of data and information products to support project progress assessment • data collection protocol linked to information systems within regulatory agencies • National reporting frameworks aligned to include environmental indicators • register/compendium of national indicators • at least 80% of target professionals trained in application of indicators framework • At least 4 awareness raising events carried out targeting policy and technical personnel 	<p>(i) Project reports; (ii) field data reports; (iii) Project Monitoring Framework; (iv) installed instrumentation; (v) training needs assessments; (vi) course material; (vii) training reports; (viii) progress reports; (ix) media releases</p>	
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Sub-Project Goal: Reduce and revert land degradation within the Georgetown watershed, Saint Vincent, by an integrated water, land and ecosystems management approach.					
Results Level	Indicator	Baseline	Targets	Sources of verification	Risks and Assumptions
National component 3: To strengthen policy, legislative and institutional reforms and capacity building to support Sustainable Land Management (SLM), Integrating Water Resources Management (IWRM) and ecosystem services management taking into consideration climate change resilience building in Saint Vincent and the Grenadines.					
<p>Outcome 3.1: Strengthened policy and legislation for the effective management of water, land and ecosystems resources that account for climate change.</p>	<p>(i) Improved resource management through strengthened legislative an regulatory environment; (ii) evidence of enhanced compliance amongst stakeholders</p>	<p>(i) Some national legislation lacking supporting regulations therefore they are unable to adequately address negative environmental outcomes. (ii) International and regional treaties ratified but not integrated into national law; (iii) challenges in gaining buy-in from stakeholders; (iv) incentive measures to accompany legislative provisions are typically weak; (v) instruments dominated by command and control rather than participatory approaches</p>	<p>(i) critical priority legislative provisions related to IWRM, LD, BD and SFM in Saint Vincent and the Grenadines are upgraded; (ii) publication and dissemination on new policy positions</p>	<p>(i) gazetted legislative amendments; (ii) new policy statements; (iii) reporting to UN conventions and other regional and international frameworks; (iv) media releases; (v) stakeholder consultation proceedings</p>	<p>Risks: (i) Potential lack of willingness at political level where proposals may be regarded as either controversial or costly to implement; (ii) lack of broad-based stakeholder support Assumptions: (i) There is willingness to collaborate with lead national agencies ; (ii) The project public awareness programme should provide the needed information to increase buy-in to policy and legal reforms</p>
<p>Sub-component 3.1.1: New and/or revised policies and regulations on water supply and sanitation based on the IWRM Roadmaps (and IWRM/WUE strategies where they may exist), National Plans of Action for SLM and ecosystem conservation.</p>	<ul style="list-style-type: none"> • Ratified policies • bills passed into law • new regulations 	<ul style="list-style-type: none"> • Investments in legislative reform as a result of review processes take a long time to go through parliamentary processes • low level of priority assigned hampers rate of progress • buy-in at the highest political level, the private sector and civil society is not at desired levels 	<p>Mid-term</p> <ul style="list-style-type: none"> • Draft national land / water resources legislation and regulations formulated • At least 2 public and a high-level policy maker awareness seminars/workshops convened <p>End of Project</p> <ul style="list-style-type: none"> • National land / water policy provisions ratified by government • Support legislation and regulations adopted • Total of at least 4 public and a high-level policy maker awareness seminars/workshops convened 	<p>(i) New legislative drafts and regulations; (ii) Gazetted publication; (iii) media releases</p>	

Sub-Project Goal: Reduce and revert land degradation within the Georgetown watershed, Saint Vincent, by an integrated water, land and ecosystems management approach.					
Results Level	Indicator	Baseline	Targets	Sources of verification	Risks and Assumptions
<p>Outcome 3.2: Strengthened capacity of national and regional institutions and other stakeholders for water, land, and ecosystems management that take climate change into account.</p>	<p>(i) Local institutional capacity developed sufficiently to implement long-term sustainable land and ecosystem management investments; (ii) institutional response from both state and non-state agencies are effective in addressing implementation</p>	<p>(i) many institutions lack requisite capacity due to human resources and financial constraints to effectively implement statutory obligations for IWRM, SLM, BD, SFM; (ii) non-state agencies and community organization lack capacity to facilitate stakeholder engagement; (iii) low awareness at policy making level to gain support for investment in institutional strengthening; (iv) public awareness programmes tend to be sporadic hampering investment in capacity building; (v) poor coordination amongst regional agencies in harmonizing approaches and advisory support to countries</p>	<p>(i) policy changes that mainstreams implementation into practice; (iii) improved level of support from national agencies to stakeholder interests in natural resources management through roll-out of targeted programmes; (iii) cooperation agreements between regional support organizations and improved planning and coordination; (iv) increased flow of information and knowledge products from lead agencies to stakeholders</p>	<p>(i) published policy statements; (ii) publication and dissemination and access to information; (iii) regional cooperation frameworks in effect</p>	<p>Risks: (i) National inter-sectoral mechanisms may be overburdened with many other competing interests with resulting stakeholder fatigue; (ii) these mechanisms remain informal so inputs are not directed through to formal developmental policy; (iii) may be some level of stakeholder fatigue given other competing training programmes Assumptions: (i) There is willingness to build on either existing frameworks or develop new ones with due focus directed to facilitate integrated project implementation; (ii) there will be high-level support to the work of the NIC; (iii) there will be appropriate representation on the NIC that will be linked to the work of the national project so that there can be appropriate information exchange</p>
<p>Sub-component 3.2.1: Strengthened National Inter-sectoral Committee - NEAB</p>	<ul style="list-style-type: none"> Adopted terms of reference for NEAB Number of meetings and attendance of the NEAB 	<ul style="list-style-type: none"> National inter-sectoral coordinating mechanism weak and not mainstreamed in national-level planning; existence of multiple such committees typically 'project-driven' typically composition of same agencies across most such committees some level of stakeholder fatigue and capacity limitations in making meaningful contributions. 	<p>Mid-term</p> <ul style="list-style-type: none"> Rules of Procedure for NEAB developed and NAEB re-launched at least 3 NEAB meetings convened – include project progress review on the agenda <p>End of Project</p> <ul style="list-style-type: none"> Total of at least 4 NEAB meetings per annum during project implementation 	<p>(i) Proceedings of NIC meetings (ii) media releases; (iii) project progress reports; (iv) Ministry reports</p>	<p>is willingness to build on either existing frameworks or develop new ones with due focus directed to facilitate integrated project implementation; (ii) there will be high-level support to the work of the NIC; (iii) there will be appropriate representation on the NIC that will be linked to the work of the national project so that there can be appropriate information exchange</p>
<p>Sub-component 3.2.2: Training programmes, resources and built capacity for enhanced water, land and ecosystem management amongst stakeholders</p>	<ul style="list-style-type: none"> Number of training activities number and diversity of stakeholders that participated disaggregated by gender resource materials 	<ul style="list-style-type: none"> Some level of prior capacity building mainly associated with projects where resources are available routine training and capacity building is somewhat limited on account of resource constraints 	<p>Mid-term</p> <ul style="list-style-type: none"> Needs assessment based on existing and planned initiatives completed Harmonized capacity building programme designed and under implementation 	<p>(i) Needs assessment report; (ii) training modules; (iii) project reports; (iv) media releases</p>	<p>is willingness to build on either existing frameworks or develop new ones with due focus directed to facilitate integrated project implementation; (ii) there will be high-level support to the work of the NIC; (iii) there will be appropriate representation on the NIC that will be linked to the work of the national project so that there can be appropriate information exchange</p>

Sub-Project Goal: Reduce and revert land degradation within the Georgetown watershed, Saint Vincent, by an integrated water, land and ecosystems management approach.					
Results Level	Indicator	Baseline	Targets	Sources of verification	Risks and Assumptions
			<ul style="list-style-type: none"> execution of at least 4 training for priority needs – at least 30% of core targeted stakeholders recipients of training <p>End of Project</p> <ul style="list-style-type: none"> At least 60% of professionals in lead agencies and primary CSO stakeholders trained in core technical areas 		to all beneficiary stakeholders; (iv) Stakeholders are willing to participate and share knowledge post-training
<p>Sub-component 3.2.3: Cross-sectoral sensitization and awareness-raising programmes for all relevant stakeholders</p>	<ul style="list-style-type: none"> National PA/PE programmes Number of private sector partners engaged number and diversity of media products generated number and diversity of stakeholders impacted disaggregated by gender 	<ul style="list-style-type: none"> Public awareness and public education programmes are ongoing but tends to be ad-hoc and/or sporadic in roll-out and typically project-driven such programmes tend not to be sufficiently mainstreamed as part of routine outreach activities of responsible agencies often the result of capacity constraints, either human and/or financial recognition that engagement of schools in such programmes must be expanded but mainstreamed within school curricula Linkages between mainstream media and relevant agencies to facilitate outreach are weak - mainstream media may ascribe low priority/attention to matters related to the environment private sector not targeted sufficiently to trigger their empowerment and acceptance of their contributory roles 	<p>Mid-term</p> <ul style="list-style-type: none"> Comprehensive national PA/PE programme in support of the project range of printed and electronic media products at least 4 special seminars held <p>End of Project</p> <ul style="list-style-type: none"> range of printed and electronic media products At least 10 seminars held - contribute to heightened awareness to support project implementation branding of flagship endemic species on bottled water extracted from the watershed A range of social media promotions 	<p>(i) Needs assessment report (ii) PA/PE programme for project featuring national proposals; (iii) media and web-based products/content; (iv) public events</p>	

Sub-Project Goal: Reduce and revert land degradation within the Georgetown watershed, Saint Vincent, by an integrated water, land and ecosystems management approach.					
Results Level	Indicator	Baseline	Targets	Sources of verification	Risks and Assumptions
			<ul style="list-style-type: none"> • At least 1 environmental music videos and 1 music festival • At least 1 stage play • At least 1 mascot purchased • At least 1 media awareness workshop, • At least 2 forestry summer programmes • Informatative signs along nature trails • at least 10 school awareness campaign. 		
National component 4: To enhance knowledge exchange, promotion of best-practices, replication and expanding stakeholder involvement in Saint Vincent and the Grenadines					
<p>Outcome 4.1: Improved information access and enhanced engagement of practitioners and other stakeholders via targeted knowledge sharing networks</p>	<p>(i) Enhanced stakeholder networking and knowledge sharing towards implementation of solutions across the Caribbean and other SIDS regions; (ii) Expanded, strengthened community of practices with</p>	<p>(i) limited exchange of experiences between St Vincent and the Grenadines and across other SIDS in innovative approaches for IWRM, SLM, BD and SFM; (ii) low level of dissemination and access to information by potential beneficiary stakeholders; (iii) investments made</p>	<p>(i) practitioners accessing and applying published suite of replicable best practices disseminated globally through knowledge networks; (ii) increased knowledge and awareness of appropriate solutions from policy makers to</p>	<p>(i) reporting to UN conventions and other regional and international frameworks; (ii) compendiums and published best practices; (iii) meeting/conference proceedings</p>	<p>Risks: (i) Limited willingness to think and plan in cross-sectoral manner; (ii) Low adoption rates by some stakeholders, e.g. marijuana growers;</p>

Sub-Project Goal: Reduce and revert land degradation within the Georgetown watershed, Saint Vincent, by an integrated water, land and ecosystems management approach.					
Results Level	Indicator	Baseline	Targets	Sources of verification	Risks and Assumptions
	shared experiences in successfully implementing solutions	through project interactions at national and regional level that could be better informed by experiences exchanges to minimize recurrence of undesired outcomes; (iv) relative isolation of practitioners between countries with limited opportunities for interactive experience-based learning with counterparts in other countries; (v) limited dissemination and access to resources to practitioners in appropriate formats that enhance uptake	communities, practitioners; (iii) enhanced learning opportunities through direct professional and practitioner exchanges between countries and SIDS regions; (iv) stakeholders applying knowledge, tools and methods in solving local issues and contributing to improved resource management and reduced environmental degradation; (v) technical support agencies providing enhanced support in sharing information to improve design making; (vi) strengthened linkages amongst practitioners in various fields "community of practices" across SIDS regions		Assumptions: (i) Willingness to think and plan in cross-sectoral manner exists in key agencies; (ii) relevant conventions remain national priority; (iii) Regional best practices and innovative solutions are relevant to Saint Vincent; (iv) Community leaders with interest in widening their horizons can be identified and mobilized; (v) Community leaders successfully engage community members; (vi) Regional best practices and innovative solutions are available early enough in the project to be validated in St Vincent.
Sub-component 4.1.1: Technical exchanges and conference participation to facilitate knowledge transfer across the Caribbean and other SIDS regions	<ul style="list-style-type: none"> Number of technical exchanges Number of stakeholders participating in conference events 	<ul style="list-style-type: none"> There are periodic partnership technical exchanges and dialogues at regional and international for a transfer of experiences need to be deepened and filter to community level Several opportunities exist for participation at major conferences to showcase work and exchange ideas among SIDS regions outputs from such exchanges result in new intellectual contributions to projects and programmes including new initiatives. 	<p>Mid-term</p> <ul style="list-style-type: none"> At least 2 technical exchanges between countries within the Caribbean and 1 between other SIDS regions (target a maximum of 5 persons to participate) core stakeholders participate in at least 1 major event to present findings from national project (target max of 5 persons to attend such events) <p>End of Project</p> <ul style="list-style-type: none"> At least 4 technical exchanges within the Caribbean and 2 between other SIDS regions 	(i) Published compendium of best practices; (ii) MOUs/cooperation frameworks between cooperation agencies; (iii) conference proceedings	

Sub-Project Goal: Reduce and revert land degradation within the Georgetown watershed, Saint Vincent, by an integrated water, land and ecosystems management approach.					
Results Level	Indicator	Baseline	Targets	Sources of verification	Risks and Assumptions
			<ul style="list-style-type: none"> Stakeholders participate in total of at least 2 major events to present findings from national project. 		
<p>Sub-component 4.1.2: Suite of best practices and lessons learnt contributing to a Community of Practice (COP) in integrated water, land and ecosystems management for SIDS</p>	<ul style="list-style-type: none"> Approved/endorsed best practice guidelines by target users best practices readily available as reference in a compendium 	<ul style="list-style-type: none"> Limited formal capture of workable methods, tools and techniques; land, water and ecosystems management guidelines are not currently integrated within physical planning and development protocols but access to information platforms and practical application is not well understood The communities of practices are not well defined and requires further support and development inputs 	<p>Mid-term</p> <ul style="list-style-type: none"> at least 2 best practice guidelines published in various media formats and used by stakeholder project website for interactive sharing developed and functional <p>End of Project</p> <ul style="list-style-type: none"> At least 4 best practice guidelines published website actively used for information sharing 	<p>(i) Hosted Partnership meeting; (ii) meeting proceedings; (iii) trained personnel/community members in application of tools and techniques; (iv) training modules/resources/toolkit; (v) media releases</p>	

Annex 3.2: Letters of Co-financing

Co-financing letter from Government of St Vincent and the Grenadines will be negotiated at project inception.

Annex 3.3 Terms of Reference for Partners and Consultants

Project Manager

Description of Work

The Project Manager (PM) will manage the day-to-day activities of the project and is ultimately responsible for ensuring the achievement of the outputs and objectives including the production of all stipulated reports. The PM will report to the government selected authority (PS), UNEP and CEHI coordinators.

The PM is expected:

1. To lead and manage the day-to-day affairs of the project and the project staff including administration of the project in accordance with UNEP (GEF executing agency) procedures.
2. To lead the preparation of the TOR for national and international experts and other subcontracts, drafting of contracts for the experts, activity scheduling and reporting.
3. To be fully aware of and familiar with all financial and technical rules, regulations and procedures relevant to project implementation (UNEP/GEF and National Executing Agency).
4. To ensure the implementation of activities scheduled in the work plan such as meetings, workshops, training, inventories, surveys and assessments.
5. To coordinate, monitor and supervise the activities of consultants and short term experts providing input to the project including supervision of the implementation of activities undertaken by consultants and experts, logistics, review of technical and progress reports, achievement of project objectives and outputs and cost control.
6. To liaise regularly with the project team and to ensure that the decisions and recommendations of the Steering Committee and opinions of the project team are fully incorporated within the scope of the project implementation.
7. Summarizes and synthesizes the results of the project, and identifies follow-up activities.
8. Identifies and ensures synergy of this project with other relevant projects particularly GEF funded projects.
9. Collaborates with all relevant stakeholders to ensure active involvement in the implementation process.

Qualifications and experience:

The PM should possess the following or equivalent experience:

1. Preferably MSc. in Natural Resource or Environmental Management studies, natural sciences or other related disciplines;
2. Good understanding of natural resource, climate change, environment and development issues;
3. At least three years working experience in environmental discipline;
4. Experience with design and implementation of environmental programmes;

5. Good communication and management skills;
6. Computer skills.

Details for other consultancy services will be elaborated during the project inception phase

Annex 3.4. Carbon accounting – St. Vincent & the Grenadines

Outputs from FAO Ex-Ante Carbon-balance Tool (EX-ACT) tool

Project Name	IWECO St. Vincent & the Grenadines	
Continent	Central America	
Climate	Tropical	
Moisture regime	Moist	
Dominant Regional Soil Type	Volcanic Soils	
Duration of the Project (Years)	Implementation phase	4
	Capitalisation phase	1
	Duration of accounting	5

Total acreage of direct investment					15	ha
2.2 Afforestation/reforestation						
conversion of “degraded areas” to “plantation zone 2”					13.5	ha
2.3 Other land use changes						
conversion of “degraded areas” to “perennial tree crop”					1.5	ha
	Gross fluxes	Results per year				
	tCO₂eq	tCO₂eq				
	(Positive = source / negative = sink)	(Positive = source / negative = sink)				
	Without project	With project	Without project	With project	Balance	
Land Use Changes						
Deforestation	0.0	0.0	0.0	0.0	0	
Afforestation	0.0	-1,316.9	0.0	-263.4	-263.39	
Other	0.0	-47.5	0.0	-9.5	-9.4985	
Agriculture						
Annual	0.0	0.0	0.0	0.0	0	
Perennial	0.0	-38.9	0.0	-7.8	-7.78	
Rice	0.0	0.0	0.0	0.0	0	
Grassland & Livestocks						
Grassland	0.0	0.0	0.0	0.0	0	
Livestock	0.0	0.0	0.0	0.0	0	
Degradation	0.0	0.0	0.0	0.0	0	
Inputs & Investments	0.0	0.0	0.0	0.0	0	
Total	0.0	-1403.34	0.0	-280.668	-280.668	
Per hectare	0.0	-93.556				
Per hectare per year	0.0	-18.7112	0	-18.7112	-18.7112	