



GLOBAL ENVIRONMENT FACILITY
INVESTING IN OUR PLANET

Naoko Ishii
CEO and Chairperson

September 12, 2014

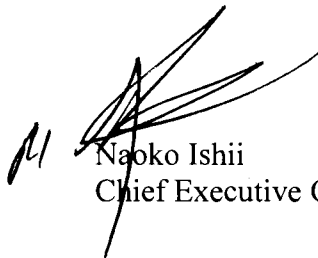
Dear Council Member:

UNDP as the Implementing Agency for the project entitled: ***Grenada: Implementing a "Ridge to Reef" Approach to Protecting Biodiversity and Ecosystem Functions within and Around Protected Areas***, has submitted the attached proposed project document for CEO endorsement prior to final approval of the project document in accordance with UNDP procedures.

The Secretariat has reviewed the project document. It is consistent with the proposal approved by Council in November 2012 and the proposed project remains consistent with the Instrument and GEF policies and procedures. The attached explanation prepared by UNDP satisfactorily details how Council's comments and those of the STAP have been addressed. I am, therefore, endorsing the project document.

We have today posted the proposed project document on the GEF website at www.TheGEF.org. If you do not have access to the Web, you may request the local field office of UNDP or the World Bank to download the document for you. Alternatively, you may request a copy of the document from the Secretariat. If you make such a request, please confirm for us your current mailing address.

Sincerely,



Naoko Ishii
Chief Executive Officer and Chairperson

Attachment: GEFSEC Project Review Document

cc: Country Operational Focal Point, GEF Agencies, STAP, Trustee



**REQUEST FOR CEO ENDORSEMENT
PROJECT TYPE: FULL-SIZED PROJECT TYPE
OF TRUST FUND: GEF TRUST FUND**

PART I: PROJECT IDENTIFICATION/INFORMATION

Project Title:	Implementing a “Ridge to Reef” approach to protecting biodiversity and ecosystem functions within and around protected areas in Grenada		
Country(ies):	Grenada	GEF Project ID:	5069
GEF Agency(ies):	UNDP	GEF Agency Project ID:	5087
Other Executing Partner(s):	Ministry of Agriculture, Lands, Forestry, Fisheries and the Environment	Submission Date:	July 3, 2014
GEF Focal Area (s):	Multi-Focal Area	Project Duration (Months):	60
Name of Parent program (if applicable): For SFM/REDD+	NA	Agency Fee (\$):	303,167

A. FOCAL AREA STRATEGY FRAMEWORK:

Focal Area Objectives	Expected FA Outcomes	Expected FA Outputs	Trust Fund	Indicative Financing from the GEF TF (\$)*	Indicative Co-financing (\$)
BD-1	Outcome 1.1: Improved management effectiveness of existing and new protected areas.	Output 1.1. New protected areas (5) and coverage (12,400 hectares) of unprotected ecosystems	GEF TF	1,213,636	10,561,822
LD-3	Outcome 3.2: Integrated landscape management practices adopted by local communities Outcome 3.3: Increased investments in integrated landscape management	Output 3.2 INRM tools and methodologies developed and tested Output 3.4 Information on INRM technologies and good practice guidelines disseminated	GEF TF	981,364	3,740,000
SFM-REDD-1	Outcome 1.3: Good management practices adopted by relevant economic actors	Output 1.3. Types and quantity of services generated through SFM	GEF TF	696,825	350,000
Sub-Total				2,891,825	14,651,822
Project Management Cost				139,841	775,000
Total Project Cost				3,031,666	15,426,822

* Applying the flexibility mechanism a total of US\$481,364 of LD STAR Allocation is being channeled to BD for BD-1 Outcome 1.1. In addition, US\$70,000 of BD and US\$35,000 of LD are allocated to project management. Thus for the FSP, US\$1,283,636 amount of BD resources are being allocated and US\$1,016,364 of LD. Amounts including fees are shown in table D.

B. PROJECT FRAMEWORK

Project Objective: To ensure that biodiversity and ecosystem functions within and around marine and terrestrial PAs in Grenada are better protected from threats through the adoption of an integrated “ridge to reef” approach that increases PA management effectiveness and applies targeted sustainable land management practices						
Project Component	Type (TA / INV)	Expected Outcomes	Expected Outputs	Trust Fund	Indicative Financing from GEF TF (\$)	Indicative Cofinancing (\$)
1. Establishment and effective Management of new and existing Protected Areas	TA	Protected Areas estate is expanded from 8 to 9 terrestrial PAs as well as inclusion of 4 mini-TPAs covering a total of 2,931 ha. (increase of 1,000 ha. from baseline of 1,931 ha.) and from 3 to 7 marine PAs covering 13,180 h. (increase of 11,400 ha. from baseline of 1,780 ha.) o Threats facing PAs (encroachment / development, mining, pollution / sedimentation) are reduced across an area of 16,111 ha:	1.1 Institutional Framework for PA System Management: Formal establishment and operation of National Parks Advisory Council for terrestrial PAs and Management Committee for marine PAs; strategic plans prepared for these bodies; policies for conservation of natural and cultural resources and visitor management in PAs established; and PA System Business Plan developed and implemented 1.2 Legal / Regulatory Framework for Protected Areas: Finalize and approve draft “Protected Area, Forestry and Wildlife Act” and associated Statutory Rules and Orders; update MPA Act 1999; establish regulations to authorize PA visitor fee systems; consolidate legal processes to include private lands PA	GEF TF	1,945,000	10,561,822

		<ul style="list-style-type: none"> ○ <i>Forest area maintained at 10,012 hectares or increased, per satellite imagery</i> ○ <i>Direct carbon benefits: Avoided deforestation through legally establishing Mt. St. Catherine PA and reducing pressure on forests conserves total carbon stock of 81,652.5 tC</i> ○ <i>Indirect carbon benefits: Institutional strengthening on fire management, and control of encroachment and slash and burn agriculture, avoids deforestation at all terrestrial PAs conserves total carbon stock of 322,158,3tC</i> ○ <i>Marine/seascapes maintained or increased: mangrove cover 231 Ha, seagrass bed 1301 Ha and coral reef areas 5095 Ha, per satellite imagery.</i> ○ Increased representation of critical ecosystems within PA system: Grenada Dove habitat; Dry Deciduous Forest; Semi-deciduous Forest; Drought Deciduous Forest; Seagrass; Mangroves; Intertidal reef flat ○ PA Agency actively implementing functions across PA system (planning; capacity building; enforcement), with improved management effectiveness for overall PA system as measured by increase of METTs for 9 existing PAs from Baseline avg of 53 to at least 62. 	<p>1.3 Expanded Protected Areas system</p> <ul style="list-style-type: none"> ○ 1 new Terrestrial PA unit (Mt. St. Catherine NP) and 4 mini-TPAs demarcated and legally established ○ 4 new Marine PA units (Grand Anse, Southeast Coast, Levera, and White Island) demarcated and legally established ○ Management plans in place for the 5 new PA units as well as existing Morne Gazo Forest Reserve; updated management plan for Mt. Hartman National Park ○ Infrastructure in place at selected PAs: interpretive centers, offices, trails, signage, viewing platforms, fish landing/sales facilities, moorings, fire watch towers / equipment <p>1.4 Management of Protected Area Units Institutionalized</p> <ul style="list-style-type: none"> ○ Coral Reef Resilience Program at Sandy Island/ Oyster Bed MPA ○ Sustainable forest management (prevention / control of fires and slash and burn agriculture, encroachment of housing / tourism facilities) ○ PA staff trained in planning, accounting, biophysical monitoring, enforcement, fire management, and co-management approaches at all new PAs and selected existing PAs: Moliniere / Beausejour; Woburn / Clarks Court Bay; and Sandy Island / Oyster Bed MPAs, and Mt. Hartman; Morne Gazo; Perserverance; Grand Etang; Annandale Terrestrial PAs <p>1.5 Conservation and sustainable use of natural resources as a means for community involvement in PA co-management:</p> <ul style="list-style-type: none"> ○ In communities adjacent to established Marine PAs (3 sites): coral reef restoration / propagation initiatives; seaweed aquaculture; Fish Aggregation Devices (FADs); community scuba diving cooperatives; and craft booths ○ In communities adjacent to or within established Terrestrial PAs(3 sites):beekeeping, tour guiding, agro-processing, craft making, use of non-timber forest products; improved practices to avoid fire damage and reduce slash and burn agriculture. 			
2. Climate resilient SLM practices applied in the Beausejour Watershed to reduce threats adjacent to and upstream of PAs	TA	<p>Climate resilient SLM technologies implemented by local communities in the 1,547 hectares of the Beausejour Watershed lead to improved habitat integrity in the Annandale Forest Reserve within the watershed and the surrounding landscape, as well as the two MPAs directly downstream:</p> <ul style="list-style-type: none"> ● Threats to ecosystem functions (encroachment, pollution / sedimentation, mining) are reduced: ● <i>Direct Carbon Benefits: Avoided deforestation on at least 50% of private forest lands (337.3 ha.) through enforcement of regulations on clearing steep slopes / riparian zones conserves total</i> 	<p>2.1: Strengthened planning and management framework, capacities and awareness for participatory sustainable resource management</p> <ul style="list-style-type: none"> ○ Regulations developed and implemented to prevent spread of agriculture and housing, including protection of high priority BD habitat and areas prone to land and forest degradation ○ National Forest Policy (NFP) updated to include focus on carbon sequestration; draft legislation to support NFP, and related statutory rules and orders for enforcement (including regulations for private forest lands), developed and enacted ○ Inter-sectoral Committee for the Beausejour Watershed established and implementing watershed management plan with INRM (SLM and SFM) approaches ○ Water quality / quantity monitoring systems, with associated tools to enhance coordination and information access to monitor sediment and pollution impacts on downstream MPAs. 	GEF TF	946,825	4,090,000

		<p>carbon stock of 9,613 tC</p> <ul style="list-style-type: none"> • Direct Carbon Benefits: Increase of forest cover through enrichment planting (150 ha.) and removal of bamboo (40 ha.) increases carbon stock by 4,320tC during project lifetime • Indirect Carbon Benefits: Avoided deforestation of total carbon stock in all forests in the Beausejour watershed by watershed-level planning and management: 26,066.1tC • 15% reduction in sediment and fertilizer/pesticide levels at 2 MPAs downstream of watershed • Adoption of sustainable agricultural practices in 6 communities preserving ecosystem functions and improving livelihoods, as demonstrated by: <ul style="list-style-type: none"> • Reduced levels of soil erosion in steep upland areas(baseline TBD Year 1 per UN/FAO/ LADA tools) • Increase in net household income (baseline TBD Year 1) 	<p>2.2: Improved SLM and SFM practices in 6 communities resulting in reduced deforestation and land and forest degradation in the landscapes surrounding PAs:</p> <ul style="list-style-type: none"> ○ Sustainable agricultural production implemented(soil conservation; soil enrichment; water management; apiculture), including capacity building for farmers and farmer organizations, product development for export compliance, and marketing assistance ○ Sustainable rangeland management implemented (fencing; assessment of grazing animal capacity in relation to LD risk and vulnerabilities near rivers; enforcement of regulations on grazing) ○ Sustainable forest management (SFM) practices applied: planting of agroforestry crops on steep sloping land and on degraded land affected by droughts, fires, hurricanes; rehabilitation with native forest species following removal of invasive bamboo (PA and private lands);fire prevention and control; restrictions on slash and burn agriculture; expanded capacity of existing forestry nurseries; local community members and DFNP staff trained in SFM, including enrichment planting, maintenance and monitoring, NTFP management. 			
Sub-Total					2,891,825	14,651,822
Project Management Cost					139,841	775,000
Total Project Costs					3,031,666	15,426,822

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

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Amount (\$)
National Government	Ministry of Agriculture, Lands, Forestry, Fisheries and the Environment – Environment Division	In-Kind	6,130,525
National Government	Ministry of Agriculture, Lands, Forestry, Fisheries and the Environment – Forestry & National Parks Division	In-Kind	2,250,000
National Government	Ministry of Agriculture, Lands, Forestry, Fisheries and the Environment – Fisheries Division	In-Kind	4,629,630
National Government	Ministry of Tourism	In-Kind	2,166,667
GEF Agency	UNDP	Cash	250,000
Total Co-financing			15,426,822

D. GEF/LDCF/SCCF/NPIF RESOURCES REQUESTED BY AGENCY, FOCAL AREA AND COUNTRY¹:

GEF Agency	Type of Trust Fund	Focal area	Country name/Global	Project amount (a)	Agency Fee (b)	Total c=a+b
UNDP	GEF	Biodiversity	Grenada	1,283,636	128,364	1,412,000
UNDP	GEF	Land Degradation	Grenada	1,016,364	101,636	1,118,000
UNDP	GEF	SFM – REDD-1	Grenada	731,666	73,167	804,833
Total Grant Resources				3,031,666	303,167	3,334,833

E. Consultants working for technical assistance components:

Component	Grant amount (USD)	Co-financing (USD)	Project Total (USD)
International consultants	26,500	-	26,500
National/Local consultants	592,909	-	592,909

Does the project include a non-grant instrument? No

PART II: PROJECT JUSTIFICATION

A. DESCRIBE ANY CHANGES IN ALIGNMENT WITH THE PROJECT DESIGN OF THE ORIGINAL PIF¹

This Full Sized Project (FSP) is closely aligned to the original basic design, PIF. The structure of the project components closely resembles the approved PIF. However, in a few cases it became necessary to make some minor adjustments which do not represent any substantial deviation from the projects strategy as defined originally in the PIF and are not expected to have a significant impact on the funds of GEF and co-financing as originally budgeted.

A.1. National strategies and plans/reports/assessments, if applicable, ie. NAPAS, TMP, NEMS, NBSAP(2000), NAP (2006) NCSA, NEP(2000), GPASP (2011), Grenada declaration (2006), Caribbean challenge (2008): **N/A**.

A.2. *GEF Focal Areas, strategies, eligibility criteria and priorities:* **N/A**

A.3. *GEF agency's comparative advantage:* **N/A**

A.4. *The baseline project and the problems it seeks to address:*

The project's baseline was reviewed and updated during the PPG. The baseline scenario presented in the PIF was considered insufficient regarding efforts for enhancing land/forest and seascapes management and biodiversity conservation in the project area in order to secure the flow of ecosystems foods and services. The baseline analysis provided in the ProDoc Annexes is now more complete regarding investments /interventions related to CC, SFM/REDD⁺, SLM, BD and LD.

CCM: The Ridge to Reef Project is expected to address the problem of carbon emissions in a programmed way as one of its initiatives. The Government's energy unit is promoting the use of solar panels as an alternative energy source to traditional electricity sources generated through carbon fuel-oil. This is being complemented by another initiative to promote the generation of electricity from wind energy. The Ridge to Reef Project's impact on enhanced forest and reef management is expected to provide additional emissions benefits to complement these initiatives' efforts. All such initiatives are meant to contribute to Grenada's fulfillment of the Millennium Development Goals and Targets (MDG/ 7.B.) with respect to reduced emissions of ozone-depleting substances.

SFM/REDD⁺: The Ridge to Reef Project seeks to address the problem of increased emissions from deforestation and forest degradation; and to a lesser extent, the emissions associated with the degradation of marine vegetation such as coral reefs and sea grass beds. At present, Grenada has no programmatic

¹ For questions A.1 –A.7 in Part II, if there are no changes since PIF and if not specifically requested in the review sheet at PIF stage, then no need to respond, please enter "NA" after the respective question.

and deliberate REDD⁺ strategy and its efforts at addressing a national REDD⁺ strategy/R-PP is at a very incipient stage, with the Department of the Environment acting as focal point. The Grenada Readiness (REDD⁺) process, as determined by a Readiness Preparation Proposal to the Forest Carbon Partnership Facility (FCPF), has the following stages or components that it might fulfill: (a) organization and consultation; (b) construction of a REDD+ national strategy; (c) development of a reference level for the assessment of emission reduction targets; and (d) design of a monitoring system to assess emissions and removals. In the absence of a REDD+ National strategy, both Government and civil society have been pursuing isolated initiatives/pilot projects, related to voluntary carbon conservation. The Ridge to Reef Project has “designed-in” baseline references and targets for its SFM/REDD⁺ interventions/investments, thereby complementing the efforts to be pursued through the R-PP and an eventual REDD+ National Strategy.

Furthermore, with regards to deforestation and unsustainable forest management, the Government of Grenada is promoting a program to reduce deforestation and promote SFM principles and practices through collaboration with farmers and landowners via initiatives such as the OPAALS (2005-2011), i.e. OECS Protected Areas and Associated Livelihoods activities in communities surrounding the Annandale and Grand-Etang Forest reserves, as well as public awareness and action by farmer/landowners as first responders to potential wild-land fires. At present, there are no programs for rewards to farmers/landowners for specific contributions to reductions in carbon emissions through reduction in deforestation or enrichments. However, the Ridge to Reef investment in forest management has designed-in initiatives that would sensitize private farmers/land owners to collaborate within a corporate SFM strategy in and around designated PAs. Of special note is the plan within the Project to involve a number of farmers and landowners (14 females, 14 males) in forest enrichment and rehabilitation initiatives on their private lands, involving 150ha. of enrichment and 40ha. of rehabilitation. Based on a survey done during the PPG, it is estimated that during the Project’s 5 year period (2014-2019), an additional 190 ha. of forest will be enriched and 337.3ha. of existing forest will be saved from deforestation within the Project’s pilot area. The benefits of these investments are estimated at: 9,613tC sequestered in direct C from avoided deforestation on 337.3 ha.; 4,320tC sequestered in direct C benefits from 190ha. of Agro-forest enrichment.

SLM/Sustainable Reef Management: Baseline activities are working to address the problem of forest cover loss that translates into accelerated rates of sedimentation on reefs, degradation of land through wild-land fires and recent hurricanes, coupled with very subdued natural regeneration and with the inexorable need for landowners and farmers to earn livelihoods from agriculture in the pilot area and at other locations. The Ridge to Reef Project has multiple designed-in interventions that would facilitate delivery of both technical and material assistance in the areas of: (i) Enhanced agriculture production and marketing (soil conservation and productivity practices, product value-added); (ii) Sustainable rangeland management (training in fencing techniques, material support, a diverse impact reduction schemes, community-based rule-making initiatives); (iii) Sustainable forest management that seeks to involve farmers land owners in forest rehabilitation using agro-forest species; and with deliberate sensitivity to the adjacent TPA and MPA. Another initiative promoted by a local car dealer is for the sequestration of waste oil to be burned in a furnace-digester and thereby promoting waste oil sequestration by other waste oil producing businesses. NB: the sole electricity generating plant in Grenada sequesters its waste oil and exports to another country. Waste oil sequestration could contribute considerably to reducing spill on the marine environment.

Biodiversity: The sheltered valleys within the Beausejour/Annandale Grenville Vale watershed host unique examples of exemplary forest biodiversity that are currently under threat from wild-land fires and compounding landslides aggravated by expanding agriculture. The Protected Areas System is an essential dimension of the conservation/management strategies for forested biodiversity. Recent engagements of farmers and landowners in the 2005-2011 OPAALS initiative and the Australian Government’s Reef Guardianship Program involving local area farmers in the Beausejour Annandale watershed to conduct farming practices are expected to provide synergies with the efforts of this Ridge to Reef Project.

Differences between the Project Identification Form (PIF) and the Full-sized Project

PIF expected outputs (“As originally designed outputs”)	Project document outputs (“As-adjusted outputs”)
Component 1	Outcome 1
1.1.1 - Creation of a TPA strategic management body as advisory council (NPAC) to oversee development and administration of policy and a Strategic plan of action for TPAs	Emphasis is placed on the importance of ensuring that clear policy is in place to guide and support institutional strengthening, including the development and administration of a Strategic Plan of Action for TPAs - <i>policy should precede and guide strategic planning</i> ; the strategic plan should be clearly policy-based.
1.1.2 – Creation of a MPA strategic management body as Advisory Committee (NMPAC) to oversee development and administration of a policy and a strategic plan of action for MPAs	A national MPA committee is already established by promulgation under SRO; as mentioned above, policy should be defined prior to a strategic management plan and guide the development of such a plan.
1.2.1 – Enactment of enhanced parent law (with SROs) in order to enable greater management effectiveness of an expanded TPA network	The Protected Areas, Forestry and Wildlife Bill will be enhanced to thoroughly consider institutional capacity.
1.2.2 – An adopted MPA amendment Act (1999) or a new MPA Act more suited for management of the planned expanded MPA network.	Adaptive MPA Act as response to community wide consultations with key stakeholders.
1.3.1. – An expanded protected areas system: Number of TPAs increased from 8 to 9 with number of hectares increased from 1,931 ha. to 2931 ha.	Minor changes were made in the total area to include 4 mini TPAs as requested by stakeholders
Number of MPAs increased from 3 to 7, with number of hectares increased from 1,780 ha to 13,180 ha.	As planned in PIF
Mt. St. Catherine legally established and with management plans and infrastructure.	As planned in PIF
Management plans for 5 new TPAs and 2 existing TPA set in place.	As planned in PIF
Demarcations, management plans and infrastructure set in place for 4 new MPAs.	As planned in PIF
Component 2	Outcome 2
2.1 Strengthened planning and management framework, capacities and awareness for participatory sustainable resource management	This has been expanded to specifically consider community consensus on collaboration through co-management initiatives for planning.
2.1.1 Intersectoral committee setup	Co-management initiatives for livelihoods and INRM; consistent with PIF.
2.1.2. Community consensus on measures to adopt to mitigate environment threats.	A draft watershed management plan to be reviewed by local persons; as planned in PIF.
2.1.3 Training for staff of DFNP and FD.	As planned in PIF

PIF expected outputs (“As originally designed outputs”)	Project document outputs (“As-adjusted outputs”)
2.1.4 DFNP and F-D Staff collaborate with local area persons for management and enforcement.	As planned in PIF.
2.2. Improved management of Agricultural lands in six communities resulting in reduced threats to BD and Ecosystems functions.	Planned for Beausejour watershed.
2.2.1 Sustainable Agro-production initiative.	As planned in PIF.
2.2.2 Sustainable Range land initiative.	As planned in PIF.
2.2.3 – Sustainable Forestry management and enrichment by agro-forestry initiative.	As planned in PIF.

A.5. ***Incremental/additional cost reasoning: describe the incremental (GEF/TF) or additional activities requested for GEF financing and the associated global environmental benefits (GEG/TF) or associated Adaptation benefits to be delivered by the project. N/A***

A.6. ***Risks, including Climate Change, potential social and environmental risks that might prevent the project objectives from being achieved, and measures to address these risks.***

The risk table has been updated based on the PPG findings:

Risk	Risk Level	Risk Mitigation Strategy
1. Limited Government readiness for SFM/REDD ⁺	M	While there is evidence of institutional weaknesses regarding SFM/REDD ⁺ (e.g. limited staff at the forestry department), the recent initiatives of OPAAL (2005-2011), where collaboration was forged with farmers groups in the pilot area, indicate good prospects for capacity enhancement that would specifically benefit SFM/REDD ⁺ practices on landscapes. The Project will offer opportunity for long-term forest management through training in technologies and methodologies and with enhanced experience in co-management. This will, in turn, complement the longer-term process of the REDD ⁺ strategy to improve readiness and institutional capacity for SFM/REDD ⁺ , LD and BD management and conservation.
2. Climate change exacerbates the effects of inappropriate land-use practices	H	Climate Change, through increased hurricanes and severe dry and rainy seasons, exacerbates the impacts of fragmented ‘slash and burn’ agriculture by increasing flooding and degradation of steep slope landscapes, oftentimes hampering natural regrowth. While the ecosystem recovery from these practices is more difficult because of the impacts of CC, the Project will engage in SLM and SFM measures that will help mitigate these effects. Re-vegetation and coral reef, mangrove and forest conservation activities will contribute to reducing the impacts of hurricanes on ecosystem services and human infrastructure (through coastal protection). Specifically, the Project will implement an agro-forestry program using drought resistant plants to recover these bare landscapes and increase resilience to climate change impacts, while offering prospects for farmers and landowners to earn an income from the tree crops generated from these efforts. The Project will engage local area farmers and landowners in a number of LD, SLM, SFM/REDD ⁺ and CC adaptation practices with a special focus on monitoring water quality for its potable qualities and also for sediment loading. As a co-management exercise, the Project will also demonstrate the benefits of the SLM and SFM practices accommodated by

Risk	Risk Level	Risk Mitigation Strategy
		land and sea users on the quality of water within the watershed and MPA over the project's lifetime.
3. Marine and terrestrial ecosystems are not sufficiently resilient and their biological and physical integrity is compromised by the effects of global and regional climate change	M	The existing and proposed terrestrial and marine PAs together will be large enough, and encompass enough different types of ecosystems, to sustain biodiversity and ecosystem services even in the face of climate change impacts such as gradually increasing temperatures, increased hurricanes, and droughts.
4. Uncertainty concerning sea-use management in the near-shore sea zone	L	The Project will support policy, institutional and pilot activities to ensure that BD and ecosystems functions in and around PAs are protected against threats related to "land-sea" leasing practices for building marinas, and will address issues of sea-use from the perspective of bio-impacts as well as quality of coastal ecosystems services. Increased capacity and institutional strengthening through the Project will enhance the management effectiveness of marinas and MPAs alike in order to lower the risks related to sea-use in the near-shore sea zone.
5. Lack of an effective formula for incorporating private lands into the PAs network	M-H	Mt. St. Catherine has been deemed to have strong potential for either a restrictive land development control (LDC) model or a co-management model in the context of an effective island-wide policy-based implementation of PAs and adjacent landscape management. The Project will actively promote options that acquire public buy-in for the incorporation of private lands into the PA system while protecting the property rights of citizens.
6. Lack of local stakeholders involvement in co-management initiatives.	M-L	The Project will engage relevant stakeholders (NGOs, CBOs, local area persons and Competent Authorities) in co-management initiatives that effectively couple the livelihood interests of local area farmers and landowners with Competent Authorities' INRM objectives.
7. Uncertainty of institutionalizing and maintaining a sustainably financed PA network	M	The Project will support the institutionalization of an expanded PA network through enhanced facilities and management effectiveness for selected PAs, as well as the strengthening of the legal/regulatory base for the network. The Project will demonstrate in increments how a Sustainable Financing Plan for maintaining a network of PAs can be made to work. While the prospect of applying user fees as an instrument for sustainable financing is remote since most of the PAs are very small, an innovative framework where PAs within a managed network are commercialized, not privatized, could generate revenues from local as well as tourist users of the PAs. The Project will establish a PA system business plan and undertake awareness-raising on the cost-effectiveness of conservation, management and importance of BD and ecosystem services provided by PAs, in order to generate clear information on the economic benefits of PAs so as to increase political support for their funding.
8. Government fails to sustain its political and	M	The Government has declared a plan to cut recurrent spending by 20% for a number of years from 2014 onward, thereby putting at risk the integration of PAs into the Government's Annual Recurrent Estimates of Revenue and

Risk	Risk Level	Risk Mitigation Strategy
financial support for PA planning and operations		Expenditure Program past the lifetime of the Project. The Project's interventions will complement and bolster baseline programs and garner support for the Government's commitment to maintain current staff levels for these baseline programs. Through the support of UNDP, the Project will sustain the interest of Government officials by keeping them informed of the Project's achievements through various means (e.g. Steering Committee, learning and knowledge sharing, and field visits). Collaborative practices and ongoing Government contributions through technical input from baseline activities, offer good potential for sustainable support for the BD and ecosystems functions agenda. There are high prospects for significant lessons to be learned and replication of experiences in other watersheds since area farmers have had very good prior engagement in livelihoods-focused initiatives (e.g. GEF agro-forestry and OECS OPAALS projects in recent times), and thus stakeholder/constituent interest will warrant continued political/financial support.

Key: High Risk (H); Medium Risk (M); Low Risk (L)

A.7.Coordination with other relevant GEF financed initiatives:

Implementing Integrated Land, Water & Wastewater Management in Caribbean SIDS project (2012-2016) with GEF funding of US\$20.4 million. In Grenada, the lead agencies are the Ministry of Agriculture through the Land Use Division and the Forestry Department. Activities in Grenada will focus on: 1) Develop and apply national IW related indicators and strengthen the scientific basis for effective monitoring and assessment in the LD and related BD Focal Areas, by developing improved methods for multi-scale assessment and monitoring of land degradation trends, and for impact monitoring of GEF investment in SLM and ecosystem services maintenance; 2) Policy, legislative and institutional reforms and capacity building for IWRM / SLM, including reforms that address lack of financing and policy, tools and guidelines for the future sustainable use of water resources and sustainable forest management, waste-water management, and protection from drought; as well as coordination among relevant national sectors and strengthening and expansion of National Inter-sectoral Committees (NICs), harmonization with national plans, and implementation of programmes of cross-sectoral sensitization and awareness raising, along with training and capacity building in the identified national institutions and private sector; and 3) Knowledge Exchange, best-practices, replication and stakeholder involvement to identify and share best practices and lessons in relation to water resource management/use methodologies; consultative dialogues to ensure engagement of relevant policy, sectoral, local community and expertise (scientific, technical, etc.), ensuring input from local communities and associated structures (for instance fishers associations, farmers associations, NGOs, CBOs and local government).

Sustainable Financing & Management of Eastern Caribbean Marine Ecosystem Project: This GEF-WB-TNC project, launched in March 2012, has a total Budget of US\$19.4 million, including \$8.75 million from the GEF. Component 1 of the project, "Establishment of sustainable financing mechanisms", will establish a Caribbean Biodiversity Fund (CBF) for participating OECS countries (Antigua and Barbuda; Grenada; St. Kitts and Nevis; St. Lucia; and St. Vincent and the Grenadines) with an endowment of at least US\$15 million to generate income for protected areas management, as well as national level trust funds (NPATFs) providing at least US\$1.5 million per year in total to the five participating countries by the end of the project. Component 2 of the project, "Strengthening and phased expansion of Marine Protected Area Networks", will gazette at least five new marine protected areas and establish at least two demonstration sites to generate useful MPA management information and lessons for other countries in the Caribbean region. Component 3 of the project, "Deployment of a regional monitoring and information system" is intended to establish a database on status and trends in the protected area systems of the OECS countries, which could serve as a decision support tool to natural resource managers and policymakers. Although the emphasis of this component would be on Coastal and Marine Protected Area

networks, the methods and indicators developed would be highly relevant to terrestrial protected areas. In Grenada, the Woburn / Clarke's Court Bay Marine Protected Area has been selected as one of the two demonstration sites in which a suite of activities to enhance management effectiveness will be supported by the project. Specific activities will be selected during project implementation, but possibilities identified include: development of managed dive and snorkel sites; multiple use zoning and demarcation activities; education and outreach programs; capacity building at the community level for ecotourism; incentives for fostering partnerships with research institutions; and Sustainable Development Action Plans (SDAPs). The Ridge to Reef project will complement this regional project by supporting the development of management plans; by expanding the national network of both new and existing terrestrial and marine protected areas, and improving on-the-ground protection at those sites; and by developing other PA financing options (e.g. visitor fees).

A. *Additional Information Not Addressed At PIF Stage:*

B.1. *Describe how stakeholders will be engaged in project implementation:*

Stakeholder engagement in the project was initiated during the project conceptualization phase in 2011-12 during which the project proponents collaborated with a number of technical persons, representatives of NGOs/CBOs and local environmentalists. During the PPG phase, the stakeholder participation plan for the Full project implementation phase was defined. These are described as follows:

Stakeholder participation during project preparation

During the first phase of the PPG period, key stakeholders participated in planning and project design workshops, as well as smaller focus group sessions and meetings. The second phase of the PPG period accommodated UNDP's technical assistance in articulating the project design formulated by the local proponents/stakeholders into a basic design that satisfied more fully the global objectives of the GEF, as donor. The PIF, approved in late 2012, served as the basic design for preparation of the FSP. The subsequent participatory fora included: (i) A PPG/FSP inception workshop; (ii) a stakeholder workshop for CBOs and NGOs; (iii) a workshop for technical officers from Competent Authorities expected to directly participate in project implementation; and (iv) an all-stakeholder workshop to examine the project results framework prepared by the consultants. Additionally, several individual meetings and consultations with key administrators and managers were held during the PPG period so as to further garner support for the project as a multi-sectoral, multifocal, cross-cutting initiative. Descriptions of the PPG phase workshops/fora are presented below:

Inception workshop of PPG phase

The inception workshop was held on 23/07/2013 in St. Georges. The objectives of the workshop included: (i) assist the PPG/FSP project team to understand and take ownership of the project goals and objectives; (ii) ensure that the project team and other stakeholders have a clear understanding of what the PPG/FSP phase seeks to achieve as well as their own roles and responsibilities in successfully carrying out the PPG/FSP activities; (iii) reaffirm and rebuild commitment and momentum among key stakeholders, by consensus, for the PPG/FSP phase, and; (iv) validate the PPG/FSP work plan as specified for the consultants and the stakeholders. The participants in the PPG inception exercise included: Ministry of Finance, Forestry Division, Fisheries Division, the UNDP sub-regional office Representative, an environmental consultant, and the members of the team of consultants for the FSP preparation exercise.

CBO/NGO focus group meeting

This focus group meeting was held on 23/08/2013 in collaboration between the consultant team and IAGDO (Inter-Agency Group of Development Organizations). This meeting gave opportunity for the consulting team and representatives of the project proponents to explain the goals and objectives of the Ridge to Reef project and to explain what opportunities were available for NGOs/CBOs and Government Competent Authorities to collaborate during the project implementation phase.

The PPG consultants also organized meetings with farmers/landowners, with various officers performing specialized functions within the partner authorities, with leaders of various CBOs/NGOs, and with

administrators and various persons from academic institutions/centers of excellence. These meetings had the principal purpose of gleaning ideas on detailed design of project activities/sub-activities and for identifying partnerships with various vested interests.

Project results framework workshop

This focus group meeting was held 21/01/2014 in St. Georges with a group of Technical officers from the Competent Authorities. This group of officers was considered as those who would most likely be directly involved in the Project's activities and should therefore understand the details of the planned outcomes and outputs. This meeting was organized by the consultants with the prime objective of not only explaining planned outputs and outcomes but also to make the officers aware of their potential roles in the implementation process, especially as there was the strong expectation that CBOs/NGOs were going to be involved in the implementation of the project, in a co-management relationship, but led by the officers within relevant Competent Authorities.

Stakeholder participation plan for the project implementation phase:

Annex 5 of the ProDoc provides a detailed participation plan, a summary of which is provided here. The project will engage a diverse set of stakeholders. Table 3 provides a description of the principal stakeholders who have expressed interest in and ought to be involved in the project. The project's success is dependent upon their active participation in the implementation of project activities, and will require an effective communication mechanism to ensure their participation. As such, the formulation of the stakeholder participation plan adopted the following objectives:

- (i) Clearly identify the potential roles and responsibilities of the main participants in the project;
- (ii) Ensure full knowledge by those involved concerning the progress and obstacles in project development and to take advantages of the experience and skills of competent participants for enhancing project activities;
- (iii) Identify key instances in the project cycle where stakeholder involvement would occur.

The ultimate purpose of the stakeholder participation plan is the long-term sustainability of project achievements, based on openness and effective participation of all key stakeholders.

The Project identifies different categories of stakeholders in terms of responsibilities, roles and vested interests. For the Government Competent Authorities, there are those with direct biodiversity and ecosystem relevance whose roles and responsibilities are considered virtual obligations. The Competent Authorities that are beneficiaries of the enhanced environment include the National Water and Sewerage Authority (NAWASA) as recipient of an enhanced water source, while the Ministry of Tourism will benefit from enhanced tourism sites. The Fisheries Division, as Competent Authority, will have an opportunity to better fulfill its mandate of ensuring optimal utilization of fisheries resources. The Forestry Department will have an opportunity to better fulfill its objective of collaborating with allied agencies within the Ministry of Agriculture (Extension Services, Agronomy, Land Use etc.) for ensuring optimal utilization of forested landscapes that perform multiple ecosystems service functions.

NGOs will serve as providers of technical assistance for empowering local area persons, and as such, they will be recipients of financial and other support, as well as responsible agents impacting local area communities in fulfillment of their mission of empowerment. Meanwhile, Community-based organizations (farmers, fishers and community development) will be both recipients of assistance and facilitators of development targeted at their individual vested interests.

Finally, as a result of the synergies created through the Project's co-programming with other initiatives, donor/co-financing entities are able to increase the impact of their contributions to conservation and management of BD and ecosystems functions & services at the local level while supporting global and local benefits.

Table 3. Key Stakeholders considered highly relevant to the project

STAKEHOLDER (SH)	EXPECTED ROLE/CONTRIBUTION IN PROJECT IMPLEMENTATION
Ministry of Agriculture, Lands, Forestry, Fisheries and the Environment (MLFFE)	<p>This Competent Authority(CA) of Government responsible for ensuring that the policy and legal framework are in place for effective management of natural resources, specifically BD and ecosystems services, and will have overall responsibility for implementation of the project.</p> <p>This CA is the agency with the widest scope of knowledge, skills, competencies and historical experience for dealing with various aspects of the implementation and with legal and regulatory authority, and is well placed to engage various Divisions as well as land based/ sea based livelihoods communities for the purpose of protecting BD and ecosystems functions.</p>
Division of Fisheries (Management)	This CA within the MLFFE is directly responsible for conservation and management of seashore stocks, habitats and sea space directly impacted by land-based economic activities such as farming and various waste disposal outfalls; can contribute to education awareness on conservation management issues.
Department of Forestry and Wildlife	This CA within the MLFFE is directly responsible for conservation and management of forested landscapes with their BD and ecosystems functions, notably the water source; can contribute to education and awareness on conservation and management issues.
Land Use Division	This CA within the MLFFE is responsible for monitoring and measurement of land and water resources and maintaining a database on the status and trends regarding Grenada's ecosystems.
Agriculture Extension Division	This agency of the MLFFE serves as a liaison with farmers (crop and livestock) for the purpose of administering government support and for rendering technical advisory services with respect to sustainable agricultural technologies and practices.
Agronomy and Veterinary Division	This agency within MLFFE is responsible for providing specific support with respect to farming options such as cropping practices and preventative measures so that farmers might yield optimum benefits from their investments.
Ministry of Physical Development	This CA is responsible for controlling the exploration of aggregates from landscapes and seascapes. Its Physical Planning Development Control Authority (PPDCA) is responsible for ensuring sound SOP/P for land and building construction and development. In a policy environment where there is a virtual urban and rural land development regime, a sustainable land management policy might have to be negotiated through the initiatives of the project.
Marketing and National Importing Board (MNIB)	The MNIB is a para-statal/Statutory agency of government mandated to facilitate marketing of farmers' production and for enhancing value-added for farm products.
Non-Governmental Organizations (NGOs): <ul style="list-style-type: none"> - ART. (G)PIA. SPECTO. GRENCODA. 	The registered NGOs are private, non-profit institutions set up for the purpose of delivering technical assistance and facilitating services with the goal of empowering individuals and communities, especially the economically vulnerable; the role of these organizations will be to provide technical assistance and resources to CBOs and local area communities, acting as agents of the project or co-financing bodies that would provide financial resources as support. These agencies have accumulated knowledge, know-how and experience over the years.
Community Based Organizations: <ul style="list-style-type: none"> - North-East Farmers Org; South-West Development organization. - National Farmers and Fisheries organization. 	Local area vested interest groups such as N/W Farmers' Organization; N/E Farmers' Organization; southern Fishermen's Organization INC., Grenada Federation of Agriculture and Fisheries organizations, Grenada Chamber of Industry and Commerce together with Commodity boards will all play a role in the project's interventions. CBOs will be recipients and/or donors of assistance.

Department of the Environment, now part of the Ministry of Agriculture	Agency within the MLFFE that contributes to the suite of “Ridge-to-Reef” initiatives both within the overall island landscapes /seascapes and within the targeted Beausejour watershed (Pilot area), as well as to the enhanced management and conservation of the BD and ecosystems functions throughout Grenada; and with a focus on land/sea impacts.
Ministry of Tourism	Since parts of PAs are used as National Parks and as tourism sites, such Parks are now managed by the Ministry of Tourism as tourism attractions. The Ministry of Tourism has a responsibility for contributing to the process of expansion of the network of PAs and for facilitating the institutionalization of such Parks within the PA network.
Allied Agencies: Coast Guard, Grenada Board of Tourism, Grenada Ports Authority, Environmental Health Division, National Water and Sewerage Authority (NAWASA)	Such agencies serve as the Competent Authority or as facilitators of their Ministry’s mandates, and as such will have roles and functions for security, safety, licensing of crafts, quality control of water, and quality control of products derived from BD and ecosystems functions. NAWASA, in particular, will collaborate with various CAs for the purpose of ensuring that the water source is adequately protected from threats that would compromise potable water quality.
Educational Institutions and Centers of Excellence	The local St. Georges University (SGU) and regional institutions, such as University of the West Indies (UWI) and Caribbean Environmental Health Institutes (CEHI), have considerable experience in application of monitoring, measurement, evaluation and response (MMER) initiatives with respect to landscape/seascape impacts due to their collaborations with various regional and international agencies.
Special collaborative initiatives between the Grenada Chamber of Industry and Commerce (GCIC) and Government of Grenada (GOG)	Collaborative initiatives established as responses toward CC adaptation: <ol style="list-style-type: none"> 1. GCIC/ GOG collaboration for the “outing” of GHG as refrigerants. 2. GCIC/ GOG collaboration for promotion of non-Fossil energy consumption (Solar panel use) through pre-incentives to persons requesting loans and buying equipment

Government stakeholder involvement will be driven by institutional roles and responsibilities, as well as the support of baseline, recurrent enabling services. Meanwhile, non-governmental stakeholders will be engaged through mechanisms that are collaborative in nature. Furthermore, the co-management model, although as yet incipient within Grenada, could offer an opportunity for lessons learned. Indeed, implementation of the Ridge-to-Reef project offers a significant co-management challenge and as such, the following has been taken under consideration:

- a) The Project offers opportunities for joint action in order to facilitate the Government’s inter-sectoral co-management interventions, not merely at the Steering Committee level, but also at operational levels. Specific financial budgets will be creatively administered in collaboration with relevant Government Competent Authorities and thus present a powerful instrument for catalyzing collaboration between and among agencies: CAs, CBOs/CSOs and NGOs.
- b) The Project specifies roles, responsibilities, and obligations of specific stakeholders, including beneficiaries and recipients; and specifies the resources (financial and other) allocated to and/or for each category of stakeholder. These will be reviewed and confirmed during the Project’s Inception Workshop.
- c) A specific co-management “Tracking Tool” (TT) will be developed and applied throughout the project lifetime for recording and evaluating the co-management process, as well as identify best management practices for replication. This TT will be community-based and tailor-made to be applied on a short term basis, and will complement the longer-term GEF Focal Area Tracking Tools already applied during the PPG and expected at Mid-term and end of project.
- d) The Project places emphasis on the importance of education and awareness of both Competent Authorities and NGOs/CBOs in joint informal interactive sessions with the objective of clarifying ideas such as *Sustainable utilization/development, BD conservation and management, ecosystem*

functions & services, Eco-assets, Green Economy, Livelihoods. Given the novelty of some of these concepts, these education/awareness sessions are expected to ensure the stakeholders share the same understanding not only of the concepts but of their application in their respective interventions.

Participation of local stakeholders will be ensured through a series of workshops, consultations and other local participation forums, carried out in close coordination with PA directors and relevant Competent Authorities. As an overall work strategy for the project, the cost-effective management activities generated during the PPG phase for the specific existing and future PAs of the Project, will be validated and expanded upon, identifying specific communities to partner with, where appropriate. Likewise, the strategies to be followed for the execution of the project and the roles of each of the stakeholders in the process will be validated and expanded upon during the Project Inception Workshop.

B.2: Describe the socioeconomic benefits to be delivered by the Project at the national and local levels, including consideration of gender dimensions, and how these will support the achievement of global environment benefits (GEF Trust Fund/NPIF) or adaption benefits (LDCF/SCCF):

The Project will result in various immediate socio-economic benefits for local communities. Prevention of habitat destruction (such as coral reefs and mangroves) will be crucial for ecosystem-based adaptive strategies that reduce vulnerability of human coastal communities to intense storms and other natural disasters. Halting the decline of terrestrial, coastal and marine ecosystems will secure and generate economic revenue, food security and improve livelihoods. Land degradation abatement and sustainable forest management and protection of biodiversity resources will serve to maintain agricultural and forest product-related livelihoods. Local communities and women groups will be involved in the designing and implementation of national interventions to ensure their equitability and sustainability. The project will contribute to direct socio-economic benefits derived from:

- Co-management approaches in PAs where communities will work in close collaboration with PA authorities to manage and monitor conservation within the PA sites while also developing and implementing alternative livelihoods activities.
- Improved ability to sustainably exploit near-shore coastal biodiversity resources as a function of improved coastal water quality, thereby maintaining important fish stocks and creating savings in costs of operations;
- Maintenance of present opportunities and expanded opportunities for eco-tourism recreational use of coastal waters and forested landscapes;
- Improved productivity of agro-ecosystems through enhanced land conservation measures with opportunities to diversify into alternative food and non-food crop commodities;
- Improved access to water in rural communities via the restoration and protection of the Beausejour watershed;
- General contributions to overall food security associated with enhanced land and water resources management and ameliorated landscapes, particularly as related to operation and maintenance good agricultural practices;
- Greater investment opportunities for micro-scale enterprises associated with exploitation of non-timber forest products

Female-headed households account for more than 36% of Grenada's poor and indigent population, and many of these women bear an enormous burden in finding creative ways of sustaining their families. Gender and social issues will be fully considered throughout implementation, particularly since gender accountability has been identified as a cross-cutting issue at both the project and outcome levels that will be tracked as part of the M&E system through socioeconomic indicators, and with special attention in the capacity-building activities.

B.3: Explain how cost-effectiveness is reflected in the project design:

The Project promotes a strategy to control forest loss on productive landscapes by piloting SFM/REDD+ and SLM initiatives and BD conservation activities that will increase ecosystems connectivity on both the Grenada landscape in general and pilot area, Beausejour, in particular. This, in turn, will be supported by a strengthened regulatory and institutional framework. This two-pronged approach is deemed to be far more cost-effective in the short and long-term than the alternative approach in which disparate and uncoordinated efforts limited by insufficient availability of planning, management and monitoring tools and weak institutional capacities prevail. The capacities of national and local community stakeholders will be strengthened for the application of conservation tools within a framework of effective institutional coordination backed by inter-institutional collaboration, co-management mechanisms and improved institutional capacities. The GEF alternative will thus provide for the removal of barriers that currently prevent Grenada from practicing effective land, coastal and forest management and BD conservation strategies in order to secure the flow of multiple ecosystems services.

By improving the quality of baseline information on ecological conditions, the project will help PA managers to improve the quality and cost-effectiveness of their management decisions. The project also will support cost-effectiveness by jointly implementing ecological baseline studies and conservation programs for TPAs and MPAs by both the Division of Forestry and the Division of Fisheries, thereby avoiding any duplication of effort and promoting the sharing of equipment, materials and other resources. Project capacity building of PA management staff will ensure that the productivity and effectiveness of the human resources available to support each PA site is enhanced and optimally organized. Overall, the concurrent establishment and operationalization of additional TPA and MPA units will produce significant benefits in terms of the sharing of resources and expertise among the different sites.

Cost-effectiveness will be promoted by working with and through existing CBOs/NGOs that already have established organizational and logistical capacities in the intervention sites. Furthermore, through forest initiatives administrated by FDNP, the country has developed a legal and operational framework that directly benefits the local communities that promote reforestation, natural regeneration, agroforestry, and forest management for production and conservation. The Project will promote investments as part of the strategy designed for the pilot project so that these incentives are effectively used in areas with the highest threat of deforestation or in areas with high rates of C sequestration to maximize their impact, while reducing costs by using well-established operational procedures. The project will promote SFM/REDD+, SLM and BD conservation and CC adaptation means through community-based incentives for Carbon sequestration, especially through the pilot project initiative. The project will also promote the application of principles, methodologies and priorities anticipated through the R-PP and its subsequent National REDD+ Strategy, so as to enhance the baseline and avoid duplication of efforts, thereby optimizing the use of limited available resources.

Through increased management capacity and implementation of SLM and SFM practices, the project will help avoid deforestation in approximately 337 has., thereby avoiding losses that would have occurred under the alternative scenario that lacks effective mechanisms to reduce deforestation. Similarly, the alternative scenario to reduce LD and prevent desertification does not consider effective planning for SFM and SLM in the short term. The GEF alternative, through the development of SFM/SLM plans, will allow for the incorporation of SFM/SLM principles in one watershed and up to 13 TPA management plans, thereby reducing pressure on forest and marine ecosystems and generating sustainable flow of dry forest ecosystem services, including enhancement of C stocks, improved soils and hydrological capacity, increased productivity and the livelihoods of the rural and urban communities in the region, and quality habitat for BD.

C. Describe the budgeted M & E Plan:

The project will be monitored through the following M& E activities. The M& E budget is provided in the table below.

Project start: A Project Inception Workshop will be held within the first 2 months of project start with those with assigned roles in the project organization structure, UNDP Sub-Regional Office and where appropriate/feasible regional technical policy and program advisors, as well as other stakeholders. The

Inception Workshop is crucial to building ownership for the project results and to plan the first year annual work plan.

The Inception Workshop will address a number of key issues including: (a) Assist all partners to fully understand and take ownership of the project. (b) Detail the roles, support services and complementary responsibilities of the UNDP Sub-Regional Office and RSC staff vis à vis the project team. (c) Discuss the roles, functions, and responsibilities within the project's decision-making structures, including reporting and communication lines, and conflict resolution mechanisms. (d) The Terms of Reference (TOR) for project staff will be discussed again, as needed. (e) Based on the project results framework and the relevant GEF Tracking Tools, finalize the first annual work plan. Review and agree on the indicators, targets and their means of verification, and recheck assumptions and risks. (f) Provide a detailed overview of reporting, M&E requirements. The M&E work plan and budget should be agreed and scheduled. (g) Discuss financial reporting procedures and obligations, and arrangements for annual audit. (h) Plan and schedule Project Steering Committee (PSC) meetings. Roles and responsibilities of all project organization structures should be clarified and meetings planned. The first PSC meeting should be held within the first 2 months following the 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.

Project Implementation Workplan: Immediately following the Inception Workshop, the project will be tasked with generating a strategic workplan. The workplan will outline the general timeframe for completion of key project outputs and achievement of outcomes. The workplan will map and help guide project activity from inception to completion. To ensure smooth transition between project design and inception, the inception workshop and work planning process will benefit from the input of parties responsible for the design of the original project, including relevant technical advisors, as appropriate.

Quarterly: Progress made shall be monitored in the UNDP Enhanced Results Based Management Platform. Based on the initial risk analysis submitted, the risk log shall be regularly updated in ATLAS. Risks become critical when the impact and probability are high. Based on the information recorded in Atlas, a Project Progress Report (PPR) can be generated in the Executive Snapshot. Other ATLAS logs can be used to monitor issues, lessons learned etc. The use of these functions is a key indicator in the UNDP Executive Balanced Scorecard.

Annually (Annual Project Review/Project Implementation Reports (APR/PIR)): This key report is prepared to monitor progress made since project start and in particular for the previous reporting period (30 June to 1 July). The APR/PIR combines both UNDP and GEF reporting requirements.

The APR/PIR includes, but is not limited to, reporting on the following: (a) Progress made toward project objective and project outcomes - each with indicators, baseline data and end-of-project targets (cumulative); (b) Project outputs delivered per project outcome (annual); (c) Lesson learned/good practice; (d) AWP and other expenditure reports; (e) Risk and adaptive management; (f) ATLAS QPR; (g) Portfolio level indicators (i.e. GEF focal area tracking tools) are used by most focal areas on an annual basis as well.

Periodic Monitoring through site visits: UNDP Sub-Regional Office and the RSC will conduct visits to project sites based on the agreed schedule in the project's Inception Report/Annual Work Plan to assess first hand project progress. Other members of the PSC may also join these visits. A Field Visit Report/BTOR will be prepared by the UNDP Sub-Regional Office and UNDP RSC and will be circulated no more than one month after the visit to the project team and PSC members.

Mid-term of project cycle: The project will undergo an independent Mid-Term Review during mid-point of project implementation (project months 28 – 29). The Mid-Term Review 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 project's term. The organization and terms of reference of the

mid-term review will be decided after consultation between the parties to the project document. The TOR for this Mid-term review will be prepared by the UNDP Sub-Regional Office based on guidance from the RSC and UNDP-GEF. This independent expert will be recruited at least six months prior to the planned commencement of the mid-term review. The management response and the review will be uploaded to UNDP corporate systems, in particular the [UNDP Evaluation Office Evaluation Resource Center \(ERC\)](#). The relevant GEF Focal Area Tracking Tools will also be completed during the mid-term review cycle.

End of Project: An independent Final Evaluation will take place three months prior to the final PSC meeting and will be undertaken in accordance with UNDP and GEF guidance. The final evaluation will focus on the delivery of the project's results as initially planned (and as corrected after the mid-term review, 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 TOR for this evaluation will be prepared by the UNDP Sub-Regional Office based on guidance from the RSC and UNDP-GEF.

The Final Evaluation should also provide recommendations for follow-up activities and requires a management response which should be uploaded to PIMS and to the [UNDP Evaluation Office Evaluation Resource Center \(ERC\)](#). The relevant GEF Focal Area Tracking Tools will also be completed during the final evaluation.

During the last three months, the project team will prepare the 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 project's results.

Learning and knowledge sharing: Results from the project will be disseminated within and beyond the project intervention zone through existing information sharing networks and forums. The 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 through 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 project and other projects of a similar focus.

Communications and Visibility Requirements

The project will comply with UNDP's Branding Guidelines, which can be accessed at:

<http://intra.undp.org/coa/branding.shtml>.

Specific guidelines on UNDP logo use can be accessed at: <http://intra.undp.org/branding/useOfLogo.html>. Amongst other requirements, these guidelines describe when and how the UNDP and the logos of donors to UNDP projects are used. For the avoidance of any doubt, when logo use is required, the UNDP logo needs to be used alongside the GEF logo. The [GEF logo](#) can be accessed at: http://www.thegef.org/gef/GEF_logo

Full compliance will also be observed with the GEF's Communication and Visibility Guidelines (the "GEF Guidelines"), which can be accessed at:

http://www.thegef.org/gef/sites/thegef.org/files/documents/C.40.08_Branding_the_GEF%20final_0.pdf.

These guidelines describe when and how the GEF logo needs to be used in project publications, vehicles, supplies and other project equipment. These Guidelines also describe other GEF promotional requirements regarding press releases, press conferences, press visits, visits by Government officials, productions and other promotional items. Where other agencies and project partners have provided support through co-financing, their branding policies and requirements will be similarly applied.

Audit Clause

The project will be audited in accordance with the UNDP Financial Regulations and Rules and applicable audit policies.

M&E Workplan and Budget

Type of M&E activity	Responsible Parties	Budget US\$ <i>Excluding project team staff time</i>	Time frame
Inception Workshop	<ul style="list-style-type: none"> Project Coordinator UNDP Sub-Regional Office UNDP GEF 	<ul style="list-style-type: none"> Indicative cost: 10,000 	Within first two months of project start-up
Inception Report	<ul style="list-style-type: none"> Project Team UNDP Sub-Regional Office 	<ul style="list-style-type: none"> None 	Immediately following IW (within 2 months after IW)
Measurement of Means of Verification of project results	<ul style="list-style-type: none"> Project Coordinator (with support/advice from UNDP/GEF RTA) will oversee the hiring of specific studies and institutions, and delegate responsibilities to relevant team members 	<ul style="list-style-type: none"> To be determined during the initial phase of implementation of the project and the IW 	Start, mid-point, and end of project
Measurement of Means of Verification for Project Progress on <i>output and implementation</i>	<ul style="list-style-type: none"> Oversight by Project Coordinator Project team 	<ul style="list-style-type: none"> None 	Annually prior to ARR/PIR and to the definition of annual work plans
ARR/PIR	<ul style="list-style-type: none"> Project Coordinator and Team UNDP Sub-Regional Office UNDP GEF 	<ul style="list-style-type: none"> None 	Annually
Periodic status/ progress reports	<ul style="list-style-type: none"> Project Coordinator and Team 	<ul style="list-style-type: none"> None 	Quarterly
Tripartite Committee Reviews and Reports	<ul style="list-style-type: none"> GoG counterparts UNDP/GEF 	<ul style="list-style-type: none"> None 	Annually, upon receipt of APR/PIR
Steering Committee/Board Meetings	<ul style="list-style-type: none"> Project Coordinator UNCP-Sub-Regional Office GoG representatives 	<ul style="list-style-type: none"> 2,500 (GEF) 3,000 (CoF) 	Following IW, and subsequently at least twice per year
Mid-term Review, including update of METT and ESSP	<ul style="list-style-type: none"> Project Coordinator and Team UNDP-Sub-Regional Office UNDP/GEF RCU External Consultants (evaluation team) 	<ul style="list-style-type: none"> Indicative cost: 40,000 	At the mid-point of project implementation.
Final Evaluation, including final METT and ESSP	<ul style="list-style-type: none"> Project Coordinator and Team UNDP-Sub-Regional Office UNDP/GEF RCU External Consultants (evaluation team) 	<ul style="list-style-type: none"> Indicative cost : 40,000 	At least three months before the end of project implementation
Project Terminal Report	<ul style="list-style-type: none"> Project Team UNDP-Sub-Regional Office 	<ul style="list-style-type: none"> None 	At least three months before the end of the project
Lessons learned	<ul style="list-style-type: none"> Project Coordinator and Team 	<ul style="list-style-type: none"> 5,000 (GEF) 4,000 (CoF) 	Yearly

Type of M&E activity	Responsible Parties	Budget US\$ <i>Excluding project team staff time</i>	Time frame
	<ul style="list-style-type: none"> UNDP-GEF RCU (suggested formats for documenting best practices, etc.) 	<ul style="list-style-type: none"> Indicative Cost Cost:US\$9,000 	
Audit	<ul style="list-style-type: none"> UNDP-Sub-Regional Office Project Coordinator and Team Auditors 	<ul style="list-style-type: none"> 15,000 (indicative cost per year: 3,000) 	Annually
Visits to field sites	<ul style="list-style-type: none"> UNDP CO UNDP RSC (as appropriate) Government representatives 	<ul style="list-style-type: none"> For GEF supported projects, paid from IA fees and operational budget 	Annually
TOTAL indicative COST Excluding project team staff time and UNDP staff and travel expenses		US\$ 150,000 (+/- 5% of total budget)	


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

A. Record of endorsement of GEF operational focal point on behalf of the Government(s)

Name	Position	Ministry	Date (mm/dd/yy)
Roland Bhola	Minister	Agriculture, Lands Forestry, Fisheries and Environment	

B. GEF Agenc(ies) Certification

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

Agency coordinator agency name	Signature	Date mm/dd/yy	Project Contact Person	Telephone	Email Address
Adriana Dinu, UNDP-GEF Executive Coordinator and Director a.i.			Lyes Ferroukhi, Regional Technical Adviser, EBD	+507 302-4576	lyes.ferroukhi@undp.org

ANNEX A: PROJECT RESULTS FRAMEWORK

Part V (I) - PROJECT RESULTS FRAMEWORK:					
The Project Will Contribute to Achieving Country Programme Outcomes in the CPAP or CPD: protecting biodiversity and ecosystems functions in and around protected areas.					
Country Programme Outcome Indicators: strengthened national capacities for protected areas management so as to conserve and manage the biodiversity and ecosystems functions.					
Primary Applicable Key Environmental and Sustainable Development Result Area: Mainstreaming protected areas management, viability of protected areas system and application of management effectiveness tracking tools in the context of global benefits.					
Applicable GEF Strategic Objective and Programs: SOI-Improve Sustainability of Protected Areas Systems.					
Applicable GEF Expected Outcomes: Outcome 1.1 – Improved Management effectiveness of existing and new protected areas (BD-1); Outcome 3.2- Integrated Landscape management practices adopted by 6 local area communities (LD-3); Outcome 1.3 – Good management practices adopted by relevant economic factors (vested interests) (SFM/REDD-1)					
Applicable GEF Outcome Indicators: indicator 1.1 5 new PAs and coverage of 12,400ha. of unprotected ecosystems (BD-1); 3.2 INRM tools and methodologies tested (LD-3); 3.4 Information on INRM technologies and food practice guidelines disseminated (LD-3), 1.3 types and quantity of services generated through SFM (SFM/REDD-1) all scored as recorded by management effectiveness tracking tool (METT).					
Project Objective	Indicator	Baseline	Target	Means of Verification	Risks and Assumptions
To ensure that biodiversity (BD) and ecosystems functions within and around Marine Protected Areas (MPAs) and Terrestrial Protected Areas (TPAs) in Grenada are better protected from threats through the adoption of an integrated “Ridge to Reef” approach that increases Protected Area (PA) management	PA management in Grenada is mainstreamed	- TPAs managed by Forestry Division and MPAs managed under the Fisheries Division with varying degrees of recognition and planning & management tools.	- TPA and MPA planning & management instruments and guidelines formally incorporated into the Government’s Administration	PA planning and management instruments and guidelines. M/E records kept by the Project management unit	<u>Assumptions:</u> Institutional stability and commitment of GoG throughout project implementation. Consensus among stakeholders for PA expansion and connectivity. National/International conditions remain stable. Willingness of government to commit funding and
	Financial sustainability to increase viability and resilience of the PA system in Grenada	- Insufficient financial resources for basic functions in the Forestry and Tourism Divisions as reflected by Financial Scorecard: 70 = 32%	- Budgetary restructuring to foster strategic collaboration between fisheries, forestry and tourism to increase (double) budgetary allocations to 8 PAs as eco-sites, as reflected by increase in Financial	Forestry, fisheries tourism and program recurrent and capital budgets. METT Financial Scorecard applied at PPG, MTR, and TE	

effectiveness and applies targeted sustainable land management practices.		- No formal coordination mechanism for investments in maintenance of the PA system.	Scorecard: 90 = 42% - Inter-sectoral coordination committee established to oversee investments in PAs	M/E Records	resources to make the PAs system viable and resilient.
	Average METT scores of 6 existing TPAs and 3 MPAs	53	62	METT Scorecard applied at PPG, MTR, and TE	Risks: Extreme weather, fires, pests and invasive species are beyond predicted levels.
	Improved capacity for planning, implementation and monitoring of site-specific co-managed strategies for threat reduction through SLM and SFM in PAs.	<p>Avg score on Capacity Development Scorecard²:</p> <p>Q 2: 2 Q10: 1 Q 11: 1 Q 13: 2 Q 14: 0</p> <p><u>Areas to be improved:</u> Co-management is identified as the governance model for SLM, SFM and TPA management, but no formal mechanisms are instituted.</p> <p>Outdated laws, low public knowledge of the various legislation, and inadequate regulatory framework constrain enforcement.</p> <p>Environmental information used to support decision-making processes is unavailable, under-utilized, incomplete or out-of-date.</p>	<p>Avg score on Cap Dev SC increases by at least 1 point: Q 2: 3 Q10: 2 Q 11: 2 Q 13: 3 Q 14: 1</p> <p><u>Specific improvements:</u> Develop and implement co-management mechanisms for SFM, SLM and TPA management (Outcome 1).</p> <p>Review and update existing policies and legislation; implement site specific mgt plans for PAs; endorse an interagency collaboration mechanism for SLM. (Outcomes 1 & 2)</p> <p>Develop and implement a protocol that facilitates information updating, access and sharing for decision-making</p>	GEF Capacity Development Scorecard applied at PPG, MTR and TE	

² Q2 = Existence of operational co-management mechanisms.

Q10 = Existence of an adequate environmental policy and regulatory frameworks

Q11= Adequacy of the environmental information available for decision-making.

Q13= Availability of required technical skills and technology transfer.

Q14= Adequacy of the project/programme monitoring process.

		Capacity and technological needs are, when available, obtained through external financing.	(Outcomes 1 & 2). Develop a capacity development strategy to augment technical skills within the resident organizations per the priorities of the NAP.		
		Monitoring is done irregularly, with or without an adequate monitoring framework.	National monitoring system with proper capacity building (Outcome 1).		

Outcome #1	Indicator	Baseline	Target	Means of Verification	Risks and Assumptions
1. Establishment and effective management of new and existing Protected Areas	Institutional framework for management effectiveness in and around PAs	<ul style="list-style-type: none"> - No formal National Parks Advisory Council; Forestry Division administers 8 TPAs under suboptimal conditions; Fisheries Division administers 3 MPAs. 	<ul style="list-style-type: none"> - Formal establishment of a National Parks Advisory Council for TPAs and Management Committee for MPAs administering policy-based PAs, PoA. 	<ul style="list-style-type: none"> - SROs Published in the Government Gazette so as to enable the TPA and MPA Strategic Management bodies to function. 	<p><u>Assumptions:</u> Government of Grenada adopts the Ridge to Reef Project as a key initiative for fulfilling its obligations for conservation and management of its BD so as to meet local and Global objectives.</p> <p><u>Risks:</u> Contingency-based planning and management persists.</p>
	Regulatory and legal framework for management effectiveness in and around PAs	<ul style="list-style-type: none"> - Forestry policy does not include INRM. - Outdated MPA Act - Fisheries division does not use INRM in its administration of MPAs. - No PA System Business Plan exists 	<ul style="list-style-type: none"> - A finalized and approved <i>Protected Area Forestry and Wildlife Bill</i> with draft SROs that promote INRM. - MPA Act adapted to promote community-based INRM - Fisheries division applying INRM principles and practices using enhanced law and/ or regulations, within 2 years. - PA System Business Plan developed and under implementation 	New parent legislation published in the Government gazette and with associated SROs.	

Outcome #1	Indicator	Baseline	Target	Means of Verification	Risks and Assumptions
	Expansion of protected areas system	3,711 ha of bio-diverse landscapes/seascapes formally recognized and facing multiple threats: <ul style="list-style-type: none"> - 8 TPAs managed under suboptimal conditions and 5 mini TPAs with no management mechanism. <ul style="list-style-type: none"> o TPAs cover 1,931 ha. - 3 MPAs management suboptimal conditions <ul style="list-style-type: none"> o MPAs cover 1,780 ha. 	16, 111 ha of bio-diverse landscapes/seascapes formally recognized and managed effectively: <ul style="list-style-type: none"> - 9 TPAs + 4 mini-TPAs effectively managed with legal demarcation, management plans, business plans, and adequate infrastructure in place. <ul style="list-style-type: none"> o TPAs cover 2,931 ha. - 7 MPAs managed under optimal conditions within 5 years. <ul style="list-style-type: none"> o MPAs cover 13,180 ha. 	Project records: <ul style="list-style-type: none"> - Technical reports - GIS maps - Project evaluation reports - Planning and policy documents - Tracking Tools - Field assessment 	<u>Assumptions:</u> Increased support from GoG. Effective management measures adopted. <u>Risks</u> Unpredicted natural hazards
	Measurable Threat Reduction: <ul style="list-style-type: none"> - Forest cover - Direct Carbon benefits - Indirect Carbon benefits - Mangrove, seagrass bed and coral reef areas 	<ul style="list-style-type: none"> - Continuous deforestation threatens 10,012 hectares - 81,652.5 tC (Direct) - 322,158.3 tC (Indirect) - Continuous destruction of 231 Ha of mangrove, 1301 Ha of seagrass and 5095 Ha of reef areas 	<ul style="list-style-type: none"> - 10,012 hectares of forested area maintained or increased - 81,652.5 tC Direct maintained or increased - 322,158.3 tC Indirect maintained or increased - 231 Ha of mangrove, 1301 Ha of seagrass and 5095 Ha of reef areas maintained or increased 	<ul style="list-style-type: none"> - Tracking Tools applied at PPG, MTR, and TE - Technical reports - GIS maps - Satellite imagery - Field assessments 	<u>Risks</u> Unpredicted natural hazards <u>Assumptions</u> Consensus and interest among local stakeholders. Collaboration with Academia and Centres of excellence in data procurement and application of SLM/SFM practices

Outcome #1	Indicator	Baseline	Target	Means of Verification	Risks and Assumptions
	Management of expanded PA network institutionalized	<ul style="list-style-type: none"> - No coral Reef resilience program (protocol) in place. - No systematic SFM program in place - No staff trained in planning accounting, bio principal monitoring, enforcement, fire management and co-management 	<ul style="list-style-type: none"> - Coral reef resilience program (protocol) in place within 5 years. - SFM program adopted and administered in all PAs within 5 yrs. - 13 PA Staff trained 	<ul style="list-style-type: none"> - MMER protocol designed adopted and administered - CCM measures adopted and recorded - Records of staff training - Training Docs. - Capacity development Scorecard 	
	PA network infrastructure and services	<ul style="list-style-type: none"> - Inconsistent infrastructure and facilities and services across TPAs and MPAs. 	<ul style="list-style-type: none"> - Standardized and quality infrastructure facilities and services available at all TPA and MPA units in the PA network. 	<ul style="list-style-type: none"> - Field inspections - Documentation and records 	Assumptions: Adequate investments: Entrepreneurs willing to assist and collaborate in the project.
	Community involvement in PA management through conservation and sustainable use of natural resources	<ul style="list-style-type: none"> - 0 communities adjacent to MPAs engaged in PA co-management - 0 communities adjacent to TPAs engaged on PA co-management 	<ul style="list-style-type: none"> - 3 communities adjacent to selected MPAs engaged in co-management - 3 communities adjacent to selected TPAs engaged in PA co-management 	<ul style="list-style-type: none"> - Planning and policy documents and records. - Project records - METT scorecard 	Assumptions: Community interest in engaging in PA management activities
	Benefits/profitability from conservation/sustainable-use resource-based livelihood opportunities	<ul style="list-style-type: none"> - No systematic collaboration for INRM linked to livelihood opportunities - Minimal benefits from resources based livelihoods 	<ul style="list-style-type: none"> - Incentive schemes to engage entrepreneurs in INRM practices linked to livelihoods - Measured increase in benefits from resource based livelihoods 	<ul style="list-style-type: none"> - Project records - METT scorecard 	
Outputs:					
1.1 <u>Institutional framework for PA System Management</u> that would develop and administer a policy-based strategic plan of action for an expanded PA network, one advisory body for TPAs while the other is for MPAs; with the aid of policy instruments.					

Outcome #1	Indicator	Baseline	Target	Means of Verification	Risks and Assumptions
1.2	A legal and regulatory framework established through the finalization and approval of the Bill for “Protected Area, Forestry and Wildlife” enhanced with SROs and operations management policy instruments that would the consolidate legal process to include private lands in the PA system. Accompanied by an adapted MPA Act as a response to community wide consultations with key stakeholders.				
1.3	Expanded PA system through the creation of a new TPA (1000 ha.), enhanced management of 8 sub-optimally managed TPAs, as well as low-cost improvements for 4 small-hectare TPAs; and the creation of 4 new MPAs (11,400 ha).				
1.4	Management of Protected Area Units Institutionalized as a TPA network and with a MPA network.				
1.5	Conservation and sustainable use of natural resources as a means for community involvement in PA co-management.				

Outcome #2	Indicator	Baseline	Target	Means of Verification	Risks and Assumptions
2. Climate resilient SLM practices applied in the Beausejour watershed to reduce threats adjacent to and upstream of PAs.	Planning and management framework for SLM/INRM	<ul style="list-style-type: none"> - No LUP regulations limiting agriculture and housing. - National Forestry Policy does not consider C sequestration. - No intersectoral body or committee in place for implementing a watershed management plan using INRM approaches. - Stakeholders not engaged in community-based rule-making with respect to applying INRM practices. - No systematic monitoring for water quality/quantity, sediment and pollution impacts 	<ul style="list-style-type: none"> - LUP regulations elaborated and implemented to limit agriculture and housing. - NFP updated to include C sequestration. - Intersectoral committee established within Year 1 - The intersectoral watershed committee engages stakeholders to formulate community-based rules for applying INRM practices within 2-3 yrs. - A water quality/quantity protocol set in place within Year 2. 	<ul style="list-style-type: none"> - Capacity development scorecard - Project records of engagements between and among stakeholders. - Minutes of intersectional committee meetings. - Water quality and quantity protocol - Updated National Forest Policy document. 	<p>Assumptions: Optimal community uptake of the watershed management plan of action.</p> <p>Practical evidence of accommodation of TEK, LK and ideals of local area, persons accommodated in watershed management plan.</p> <p>Collaboration is ongoing between and among competent authorities relevant to the exercise.</p>

Outcome #2	Indicator	Baseline	Target	Means of Verification	Risks and Assumptions
	Community participation in SFM.	<ul style="list-style-type: none"> - No involvement of local stakeholders in initiatives to review and update the National Forest Policy (NFP) to consider carbon sequestration. 	<ul style="list-style-type: none"> - Community engaged in updating of NFP; and SROs promulgated by Year 3. 	<ul style="list-style-type: none"> - Project records of engagements between and among stakeholders. - Updated NFP and related SROs 	
	Direct carbon benefits through avoided deforestation; forest enrichment; and planting in the Beausejour watershed.	<ul style="list-style-type: none"> - 9,613tC sequestration by 3337.3 ha. of private forest - 4,320tC sequestration by 150ha increase in forest cover with removal of 40ha of bamboo - 0 tC from avoided deforestation and sustainable planting products 	<ul style="list-style-type: none"> - 9,613tC sequestration maintained in private forests - 4320tC sequestration maintained - At least 26066tC sequestration from avoided deforestation and sustainable planting products 	<ul style="list-style-type: none"> - Tracking Tools - Technical reports 	<p>Assumptions: Competent Authorities are consistent with M&E for multiple impacts.</p> <p>Risks: Failures in the M&E plan.</p>
	Turbidity Levels/ sediment buildup at two MPAs downstream of Beausejour	No turbidity index available; TBD within first 6 months of project	15% reduction in turbidity	<ul style="list-style-type: none"> - Turbidity and soil accumulation - Monitor and measurement protocol using UN FAO LADA tools. 	
	Pesticide and fertilizer levels at two MPAs downstream of Beausejour.	Grand Anse MPA: TBD within the first 6 months of project Moliniere/ Beausejour MPA: TBD within the first 6 months of project	Grand Anse MPA: 15% reduction Moliniere/ Beausejour MPA: 15% reduction	Water quality measurement using protocol for pesticide and fertilizer (Agro-chemicals) in seawater at MPAs	
	Application of gender and community-sensitive SLM and SFM practices in 6 communities (Beausejour, Happy	<p>No ongoing and systematic training:</p> <ul style="list-style-type: none"> - No agricultural production program implemented within the 	<p>6 villages trained in alternative livelihoods related to BD, SFM/SLM, and CC issues:</p> <ul style="list-style-type: none"> - A sustainable agricultural biodiversity program 	<ul style="list-style-type: none"> - Landscape management plans in place - Technical reports - Field verification 	<p>Assumptions: Optimal uptake by farmers and land owners.</p> <p>Innovative alternatives accepted to replace bamboo</p>

Outcome #2	Indicator	Baseline	Target	Means of Verification	Risks and Assumptions
	Hill, Granville Vale, New Hampshire, Annandale and Vendome)	watershed. - No rangeland management program implemented within the watershed. - No forest management program implemented within the watershed.	implemented by Year 3 - A sustainable rangeland management program implemented by Year 3 - SFM program involving forest enrichment with agro-forest species so as to ensure SLM/SFM practices applied by Year 3	notes - Tracking Tools - Capacity Development scorecard	as a tool to avoid land slippage. Due recognition of gender equity is emphasized within all delivery systems
	Impact of Soil erosion/stability on household incomes of famers within the Beausejour watershed	No existing estimates of soil loss or land soil accumulation levels available. TBD within first 6 months of project No statistics on farmer income available. Initial survey to establish baseline to be conducted during Year 1	15% reduction of soil loss 25% increase in weekly income per farmer.	Field inspections/ UNFAO-LADA tools: -sediment traps -Soil Accumulation measurements -Suspended sediments -Comparative household surveys of farming communities (RAS method)	Assumptions: No serious CC impacts Farmers uptake of initiatives to enhance profitability of their farms Risk: Lack of cooperation by farmers. Private profitability is not highlighted sufficiently.
	Education and awareness levels	- No education and awareness program	- Public awareness campaign developed and implemented	- Project records - Farmer/landowner engagement records - Tracking Tools	Assumptions: Emphasis on community-wide education and awareness. Due recognition of gender equity is emphasized within all delivery systems
Outputs: 2.1 <u>Strengthened planning and management framework, capacities and awareness for participatory sustainable resource management.</u> 2.2 <u>Improved SLM and SFM practices in 6 communities resulting in reduced deforestation and land and forest degradation in the landscapes surrounding PAs</u> involving: sustainable agricultural production initiatives to conserve and enrich soil and water management; enhanced capacity of farmers and farm organizations and to improve product quality and marketing; sustainable rangeland management initiative for community-based control of overgrazing that impacts on landscape and seascape quality; sustainable forest management initiative that uses agro-forests species to enrich and rehabilitate					

Outcome #2	Indicator	Baseline	Target	Means of Verification	Risks and Assumptions
deforested landscapes.					

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

Comments:	Response	Reference
<p>STAP: To further strengthen the proposal, STAP recommends addressing the following points during the proposal development:</p> <p>1. This ambitious project is well designed and the relationships between objectives, outcomes and outputs are clearly articulated. The viability of the project is conditional on how well linkages are made between the two executing partners (Agriculture and Environment ministries) and the land use types in the landscape/seascape (PA and MPA, small-farm agriculture, forest, spice production etc.). The description of how these linkages will be achieved both organizationally and practically during project implementation will need to be more strongly defined in the project document, ideally supported by maps illustrating the connections of the various activities at site and landscape/seascape scale.</p>	<p>The Agriculture and Environment Ministries have merged to form the new Ministry of Agriculture, Lands, Forestry, Fisheries and the Environment (MLFFE). As such, there is now only one Executing Partner.</p> <p>Within the MLFFE, the Divisions of Lands, Forestry, Fisheries, Land Use, and Extension (farm) Services will collaborate with the Division of the Environment, both organizationally and practically; collaboration is simplified due to a single executing Ministry, unlike when the PIF was prepared.</p> <p>Furthermore, the Ministry of Tourism is fully aware of its role in project execution due to its involvement in consultations during the project preparation process. Given the presence and potential of tourism sites within PAs, this Ministry has a strong vested interest in the value-added of an expanded PA system (TPAs, MPAs).</p> <p>Maps and tables are provided in the ProDoc and Annexes to illustrate intervention sites and landscape/seascape scale, which will, in turn, contribute toward Grenada's CBD goal to conserve 25% near shore marine area and 25% terrestrial area by 2020.</p>	<ul style="list-style-type: none"> • ProDoc, page 2 • The co-financing letter from the Ministry of Agriculture and Environment provided in Annex 9 details the commitments of each of the Divisions. • Maps and tables of the sites provided in Annexes 1 and 3.
<p>2. STAP would recommend that such multi-focal area PIFs include appropriate maps and more importantly, brief references to the key information sources on which recommendations are based. This is particularly pertinent to the baseline description, which although sound and comprehensive, could easily be strengthened by inclusion of key references. There have, for example, been some efforts by scientists in the Ministry of Agriculture to follow FAO's Land Capability Classification for Grenada, see Ternan, J.L. et al 1989. Land capability classification in Grenada. Mountain Research and Development 9(1). In the past, the Land Use Division in the MLFFE has used what is</p>	<p>The ProDoc and Annexes provide area maps and reference information, including ecological and social assessments for landscapes in general at the national level, for the pilot project landscapes, and for the areas within and adjacent to TPAs/MPAs. The references cited in the ProDoc come from the baseline studies provided in Annexes 1-4, each with a detailed set of references, including the sources recommended by STAP, and complemented by references in Annex 8.</p> <p>In addition to a review of research literature, the issue of historical and policy-driven</p>	<ul style="list-style-type: none"> • Maps and references are provided throughout the ProDoc and Annexes 1-4, 8. • The ProDoc articulates the issues of land fragmentation on the terrestrial areas and the issues of "open access/free entry" to marine

Comments:	Response	Reference
<p>known as the Grenada Land Information System (GLIS) to provide physical and economic suitability assessments of land holdings, which was then extended to forestry and watershed management, see Jackson et al 2004. Managing Watersheds for a Better Future. DFID Forestry Research Programme R7937 - . http://www.dfid.gov.uk/r4d/pdf/outputs/Forestry/R7937_Managing_watersheds_for_a_better_future.pdf . The research literature also has some analysis of the problems of land fragmentation for small-holder agriculture. These issues and more recent references would add credibility to the proposal and ensure that the project builds on a base of existing knowledge.</p>	<p>fragmentation of agricultural lands in the context of current land ownership was a recurring theme during stakeholder consultations, particularly as it relates to the extension of the PA network and implementation of SLM and SFM practices. These consultations also provided an opportunity to clarify stakeholder concerns regarding the risks related to INRM activities; they recognized the challenges associated with Project interventions and were involved in identifying potential remedies.</p>	<p>resources beginning on page 18, under “Threats to BD and Ecosystem Services”.</p>
<p>3. The description of threats to biodiversity and ecosystem services indicates the substantial challenges to achieving the project goals given the long history of land transformation on the island, and the pervasive impacts of invasive species, soil erosion and pollution of freshwater and marine systems. Responding to these threats might be most effectively implemented through project component 1, which is focused on systemic, site and capacity strengthening of the PA system following approaches that have a sound foundation in the GEF PA portfolio.</p>	<p>The institutional strengthening afforded through Component 1 is indeed crucial for systemic strengthening of the PA system. However, given the particularities surrounding small parcel land ownership, and the limited amount of Crown/government-controlled lands (approximately 15%), Grenada must consider alternative management and conservation mechanisms to reach its goal of conserving 25% of terrestrial areas and 25% of marine areas by 2020. The Ridge to Reef interventions to be piloted in Component 2 will provide the stakeholder buy-in necessary to enable Grenada to expand its PA network and effectively manage its natural resources. Furthermore, given the vulnerability of current PAs to encroachment and detrimental agricultural practices, a GEF intervention limited to only Component 1 would not address the threats adequately to ensure TPA and MPA stability. Thus this 2-pronged approach is deemed the most comprehensive and cost-effective way to ensure that BD and ecosystem functions within and around T/MPAs are better protected.</p>	<ul style="list-style-type: none"> • ProDoc Section 2.7 Cost-Effectiveness, paragraph 120
<p>4. Component 2, to develop climate resilient SLM practices in a pilot watershed, on six, rather small, watershed communities... might be strengthened by consideration of design approaches suggested in the STAP Advisory Document ‘Experimental Project Designs in the Global Environment Facility’ (Refer to the</p>	<p>The Project will take into consideration the design approaches suggested in the STAP Advisory Document ‘Experimental Project Designs in the Global Environment Facility’.</p>	

Comments:	Response	Reference
STAP website (www.stapgef.org)		
<p>5. STAP is pleased to see the intention of using the GEF-FAO-LADA tools to develop a national system for assessing and mapping land degradation, monitoring land degradation processes, and consolidating information systems and protocols. At national level, the LADA project used primarily the database provided by the World Overview of Conservation Approaches and Technologies (WOCAT). Because of the emphasis on SLM practices and technologies in Component 2, STAP suggests that a WOCAT-type database of practices be compiled in order to build a knowledge platform for up-scaling SLM practices in Grenada and perhaps elsewhere in the region.</p>	<p>The Land Use Division is considered a critical project partner, given its role in monitoring and measurement of land and water resources and maintaining a database on the status and trends regarding Grenada's ecosystems. However, much of the data needs archiving, some datasets need to be revised (e.g., coral reef areas, seagrass distribution), and others updated (e.g., land classifications). Baseline studies recommend that all staff with GIS responsibilities be provided with further training to facilitate data access, management, integration, analysis, standards and communication. As such, the Division has participated in numerous consultations regarding the project's preparation and has expressed a strong interest in building upon their earlier engagements with the FAO/GEF/LADA initiative. As capacity-building exercises get underway and the specific technical requirements of the monitoring system are defined, the Project will consider the recommendation to compile a WOCAT-type database and build a knowledge platform for up-scaling SLM practices in Grenada.</p>	<p>Annex 4, p. 63</p>
<p>6. The choice of species to be used in reforestation activities, which selects many exotic crop species, is no doubt pragmatic and most cost-effective. But it would be useful to include indigenous tree species more strongly in these activities, making use of some of the experience gained by projects such as those led by RBG Kew in habitat and species restoration, and by the global experience held by the Society for Ecological Restoration.</p>	<p>Stakeholder consultations, especially in the watershed, revealed that a key issue was that of coupling forest rehabilitation with opportunities for profitable livelihoods; and forest enrichment activities using species that farmers were familiar with and could expect to generate income. Central to the adoption of INRM principles and practices by farmers and land owners is the use of income-generating forest enrichment species. As such, the Project will work with community nurseries to find a balance between familiar exotic species that do not have a negative impact on soil chemistry, hydrology, biodiversity, while at the same time supporting the restoration and re-introduction of endemic species, such as those recommended by RBG Kew's experts.</p>	<ul style="list-style-type: none"> • ProDoc paragraphs 102, 127, 130.
<p>7. Paragraph 21 of the PIF promises description of the global environmental benefits of the project in the accompanying table. The third column of the table provides primarily domestic</p>	<p>This table has been included in the ProDoc and complemented by the Project Results Framework, which includes indicators that reflect the project's contributions to all three</p>	<ul style="list-style-type: none"> • ProDoc Section 2.10 Project Results and GEF Increment and

Comments:	Response	Reference
<p>and national benefits. These benefits need to be linked explicitly to the impact indicators of the GEF-5 focal area strategies relevant to the project (BD, LD, SFM). For example, changes in land cover would serve well as an indicator that assesses the project contribution to delivering benefits in all three of the focal areas. Opportunities in identifying cross-cutting impacts are being missed.</p>	<p>focal areas in a cross-cutting manner. For example, the expected contributions from forest rehabilitation, forest enrichment and/or avoided deforestation; changes in land/sea cover (forest, mangrove, coral reef); C sequestration.</p>	<p>Section II Project Results Framework (also Annex A of this CEO EndReq)</p>
<p>GERMANY: Germany suggests the following improvements to be made during the drafting of the final project document:</p> <ul style="list-style-type: none"> - In addition to the “Program on Integrated Adaptation Strategies” that is highlighted in the proposal and which is executed jointly by German International Cooperation (GIZ) and UNDP, Germany provides further support to Grenada through the implementation of the two regional projects “Improving the Management of Coastal Resources and the Conservation of the Marine Biodiversity in the Caribbean Region” and “Enhancing the Adaptive Capacity of Rural Economies and Natural Resources to Climate Change in selected Caribbean Small Island and Low Lying Coastal Developing States”. Within the efforts of donor coordination, Germany proposes that in the final project document reference is also made to these two regional projects. The implementing agency and the executing partners should actively seek contact in order to ensure synergies and complementarities and that concerned national and local authorities are consulted for improved coordination and cooperation. 	<p>The project is actively looking for synergistic opportunities for augmenting outputs/ outcomes assisted by regional or local concurrent projects. Project proponents are already involved in activities of the GIZ/CATS project (2013-2014) and will foster synergies and lessons learned between the two initiatives. The two regional projects are anticipated to contribute to planning exercises by the R2R project, particularly in Output 1.4. While initial discussions with these initiatives highlighted potential areas for synergies, further contact needs to be made between the UNDP and GIZ to solidify the interaction and collaboration between these initiatives.</p>	<ul style="list-style-type: none"> • Coordination with other projects is found under ProDoc 2.3 Design principles and Strategic considerations, p. 32-33, and Output 1.4 p.40
<ul style="list-style-type: none"> - The expansion of the PA system in the marine environment through 4 new MPAs may – in addition to the Ridge to Reef land use/management approach applied – require a broader spatial planning of current and future human activities in the near shore marine areas adjacent to the MPAs. This should be taken into account in the final project design and in the course of the project implementation. 	<p>Throughout project preparation, contact was made between the MPA authorities and the Physical Planning Authorities in order to underscore the importance of the need for consideration of the uses planned for the land-scapes in the land /sea interface versus the uses planned for the sea-scapes that form the MPAs. Annexes on ecological, social and financial conditions with respect to PA expansion, explain the challenges for viability. The critical need for collaboration</p>	<ul style="list-style-type: none"> • Barrier Analysis, p. 25.

Comments:	Response	Reference
	between physical planning Authority and MPA authority for MPA Development and management is discussed in several areas as both an issue of inter-sector collaboration and as a matter of management of contested uses.	
- In order to effectively integrate and mainstream biodiversity conservation into the land/sea use and development planning of the Beausejour Watershed, Germany recommends to consider the application of economic valuations of key ecosystem services. The activities under component 2 could benefit from integrating these economic valuations to enhance the reaching and effect of the envisaged project results.	To date, there has been no economic valuation of ecosystem services, such as water services, biodiversity, food production, and erosion control. During the local stakeholder engagements in the Beausejour watershed, it was recognized that this pilot area was a “contested use” area, with impacts on key ecosystem services such as water source/water sequestration; food production; forest and biodiversity, and; important landscapes to seascape outfall. As such, an economic valuation of these ecosystem services and the various contested uses that affect them is indeed considered a worthwhile tool for determining appropriate uses and practices. The project will look for opportunities within existing institutions, and/or synergies with other projects to define how this could be applied during project implementation.	<ul style="list-style-type: none"> ProDoc, paragraphs 27 46,79, 85.

ANNEX C: STATUS OF IMPLEMENTATION OF PROJECT PREPARATION ACTIVITIES AND THE USE OF FUNDS³

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

PPG Grand Approved at PIF: 100,000			
Project Preparation activities implemented	GEF/LDCF /SCCF/NPIF Amount (\$)		
	Budgeted Amount	Amount Spent To Date	Amount Committed
1. Analysis of Policy, Legal, Institutional and Financial Frameworks for Integrating BD and SLM approaches	34,000	31,270	2,730
2. Project Site profiling and detailed baseline information analysis	46,064	42,366	3,698
3. Definition of Project Strategy	19,936	18,335	1,601
Total Project Preparation Financing	100,000	91,971	8,029

³ If at CEO Endorsement, the PPG activities have not been completed and there is a balance of unspent fund, Agencies can continue to undertake the activities up to one year from project start. No later than one year from start of project implementation, Agencies should report this table to the GEF Secretariat on the completion of PPG activities and the amount spent for the activities.



United Nations Development Programme

Country: **GRENADA**

PROJECT DOCUMENT

Project Title:

Implementing a “Ridge to Reef” Approach to Protecting Biodiversity and Ecosystem functions within and around Protected Areas in Grenada

UNDAF Outcome(s):

Outcome 1 - Improved governance and regulation of environmental and energy issues for more resilient economies by 2016

UNDP Strategic Plan Environment and Sustainable Development Primary Outcome: 2.3. Solutions at local level for sustainable management of natural resources, ecosystems and environmental services, for expanded jobs and livelihoods; and 3.5. Transparent and non-discriminatory legal and regulatory frameworks and policies enabled for sustainable management of natural resources, biodiversity and ecosystems (in line with international conventions and national legislation)

UNDP Strategic Plan Secondary Outcome: From UNDP’s Biodiversity and Ecosystems Global Framework 2012-2020 Signature Programme #1 Promoting holistic valuation of biodiversity and ecosystem services to strengthen the case for government investments

Expected CP Outcome(s): Outcome #1: Enhanced capacity of national, sub-regional and regional institutions and stakeholders to: effectively manage natural resources; build resilience to the adverse impacts of climate change and natural and anthropogenic hazards; improved energy efficiency and use of renewable energy; improved policy, legal, regulatory and institutional frameworks for environmental and energy governance.

Expected CPAP Output (s) Output 4: Knowledge and good practices disseminated and capacity development in the areas of natural resource management, disaster risk reduction, climate change, renewable energy, energy efficiency, low carbon emissions, biosafety and adherence to international standards and norms

Executing Entity/Implementing Partner: Ministry of Agriculture, Lands, Forestry and Fisheries and the Environment.

Implementing Entity/Responsible Partners: United Nations Development Programme

Brief Description

The project will provide multiple global and local benefits by strengthening land, forest and reef management processes (eco-systems functions) and biodiversity conservation on all terrestrial landscapes and marine and seascapes in Grenada, especially within and around marine and terrestrial protected areas. This will be achieved through a multi-focal strategy having a “Ridge to Reef” approach that increases protected areas’ management effectiveness and applies targeted land management practices to include: (i) Development of a policy-based legal, planning and institutional /regulatory framework in support of a sustainably managed network of TPAs and MPAs; (ii) Development and management of landscapes and seascapes by adopting the approach of integrating SLM and SFM/REDD+ principles and practices as a matter of public policy (integrated approach for managing forest ecosystems, protection and sustainable use of the biodiversity, prevention of land/sea degradation, and integration of peoples livelihood objectives within the management of forest and marine eco-systems.); (iii) By piloting SFM/REDD+ and SLM practices in the Annandale/ Beausejour watershed to improve Carbon stocks, reducing deforestation, reducing susceptibility to drought (and forest fires) and consequent land degradation that would impact downstream landscapes and seascapes.

Programme Period: 2014 – 2019	Total Resources Required: US\$18,458,488
ATLAS Award ID:	Total Allocated Resources (Grant):US\$18,458,488
ATLAS Project ID:	GEF: US\$3,031,666
GEFSec Project ID: 5069	Ministry of the Environment: US\$6,130,525.
PIMS#: 5087	Ministry of Agriculture-Fisheries: US\$4,629,630.
	Ministry of Agriculture-Fisheries: US\$2,250,000.
Duration: 60 Months	Ministry of Tourism: US\$2,166,667.
Start Date: 2014 (June)	UNDP: US\$250,000
End Date: 2019	
Management Arrangement: NIM	
PAC Meeting Date:	

Agreed by (Government):

Date/Month/Year

Agreed by (Executing Entity/Implementing Partner):

Date/Month/Year

Agreed by (UNDP):

Date/Month/Year

Acronyms

APR	Annual Project Report
AR	Afforestation and Reforestation
AUD	Avoided Unplanned Deforestation
AWP	Annual Work Plan
BD	Biodiversity
BMPs	Best Management Practices
CBD	Convention on Biological Diversity
CC	Climate Change
CCM	Climate Change Mitigation
CSO	Civil Society Organization
CBO	Community-based Organization
EIA	Environmental Impact Assessment
FFEM	French Fund for the Environment
GEF	Global Environment Facility
GHG	Green House Gas
GIS	Geographical Information System
GRN	Government of Grenada
GPS	Global Positioning System
IPCC	Inter-Governmental Panel on Climate Change
IUCN	International Union for the Conservation of Nature
LD	Land Degradation
m.a.s.l.	Meters above sea-level
M&E	Monitor and Evaluation
LULUFC	Land Use, Land Use Change and Forestry
MoA	Ministry of Agriculture and the Environment
MCS	Monitor Control and Surveillance
MMER	Monitor Measurement Evaluation and Response
NGO	Non-Governmental Organization
PA	Protected Area
PC	Project Coordinator
PD	Project Description
PIF	Project Identification Form
FSP	Full Size Project
PIR	Project Implementation Review
PIU	Project Implementation Unit
PPG	Project Preparation Grant
PPP	Project Preparation Process
PSC	Project Steering Committee
RBLAC	UNDP Regional Bureau for Latin America and the Caribbean
RCU	Regional Coordination Unit
REDD+	Reduction of Emissions from Deforestation and Degradation of Forests
ROAR	Results Oriented Annual Report
SFM	Sustainable Forestry Management
SLM	Sustainable Land Management
SOP/P	Standard Operating Procedures and Practices
SRO	Statutory Rules and Orders
TOR	Terms of Reference
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Programme

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Annex 1. Additional Information on Biodiversity within the Project Area

Annex 2: Additional Information on Fisheries

Annex 3: Maps & Figures

Annex 4: Information on PAs within the Project Area

Annex 5: Stakeholder Participation Plan for Implementation

Annex 6: SWOT Risk Matrix for GEF Ridge to Reef Project Implementation

Annex 7: Terms of Reference for Key Project Staff

Annex 8: Bibliographical References

Annex 9: Co-financing Commitment Letters

Annex 10: Capacity Development Scorecard

Annex 11: Environmental and Social Screening Checklist (provided separately)

Annex 12: Tracking Tools Summary (full TT provided separately)

SECTION I: ELABORATION OF THE NARRATIVE

PART 1: SITUATION ANALYSIS

1. A: CONTEXT AND GLOBAL SIGNIFICANCE

1.A.1 Environmental Context

1. Grenada is the most southerly of a group of volcanic islands in the Eastern Caribbean called the Windward Islands. The Grenada state has a total land area of approximately 344 sq. km and consists of three populated islands forming an archipelago of: Grenada, Carriacou and Petite Martinique.

Figure 1. Map of Grenada



2. The main island of Grenada, about 310 sq. km., like the other Windward Islands to the north is very mountainous, covered with rich volcanic soils and drained by numerous small rivers and streams. This topography divides the island's landscapes into a set of micro-watersheds, each having the bigger or smaller impact in run-off on the near shore coastal zone and island shelf. The island is therefore drained from 'ridge to reef' since the pattern of drainage is one in which impacts would travel from upper landscapes through lower landscapes and into coastal seascapes. The only noteworthy cases of inland landscape drainage are three small volcanic lakes, the main one being the Grand Etang at an altitude of 600 m.a.s.l.

3. At 12°N Latitude, Grenada is highly impacted by the prevailing moisture-laden Northeast Trade Winds coming off the Western Central Atlantic Ocean. The average annual rainfall is about 1500mm with the greatest precipitation during the annual rainy season from May/June to December and with a distinct dry season from January/February to May. As a result of the high rates of precipitation, the biodiversity is considered as an island representation of that of the East Coast of Northern South America. The landscapes of Grenada, once heavily covered with forested species especially in upper altitudes are now being increasingly threatened by encroaching Agriculture, Housing and other Urban Developments. Special features of the Grenada landscapes and seascapes include: low lying landscapes, small out-islands and an island shelf to the north and south of mainland Grenada. These outer islands are considerably less mountainous than the central part of the main island and notable for their white sand beaches generated by coral reef derivatives. They are also noted for being relatively dry when compared with the mountainous areas of the main-island; the local area BD distinctly reflects the wetter or drier environments. The central core of volcanic Grenada's main island rises to an elevation of about 840m at the highest point. There are virtually no upper landscapes that are void of tropical vegetation or scarred by exposed rockslides.

4. The Grenada mainland (approximately 90.2% of the Grenada Territory) is mountainous with moderately wet landscape and with average annual rainfall of about 1500mm. The volcanic nature of the island, with its steep hillsides, creates numerous small watersheds that are drained by a number of year-round rivers and several ravine-type outfalls. Historically, forest coverage was in excess of 75% up to about 50 years ago and these forests occupied the middle and upper altitude while agriculture and housing occupied the middle to low-lying landscapes. Although Grenada's Agriculture was in large part based on tree crops, now in distinct decline, it is estimated that about 50% of Grenada's landscape is still covered in Forest. Historical data also shows that CO₂ emissions for Grenada are estimated at about 245,000 metric tonnes or 2.4 tonnes per capita.

5. Typical of small island volcanic landscape, Grenada forests and vegetation are characterized mostly based on altitude zones and are classified under the following types¹ (See Fig 2):

Cloud Forest (montane thicket, palm break and elfin woodlands) – Generally these forests, located in the inaccessible upper areas of Grand Etang and on Mt. St. Catherine, have suffered little degradation and appear to be under no serious threat from human land uses such as agriculture or urban developments;

Rain Forest and Lower Montane Rain Forest – These forests occur below the cloud forests where rainfall exceeds 2500 mm per annum. There is little difference in floristic composition between the very tall rainforest proper and the less tall lower montane rainforest. They are largely located in the lower areas of Mt. St. Catherine and the best remnants are found in Grand Etang Forest Reserve;

Evergreen and Semi-evergreen Forests – These forests occur where the rainfall is between 2000 – 2500mm per annum. A 40-60 ha. area of this forest-type occurs at Morne Gazo in the south of the island, due to a 'cloud track' which causes more rain to fall in this area than expected;

Deciduous Forest and Cactus Scrub – These occur at lower elevations where the rainfall is between 1000 – 2000 mm per annum, usually falling in a five month period. They are found in the south and north of the mainland of Grenada and on Carriacou and Petite Martinique;

¹ Beard J.S.(1949) The Natural Vegetation of the Windward and Leeward Islands, Oxford.

Littoral Woodlands – These occur along the coast in small stretches and should be found in Grenada, Carriacou and Petite Martinique. However, most of this woodland has been lost, although a small patch still exists at the edge of Levera woodland in the north east of Grenada;

Mangrove Woodlands – Grenada contains 21 patches of mangrove along the eastern coastline from Levera to Telescope, and along the south eastern coastline from Requin to True Blue, and on the north and south coasts of Carriacou. The largest are at Levera, Conference, Upper Pearls, Westerhall, Calivigny and Tyrrel Bay.

6. Grenada's terrestrial wildlife is thought to consist of four amphibian species, eight species of lizards and five species of snake, 150 species of birds, of which 18 species are thought to be threatened or endangered, four native species of terrestrial mammals and 11 native species of bats. There is little information available on invertebrates in Grenada but several species of fresh-water shrimps and land crabs are noted. There is one possible endemic species of weevil (*Diaprepes sp.*)².

7. The dry forest found in the south and north of the island is considered prime habitat for two endangered and endemic species of birds – the Grenada Dove (*Leptotila wellsi*) and the Grenada Hook-Billed Kite (*Chondrohierax uncinatus murus*). Grenada is also home to four bird species which are endemic to the Lesser Antilles (CCA/GOG/USAID, 1991) –the Grenada flycatcher (*Myiarchus nugatory*), the Scaly-breasted thrasher (*Margarops fuscus*), the Lesser Antillean bullfinch (*Loxigilla noctis*), and the Lesser Antillean Tanager (*Geochelone carbonaria*) (CCA/GOG/USAID, 1991). Several species have become extinct in Grenada since the arrival of the Europeans, including the Manatee (*Tricheus smanatus*), the Grenada parrot (*Amazona sp.*), the Agouti (*Dasyprocta albida*), Neuweid's Moon Snake (*Pseudoboa neuweidi*) Shaw's Racer (*Liophis melanotus*) and the Morocoy Tortoise (*Geochelone carbonaria*) (CCA/GOG/USAID, 1991). A list of species found in Grenada is given by Groome (1970), but this may have been incomplete when written, and some of the species mentioned may no longer exist. Other studies such as Blockstein (1991) and Glen (1994) provide detailed data about the Grenada Dove (*Leptotila wellsi*) and the Mona Monkey (*Cercoithicus monadenti*) respectively.

8. Currently the most important nesting areas for Grenada seabirds are the unpopulated islets between Grenada and Carriacou; especially the islands close to Isle De Ronde. Boobies are by far the most important species group and significant rookeries are to found at "Gwizo" (near Isle De Ronde), Les Tantes and "Upper Rock" with some at "Le Rock". Significant numbers of Frigate Birds called "Scissors-Tail" are resident at Sandy and Green Islands. All these birds depend on schools of anchovies and various fry (Pischet) very common at the Isle De Ronde zone.³ Notably, although fishermen and other poachers target the young (fat chested) boobies and Ramier for food, populations have remained vibrant over the years (pers. Comm. B. Calliste, current fisherman). Ramier, *Columba squamosa* seems to nest in the rocks among the boobies. Various species of birds embark on daily migration patterns between the main islands (Levera area) the islands of Sugar Loaf, Green and Sandy Island⁴.

9. With regards to introduced species, during colonial times the mongoose (*Herpestesaur opunctatus*) was brought in for snake control and the Mona monkey (*Cercoithicus monadenti*) as pets. The Mongoose is now considered a pest and the Mona monkey has become a tourist attraction particularly in Grand Etang Forest Reserve.

10. Fresh water animals, ranging from fish to snails to insects and worms can be found in Grenada, but not much is known or documented on them. The most extensive listing of marine and fresh water fish

² Groome, J.R. 1970. A Natural History of the Island of Grenada W.I. Caribbean Printers, Trinidad.

³ Devas; R.P. 1954 Birds of Grenada and the Grenadines Yule Printers, Trinidad.

⁴ Vincent, G. 1981 (See S. Aucoin Outcomes of the FSP Project Preparation Process (2013/14)

fauna for Grenada is provided by the International Centre for Living Aquatic Resource Management (ICLARM, 1998): 233 marine species, 69 marine/brackish water species and 17 species for fresh water. Fresh water fishes include: Tete chien or Yoca, Tititree or Suckstone (*Sicydium plumieri*); Mullet (*Agnostromus monticola*), Mullet (*Mugil sp*), Zandomay (*Eleotris sp*), River Coco (*Centroporamus sp*), Tilapia (*Tilapia mosambica* and *T. nilotica*), Guppy or millions (*Gambusia sp*, *Poecillia reticulate*), and Sword tail (*Xiphophoru shelleri*), among others. Records of fish landings classified the range of marine species into pelagic finfish, demersal finfish, crustaceans and shell fish and then unclassified fish (mainly demersals). The near shore and offshore ocean provides Yellow-fin Tunas, Oceangar (sailfish), Marlin, Dolphin fish, and King fish among others; mainly scads, i.e. jacks and robins, are harvested by beach seines very close to shore when such fish come off the ocean deep on a daily basis⁵. Crustaceans and other shellfish such as lobsters, turtles and conch (lambi), are traditionally harvested by divers in significant quantities.

11. The three coastal habitats that are important for maintaining Grenada's near shore fishery are: the mangrove swamps, sea grass beds and coral reefs. Mangrove ecosystems provide substrate for marine organisms, feeding and breeding, foraging, and refuge areas for many commercial species and act as nurseries for their offspring. A very good example of mangrove vegetation exists at Levera Pond, St. Patrick and at Harvey Vale Carriacou. Other areas include Conference/ Pearls area and the bays between St. David and Prickly Bay on the south coast off the island. The main species of mangrove include red mangrove (*Rhizophora mangle*), black mangrove (*Avicennia germinans*), white mangrove (*Laguncularia racemosa*) and button-wood (*Conocarpus erectus*). Sea grass beds act as a transition point and ecosystem Energy Bridge between mangrove communities and the reef system and fishing grounds. Marine turtles, e.g. Atlantic Green Turtles, depend on healthy sea grass communities as a source of food. Coral reefs provide excellent shelter for some resident and transient species (to offshore fishing grounds) as well as substrate for algae and other organisms which form part of a rather complex food web.

12. The rest of the coastal area is considered dry woodland and cactus shrub made up of a mixture of species including *Ipomeas p.* in some sandy beach areas, sea grape (*Cocolobauvifera*), coconuts (*Cocos nucifera*), almond (*Terminali acattapa*) and manchioneel (*Hippomane mancinella*). Marine plants include sea grass communities in the Telescope area and within the barrier type reef extending from Grenville Bay to Prickly Bay in the south; at Carriacou in the L'Esterre Bay and Machineel Bay and within the reef at North Bay, Isle De Ronde. The main species are turtle grass (*Thalassia testudinum*) and manatee grass (*Syringodium filiforme*). Other marine plants include various species of green, blue green, brown and red algae, some of which are used locally as food. A variety of sea weeds or sea moss (red marine algae, mainly *Gracilaria sp*) is harvested at notable sand-mud locations at Calliste, Conference, Pearls and Telescope as well as locations at Carriacou and Isle de Ronde. The algae are processed into a milk-based beverage primarily for local consumption, though some of the dried plants are exported on a small scale to other islands. Sustainable harvesting of *Gracilaria sp* has been maintained at Calliste, St. George among other areas.

13. Most of the reefs around Grenada and the Grenadines, especially along the East and South East Coast are in varying stages of degradation and recuperation. The islands adjacent to Levera Bay have reef systems, with Sugar Loaf being in the best state of recovery and dominated by Elkhorn coral (*Acropora palmata*). The Grenada Preliminary Data Atlas (1980) shows areas of living reef along the East Coast which are basically a combination of various species of branching and boulder coral in varying stages of degradation and recovery. There is one barrier type of reef stretching from Telescope Point to Marquis Islands with Elkhorn, finger coral (*Porites porites*) and some boulder coral, including mustard, and brain

⁵ Finlay (1999) (See S. Aucoin Outcomes of the FSP Project Preparation Process (2013/14))

coral. Small fringe reefs, mainly of Elkhorn coral, exist along the south east and south coast to Point Salines. These reefs show some signs of recovery but most of them remain overgrown with algae.

14. On the North West Coast, the reef at Red Rock, originally dominated by Elkhorn coral has suffered much physical damage probably from strong storm swells (Ground Sea) which frequently hit the area. Reefs that exist at Beausejour and Moliniere are being steadily degraded by overuse mainly by tourists (snorkeling and scuba diving). At Grand Anse, the Three Fathoms reef is badly degraded; however, the Six Fathoms reef which consists of a combination of hard and soft coral is still in good shape. Large barrier reefs occur along the East coasts of Carriacou, Petite Martinique and some of the smaller islets of the Grenadines. These are strongly dominated by Elkhorn corals in the shallow areas and boulder coral in the fore reef. Saline and White Islands have an excellent reef system as well as the best species combination in the area.

1.A.2 Ecosystem Functions and Uses:

15. Forest ecosystems cover approximately 20.8% of Grenada. Years of hurricanes, deforestation and replanting in Grenada have led to the forest ecosystems that have evolved today, which are primarily secondary re-growth or cultivation, with the exception of some isolated areas on steep mountain slopes, and the Grand Etang Forest Reserve, which contains primary forests. Nonetheless, secondary forests and forest fragments are important in the landscape, particularly as they reduce the amount of edge effect around forested PAs and minimize the amount of agricultural land (and therefore the setting of fires and other impacts) directly abutting PA forests. Grenada's forests are important for the provision of water supplies, control of soil erosion and enhancement of soil productivity, various economic activities, and carbon sequestration (terrestrial PAs in Grenada are estimated to store a total of 322,158,3 tC). There has been a general phasing-out of timber production in Grenada over the past decades, but forests continue to be important for the livelihoods of many rural groups engaged in hunting, saw milling, handicraft making, animal grazing and tourism activities. As timber production has declined, non-timber forest products (NTFPs) have become a major contributor to the livelihoods of rural communities. For example, many individuals use screw pine (*pandanus utilis*) and bamboo as raw materials for the production of spice baskets and other handicrafts (although bamboo can have negative impacts through crowding out of invasive species and its vulnerability to fire). Other important NTFPs include fruits, charcoal, and medicinal plants. Hunting is a popular activity in Grenada for recreation and, for some, as a source of income. Degradation of forests after the passage of Hurricanes Ivan and Emily has seriously affected households who depend on NTFPs such as fruits and wild meat to supplement their diet and income, and mangroves and dry forests for timber for charcoal production.

16. Agricultural lands are primarily interspersed with forests in the low-lying and mid-level elevations of Grenada. Currently, 75% of the total land area that is not forested is under some form of agriculture. Agriculture is a major contributor to Grenada's economy, averaging 8% of GDP between 2002 and 2006, with primary agricultural exports accounting for approximately 57% of all exports during this period. As Grenada transitioned from a cotton and sugar producer to tree crops such as nutmeg, cocoa and bananas, land usage and production moved from the lower areas up the mountainsides, and today most agricultural land consists of small land holdings of 2 hectares or less. The absence of large areas of monoculture has allowed for wider biodiversity on agricultural land, and the wide use of permanent crops creates a better environment for biodiversity conservation in general (stands of cocoa, nutmeg or fruit trees are in place for many years and provide habitat for other plant and animal species). However, in recent years there has been a consistent trend towards the conversion of lands, particularly larger plantations, from agriculture into housing, tourism and commercial uses, and this encroachment on former agricultural land and key watersheds is a major concern as these agricultural lands are important for provision of food, control of soil erosion and water runoff, and as habitat for birds, pollinators and soil organisms. Freshwater ecosystems are important for water provision, drainage, aquatic habitat, nutrient

cycling and sustainable livelihoods -- numerous rural inhabitants harvest crustaceans and other shellfish in significant quantities for subsistence purposes and as a source of income.

17. Coastal/marine ecosystems include mangroves (primarily red mangrove, black mangrove, white mangrove and buttonwood), which occupy about 3.4 sq. km., coral reefs (primarily Elkhorn coral, Boulder coral, Finger coral, Mustard coral and Brain coral) that cover an estimated 12.5 sq. km., and sea grass beds (turtle grass and manatee grass). Grenada's fisheries sector, which is primarily semi-subsistence plus some small-scale commercial operations for yellowfin tuna (*Thunnus albacaves*), is highly dependent on the health of the coral reefs and other ecosystems. In addition, mangrove ecosystems filter runoff from land, provide substrate for marine organisms and birds, and provide feeding and breeding areas and nurseries for the fish stock. Seagrass beds act as a transition point and energy bridge between the mangrove communities and the reef system and fishing grounds. Grenada's beaches are dynamic ecosystems that protect the coastal area from wave action and provide habitat and nesting sites for marine species (including many crustaceans and Hawksbill and Leatherback turtles). Grenada's tourism sector, which has been the main driver of the economy of the country since the 1980s, is highly dependent on the health and aesthetic values of coastal and marine ecosystems. Although hurricanes in 2004 and 2005 destroyed some tourism infrastructure and slowed down tourism-related investment, the country's mix of traditional sun-sea-sand and cruise tourism as well as eco-tourism has rebounded strongly since then.

1.A.3 Protected Areas in Grenada

18. Grenada is considered to have special land management challenges in its attempts to adopt PA management as a key instrument for conservation and management of BD and ecosystems functions. Key issues for public policy and practice of a PA approach to conservation and management of BD and ecosystems functions relate to and stem from Grenada's current land tenure and land ownership. Records show that 85% of the terrestrial land in Grenada is privately owned rather than owned by a small dominant set of land barons or by Government. This means that much less than 15% of the terrestrial lands are expected to be under the direct 'command and control' of Government for programmatic management. As source and consequence of this land tenure situation are:

- a. weak institutional arrangements for application of various land management policy instruments;
- b. a compartmentalization of administrations requiring shared management of limited spaces that have multiple ecosystems functions;
- c. pervasive small-plot mixed farming landscapes;
- d. a legacy of ineffectual land zoning;
- e. pressure on the Government to adopt policy instruments that actively manage shared public and private eco-assets for economic development that is driven by the imperatives of livelihood opportunities for the population;
- f. lack of capacity to manage and conserve eco-assets using current cutting-edge knowledge and technologies in the context of "contested use" of public/private natural resources, the use of marine (Common Property) resources is a special case of note;
- g. lack of sufficient applications of economic instruments for controlling the use of eco-assets in the face of a virtual land management policy that is controlled by market factors and a market pricing system than by Government directed public policy.

19. Grenada's Protected Areas System, including national parks, protected areas, marine reserves, heritage conservation areas and forest reserves, are designated and managed primarily under three Acts:

the *National Heritage Protection Act (1990)*, the *National Parks and Protected Areas Act (1991)*, and the *Fisheries Act (1986)* and its accompanying *Fisheries (Marine Protected Areas) Regulations (2001)*. Other relevant legislation includes the *Physical Planning and Development Control Act (2002)*, and the *Forest, Soil and Water Conservation Act (1947)*. The *Soil and Water Conservation Ordinance (1956)* makes provision for declaration of forest reserves and establishes regulations on uses of protected forestlands. In addition, draft legislation was prepared in 2003 (draft *Protected Area, Forestry and Wildlife Bill*) to address concerns with overlapping legislation associated with protected areas, forestry and wildlife, but the draft bill was never finalized.

20. Management of protected areas is primarily the responsibility of the Ministry of Agriculture, Forestry and Fisheries (MAFF); within the MAFF, the Department of Fisheries (DF) is responsible for marine protected areas and management of fisheries resources, with 8 persons working primarily on MPA management. The Department of Forestry and National Parks (DFNP) within the MAFF has 15 full-time staff to manage forest reserves and other terrestrial protected areas, as well as 40-50 field staff providing forest ranger and foreman duties. The Ministry of Tourism is responsible for the management of 13 tourism sites associated with PAs (heritage sites and the visitor complex in the Grand Etang Forest Reserve). Two bodies oversee PA management in Grenada: the National Implementation Support Partnership (NISP), which supports implementation of the PoW on PAs in Grenada in partnership with various governmental and non-governmental agencies, and the National MPA Management Committee, which is responsible for setting MPA policy and for overseeing all aspects of MPA management nationally.

21. The Government of Grenada has committed to a national target of PA coverage of 25% of nearshore and 25% of terrestrial territory by the year 2020 as part of the Caribbean Challenge. To date, 10 terrestrial protected areas have been established in Grenada that together protect high elevation forest environments, critical habitat for the endangered Grenada dove, and Amerindian cultural resources; these existing PA sites account for approximately 6% of the terrestrial environment of Grenada. In addition, a number of other PA sites are in various stages of planning/approval. In the coastal/marine environment, 3 MPAs have been legally established in Grenada, encompassing approximately 4% of nearshore coastal resources (defined as territorial waters out to 12 miles) and protecting coral reefs, mangroves, beaches and recreation and tourism areas (see Table 1).

Table 1. Overview of Existing & Proposed Protected Areas in Grenada

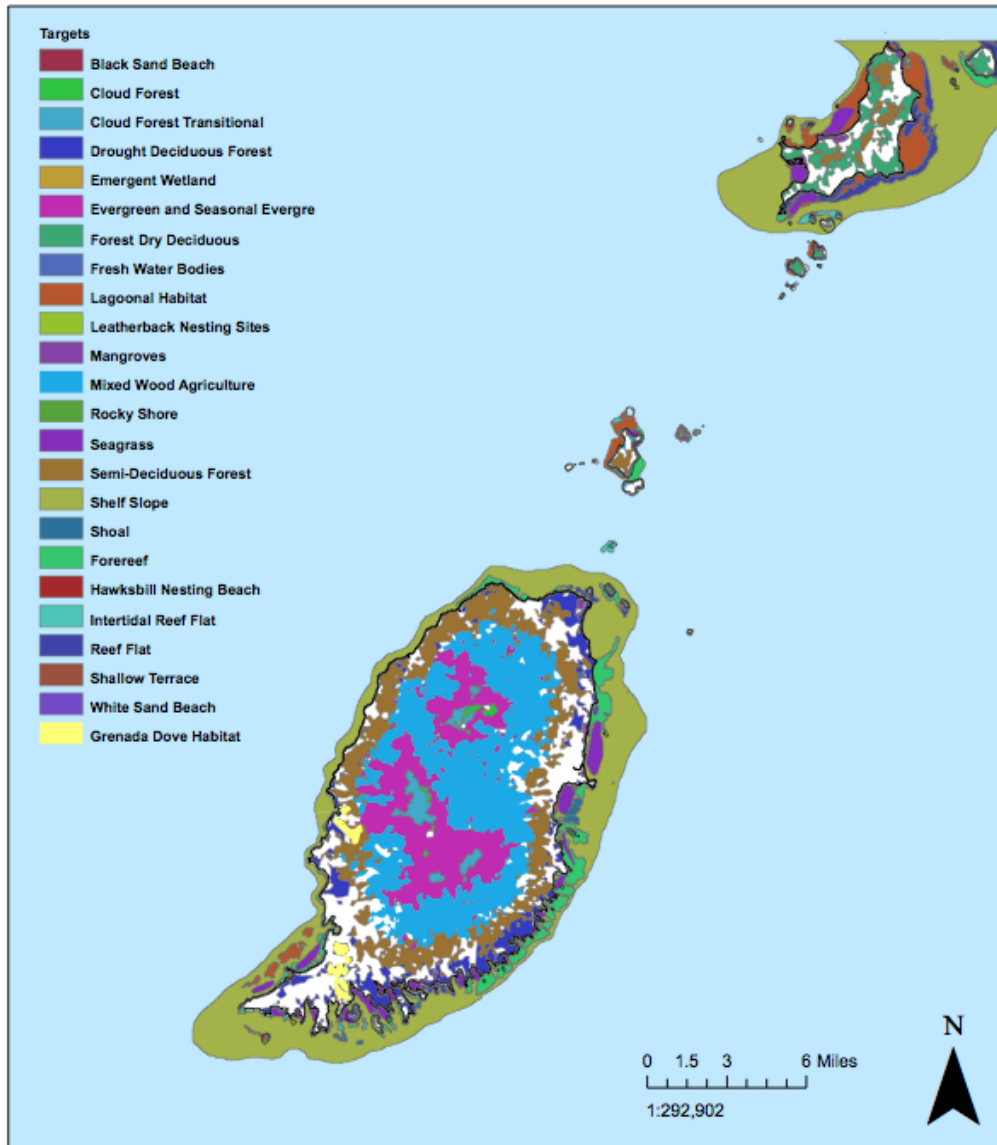
Type	Official Name	Status	Location (Island)	Terrestrial Area (ha)	Marine Area (ha)*	Total Area (ha)
Terrestrial Protected Areas						
Protected Area	Perseverance Protected Area and Dove Sanctuary	Legally established; has current management plan	Grenada	100	0	100
	Beausejour Protected Area	Cabinet approval (2011) for its addition to the Perseverance Protected Area. Legal establishment pending parliamentary approval and gazetting	Grenada	40	0	40
National Park	Mt. Hartman National Park and Dove Sanctuary	Legally established (1996), then de-gazetted in 2006. Re-designed boundaries received Cabinet approval in 2011; legal establishment pending in parliament; draft management plan (1998) is out of date.	Grenada	62	0	62
	Levera	Cabinet approval. Requires legalization/ gazetting; has only a draft management plan	Grenada	123	0	123

Type	Official Name	Status	Location (Island)	Terrestrial Area (ha)	Marine Area (ha)*	Total Area (ha)
	Lagoon Road	Proposed only	Grenada	Unknown	0	Unknown
Forest Reserve	Grand Etang	Legally established; has a current management plan	Grenada	1544	0	1544
	Annandale	Legally established; has a current management plan	Grenada	240	0	200
	Mt. St. Catherine	Has been surveyed, but not legally established (Govt. needs to buy private lands, but does not have the funds)	Grenada	1000	0	1000
	Morne Gazo	Legally established; no management plan	Grenada	25	0	25
	High North	Legally established; no management plan exists	Carriacou	Unknown	0	Unknown
	Richmond Hill	Legally established; no management plan	Grenada	8	0	8
	Grand Bras	Legally established; no management plan	Grenada	4	0	4
	Mt. Moritz	Legally established; no management plan	Grenada	8	0	8
Historical / Cultural	Pearls Crown Lands	Proposed; mostly private lands; boundaries unclear	Grenada	Unknown	0	Unknown
Total – Terrestrial PAs				3,154	0	3,154
Marine Protected Areas*						
Marine Protected Area	Sandy Island/ Oyster Bay	Legally established; operating with management plan	Carriacou	100	780	880
	Moliniere/ Beausejour	Legally established; operating with management plan	Grenada	0	300	300
	Woburn/ Clarks Court Bay	Legally established; has management plan but not operational until early 2013	Grenada	0	600	600
	Grand Anse	To be legally established and managed by late 2013	Grenada	0	1,500	1,500
	Southeast Coast	To be legally established and managed by late 2013	Grenada	0	7,000	7,000
	Levera	To be legally established and managed by late 2013	Grenada	50	750	800
	White Island	To be legally established and managed by late 2013	Carriacou	100	2,000	2,100
Total – Marine PAs				250	12,930	13,180

*Extent of marine areas in hectares is approximate

22. Currently, protection exists for only a few forest areas in Grenada, and not all forest types are represented in these areas. Grand Etang Forest Reserve has an area of 1526 ha. of cloud forest, rain forest and lower montane rain forest, and plantations which are fully protected by the legislation from any change in land use and from hunting. There are National Parks at Levera (123 ha.) in the north east of the island, primarily mangrove, and at Mt. Hartman in the south west and Perseverance Estate on the west coast which is dry forest. In Carriacou, 136 ha. of forested area are protected at High North. Work is currently in progress by the Forestry Department and the Forest Management Project surveying area to create three more Forest Reserves at Morne Gazo, Annandale and Mt. St. Catherine. This will result in approximately one third of the island's forest being protected. Ultimately, an effective Protected Areas System should include the conservation targets illustrated in Figure 2, below.

Figure 2: Protected Area Gap Analysis Conservation Targets



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Caribbean GIS (S. W. Margles)
Map Projection: UTM Zone 20N
Geodetic Reference System: WGS 1984
Source: Grenada Dove Habitat, TNC

1.A.4 Socioeconomic Context

23. Grenada has a population of approximately 109,000 persons (Yr. 2010 census) and according to the UNDP is ranked 63rd out of countries on the Human Development Index (HDI). According to a survey held in 2008 and regarding poverty rates, 37.7% of individuals were under the poverty income level; likely a result of a large proportion of persons being involved in the informal economy. Within the period of 50 or more years ago when the economy of Grenada was predominantly agricultural, the population was characteristically rural. Since then, however, Tourism, Construction and Services have gradually come to be the main contributors to economic activity and livelihoods, and as a result most of the population is now distributed as virtual townships of the historical towns of St. George (Capital), Grenville, Gouyave, Sauteurs and Victoria. A distinct rural to urban drift makes South St. George the

most populated and most built up area in Grenada. A round-the-island road network and a historically rural population have allowed for a fairly equitable spread of schools and health facilities on the islands.

24. According to records from the Central Statistics of the Government of Grenada 2001, the population of Grenada was distributed by parish as follows: St. George (30.6%), St. Andrew (26.3%); St. Patrick (11.2%), St. David (12.3%), St. John (9.1%), St. Mark (4.5%) and Carriacou and Petite Martinique (6.0%). It was later estimated in 2010 that the population would have risen by about 5% overall. Due to rural to urban migration, it is estimated that the St. George population has increased significantly at the expense of the other parishes. The most economically active parish in Grenada is therefore St. George where the post-agricultural economic activity is notable and where the Tourism and Services infrastructure is mostly concentrated. This is the parish where the highest proportion of the population lives and works at livelihoods associated with job opportunity. St. George is also the parish where many persons from the other parishes work and then commute back to their residences on a daily basis.

25. A significant segment of the population depends on subsistence incomes and the informal economy. In 2005, a household survey estimated that the formal unemployment rate for females was 26.4%, the male rate 12.4%, the youth rate 32.9% and the overall rate 18.8% in 2008. A poverty assessment report revealed a poverty rate of 37.7% while the vulnerability rate was measured at 14.6%. The National Census of 2010 showed that the population had 53,008 (50.2%) males and 52,531 (49.8%) females. A high unemployment rate is associated with a high dependence, especially in the rural areas, on subsistence income and from traditional agriculture-associated livelihoods based on the terrestrial eco-assets from private or public lands on the one hand and from the marine (fisheries) eco-assets from the sea as Common Property, on the other hand. This high dependence of persons on subsistence livelihoods and informal economic activities coupled with a historical “open-access/free-entry” use of the natural terrestrial and marine resources is a significant challenge for programmatic management and conservation of BD and ecosystems functions.

26. Socio-economic-based threats to the BD and ecosystem functions are clearly identified as directly and significantly traceable to humans as they attempt to satisfy livelihood needs. Such threats include habitat destruction and fragmentation with respect to land and sea-use, degradation of land, water resources and ecosystems services, and the over-exploitation of biological resources, especially in the marine close-to-shore environments. For example, the utilization of forest resources is important as a result of the imperatives of subsistence livelihoods. Timber production from natural forests has declined considerably over the past decade due to poor re-stocking depleted by more than 100 years of logging activities, clearance for agriculture and hurricane destruction. Commercial production of Blue mahoe (*Hibiscus elatus*) which occupied 75% of the area under plantation was seriously damaged during an infestation of the pink mealy bug between 1994-1997. Other plantation species include pine (*Pinus caribaea*), mahogany (*Swietenia sp.*) and *Cupressus lusitanica*. Although the initial reasons for plantation establishment were to reforest and stabilize forest areas as a result of serious hurricane damage, local demand presented an opportunity for income generation.

27. The small island context, where representations of critical ecosystems are in such close contact with the segments of a population dependent on natural resources for direct livelihoods, and where the use of the BD and ecosystems functions are constantly in a state of contest, requires that emphasis be placed on a transition from the “open-access, free-entry” condition to the “controlled- access, controlled-entry” regime, especially with respect to the utilization of stocks, habitat and sea-space in the marine environment. An important start comes from the National Forest Policy development process (1999-2000), where the general public made it clear that the protection/conservation aspects of forests were more important than timber production. It was recommended that timber production by the Forestry Department should be phased out and that there should be a greater emphasis on the multiple-use aspects of forest management such as conservation and recreation; the use of forest resources for non-consumptive rather than consumptive use. Managing this transition calls for regulatory instruments, with

economic incentives where applicable and various innovative co-management instruments and models that are largely untried in Grenada.

1.A.5. Legal /Institutional Context

28. There are several policy instruments available to the Government of Grenada and related to management and conservation with respect to BD and ecosystems services. The small size of the Grenada jurisdiction, and the manner in which local areas are administered (no Local area government, rather a Central government), allows for policy instruments to be applied as cross-cutting by several Ministries and Competent Authorities; policy direction is then favored by the single Cabinet government. Each Ministry and/or Competent Authority is provided with legal and institutional capacity through the legislation they have to administer and with the institutional enablings available to it.

29. Several national level development policies oversee environmental management in Grenada. The National Strategic Development Plan (2007) proposes that environmental considerations should be integrally linked to national development, identifies the need to link livelihoods and environmental sustainability, and advocates for better enforcement of laws to protect biodiversity. In addition, both the Tourism Master Plan (1997) and the National Environmental Policy and Management Strategy (NEMS, 2005) recognize the need to strengthen Grenada's protected area system through the establishment of additional PA sites and the consolidation of legal and institutional frameworks to manage the PA system.

30. The objectives of Grenada's National Biodiversity Strategy and Action Plan (NBSAP, 2000) are: to provide broad-based support for conservation and sustainable use of biodiversity, to protect key ecosystems from negative human-induced impacts, and to develop and encourage sustainable utilization of biological resources that are essential to the livelihoods of local communities. The objective of the National Action Plan (NAP, 2006) to support the UN Convention to Combat Desertification includes identifying the factors contributing to land degradation and the physical measures required to combat land degradation and mitigate the effects of drought, and the National Climate Change Policy, which identifies the need to address linkages between climate change and biodiversity. Other national policies and plans include Grenada's National Forest Policy, which emphasizes the role of forests in maintaining biological diversity, promoting soil and water conservation, and generating income through ecotourism activities; the Government's "Grenada Forest Rehabilitation Project" that is undertaking re-vegetation of forested areas in the aftermath of Hurricane Ivan; and the Government's strategy to implement the Grenada Protected Area System Plan (2011).

31. Grenada is also working to meet its obligations under the Grenada Declaration, as well as the Caribbean Challenge. Specifically, the Grenada Declaration is a pledge made at the 8th Meeting of the Conference of Parties to the Convention of Biological Diversity in 2006 to effectively conserve at least 25% of its near shore marine area and at least 25% of its terrestrial area by 2020 as a means to contribute to the sustainable livelihoods for its people and to contribute to the world's biodiversity. Grenada's compliance with the Caribbean Challenge (2008) includes a pledge to legally protect 20% of near shore areas by 2020 via expansion and improved management effectiveness of its marine protected area system⁶.

32. Finally, Grenada has a body of local laws and regulations (SROs) to more effectively respond to conventions such as UNCBD, UNCCD and UNFCCC that are in effect outcomes of the various preceding Conventions and Protocols; Conventions and Protocols acceded to be ratified or signed (as soft law) and then enacted local legislation (as hard law), as provided in Table 2.

⁶ Roberts, D (See Outcomes of the FSP Project Preparation Process (2013/14)

Table 2. Specific Legislation in Support of Environmental Management

Name of Local Legislation	Function and/or Origin
1. Yachting Act#17 (2000)	Promotes Yachting that impacts marine biodiversity
2. Beach Protection Act#67 (1979), Cap. 29 of 1990	Control the removal of aggregates from the sea shore
3. Bathing Places Act Cap.28 of 1990	Control of Public bathing spaces
4. Petroleum and National Gas Deposits Act Cap. 240 1990	Control of exploration/mining having potential impacts on biodiversity/ecosystems functions
5. Civil Liability for Oil Pollution Damage (International Convention.) Act#6, 1998	Provide for local compliance with the 1992 compensation fund for oil pollution damages
6. Pollution Damage Compensation Fund (International Convention.) Act#6, 1998	Local level implementation of the International Convention Fund (1992).
7. National Water and Sewage Authority Cap.208, 1990	Competent Authority for sequestration of potable water and for disposal of liquid wastes.
8. Land Settlement Act Cap.161, 1990	Allocate/Control use of the lands to persons for housing and agro-production
9. Land Acquisition Act Cap. 159, 1990	Government Authority to acquire, promote land with compensation
10. Land Acquisition (Partial Abandonment of land (at Belmont) Act, #25, 1996	Acquisition for partial abandonment pursuant to Act#59, 1990
11. Fisheries Act, #15, 1986	Promotion of fisheries in the fisheries waters of Grenada
12. Land Development and Utilization (Surrender and Repeal) ordinance #32, 1984	To surrender leasehold interest compulsorily acquired by Government by previous law
13. Grenada Ports Authority Acts#14 (1978), #5 (1986), #52 (1989) and others	Seaports Authority as corporate body to control shipping and facilitate Customs and immigration services
14. Physical Planning and Development Control, #25 (2002)	Control of all physical development and protection of physical and cultural heritage
15. Forest, Soil and Water conservation Act Cap.129 (1958), Cap12 (1967) and Cap34 (1984)	Provide for conservation of soil, water and forest resource shows gaps with respect to UNCBD, UNCCD, UNFCCC, SPAW
16. Oil in Navigable Waters Act (Sanitation-based) Cap218 (1990)	Control of discharge or escape of oil in the territorial waters of Grenada
17. Marine Protected Areas (Amendment) Act#1, 1999	Legal definition for MPAs and provides for management arrangements.
18. Application For Developing Land And Land Development Control Cap160	Provides for accepting applications for land development

33. While the Land Tenure and applications of policy-based management control of landscapes by Government is so constricted, there is considerable law and Administrative Authority provided by the historical “Land Development control regime” available to the Government. A major challenge and objective for the project will be to facilitate legislative enhancements, mainly providing for enactment of a draft bill: “Protected Areas, Forestry and Wildlife Bill” that would bring provisions for forestry management to be more in line with expectations of UNCBD, UNCCD and UNFCCC; and especially for rule-based applications of INRM (SLM; SFM/REDD+, CC provisions). Another objective will be to provide institutional enhancements that will enable the Government to better conserve and manage BD and ecosystems functions. The project will also facilitate enhancements to legal provisions with respect to the current Act governing Marine Protected Areas and their application as instruments for the management and conservation of BD and ecosystems functions in Grenada.

Part I B Baseline Analysis

1.B.1. Threats to Biodiversity & Ecosystem Services:

34. The threats to BD and ecosystem services in both terrestrial landscapes and marine seascapes are characteristic of small volcanic islands with steep hillsides and Marine Island shelves adjacent to the deep of the ocean. Threats include: loss of indigenous forms, degradation of ecosystems, fragmentation of habitats, overexploitation of terrestrial wildlife, over-exploitation of marine stocks and habitat, forest fires, and multiple climate change impacts, including variation in seasonal marine and land-based water quality. These threats and their underlying root causes/drivers are elaborated as following:

- Habitat Destruction / Fragmentation: Forest ecosystems, which are primarily found in high elevations where most of Grenada's terrestrial PAs are located, are threatened by fragmentation and destruction of habitat. The most important ongoing threat is encroachment from expanding agriculture and human settlements, particularly on privately owned forested lands, where there are few controls, but also on the edges of PAs. Other significant threats are slash and burn agriculture and invasive species (bamboo) encroaching into native forests. There is evidence that due to changing land use from declines in tree crop agriculture and with the "outing" of banana cultivation on a large scale in recent times, some increases in dry and mountain forest (bush) have been observed⁷. There are, however, notable threats to middle altitude forested landscapes due to annual forest fires, destabilization of land due to hurricane impacts and encroachments of housing, and "slash and burn" farming practices. Burning of agricultural waste and setting of fires to clear land also pose a threat to forest ecosystems, including the edges of protected areas; in 2009-2010, approximately 30% of the Beausejour watershed was destroyed by fire. In the past, natural forest regeneration kept pace with the effects of encroachment, fire, and other pressures, but current rates of deforestation and fragmentation threaten the existence of species such as the Grenada Dove, the Grenada hook-billed kite, and the iguana.

The historical causes of loss in forest cover in Grenada relate to both natural and human threats; some natural threats coupled with human practices while some human practices are driven by compelling socio-economic contingencies reflected in unsustainable forest, land and sea management activities. The main causes include: expansion of agriculture and urban development, forest fires, subsistence logging and firewood sequestration, forest pests, and natural disasters, such as hurricanes. The drivers of deforestation in the Grenada jurisdiction as a whole, as well as in the pilot area of Beausejour, are: (i) structural drivers; (ii) direct drivers, and; (iii) indirect drivers.

The main *structural drivers* of deforestation relate to the high demand for land for agricultural crop farming, until 50 years ago, followed by the fragmentation of the historical "Agricultural estates" and the complexity in property rights created by this land fragmentation. Currently, 85% of the lands are privately owned with few land reserves and with a virtual dual land development control regime; one for the urban area, and other for the agricultural and high altitude forested areas. The strong policies that used incentives to promote small-holdings, multi-crop agriculture in the rural areas as a counter measure to replace the dominance of "Agricultural estates" allowed for this wide spread fragmentation of lands, encroachment into steeper landscapes, and scattered semi-subsistence farm holdings in the rural areas where the semi-evergreen and mountain forests existed. Urban expansion allowed for systematic land clearance for housing or for crop farming of stocks such as lowland cocoa, sugarcane and cash crops. Furthermore, the emphasis of land development control in the urban areas has been for Monitor Control and Surveillance (MCS) of building standards and compliance control measures, rather than application of strategic land use controls in urban areas. In short the rural land development regime has historically produced land fragmentation, multi-cropping and multiple incentives for agriculture; the urban land control and

⁷ Bibliographic evidence provided in Annexes 1 and 2.

development regime has been an emphasis of building standards. Land use zoning continues to be challenging strategy to pursue.

The *direct drivers* of deforestation in Grenada include: (a) “Change-of-use” of land where, during various periods in the evolution of rural agriculture, the focus was on crops such as tobacco and sugarcane in the lower altitudes, cocoa and nutmegs in higher landscapes, citrus and other exotic fruits, bananas, etc. Each to a greater or lesser extent encroached on the upper forested landscapes, with little abandonment of lands, and little natural regeneration of forests when crop preferences changed. (b) Coupled with change of use of land, especially in the dry land forested areas on the lower altitudes, consumption of dry woods for firewood was significant since “coals” from fire wood had and still have a vibrant market in rural areas. (c) Within the last 10 years, lowlands and high woods fires have been very significant as a threat to forest cover. Forest fires on the southwest, west and eastern landscapes have been severe, extensive and lasting for days and weeks covering several watersheds and local areas (Villages). These fires have been exacerbated by severe dry spells and apparently by the detachment that villagers now show for “outing” fires on their neighbor’s landholdings. Annual fires in some locations have served to debilitate the capacity of the landscapes to regenerate forest cover. (d) Disease and pests have contributed also to the weakening of certain forest stocks on both the Highwood’s species and the Lower Mountain and dry forest. Notably, the pink mealy-bug caused significant damage to the vibrancy of the forest cover during 1994-97, with a particularly strong impact on the Grand Etang forest reserve.

The *indirect drivers* of deforestation include: (a) High unemployment (formal and informal) in rural areas; poverty and lack of employment alternatives force people to clear high woods on private lands and on state lands considered to be Common Property. (b) Institutional weaknesses in monitoring, control and surveillance. Forest rangers employed by the government focus on the crown lands for monitoring threats to forests, but there are only a few such rangers; the few rangers that concentrate their monitoring efforts for government/Crown lands have little time for MCS on private lands. Private forests receive considerably less attention even though the law provides for compliance controls to be applied as well on private as on crown lands. (c) Until recently, public policies were strongly oriented to the promotion of all forms of agriculture and included incentives and support for tree crops as well as other types of farming and marketing. These strong support systems allowed for any farmer to adopt any of several crop options and for using any type of rural lands for a livelihood. These policies that encouraged crop farming and land clearance while taking advantage of almost any option for increased agricultural production and livelihood, ultimately encouraged deforestation.

Compounding this are the devastating impacts of hurricanes on forest structure and functioning in Grenada. In just the past 25 years, Hurricane Lenny (1999) destroyed many coastal wetland forests; Hurricane Ivan (2004) devastated forests at the Mt. Hartman and Perseverance protected areas, which were established for the protection of the critically endangered endemic Grenada Dove; and Hurricane Emily (2005) caused significant damage to dams, forest roads, bridges and watercourses and severely impacted forestry and conservation infrastructure and activities. The continual loss of habitat, especially in dry forested areas has made several endemic species, such as the Grenada dove, highly threatened.

Grenada’s coastal ecosystems also are threatened with significant habitat destruction, primarily due to the concentration of housing and hotel / commercial development along the coastline. Mangrove ecosystems in particular have been severely reduced due to tourism development and the building of jetties, although other factors such as harvesting, pollution from solid wastes, pesticides sewage and oil spills, and sand mining have also contributed to mangrove decline. The threat of habitat degradation is mostly seen with the destruction of mangroves, which are significant seasonal refuge for birds, crabs and mammals, such as opossum. Mangroves are also ecological refuge for marine species sharing time on sea grass beds and coral reefs.

- Degradation of Land and Water Resources and Ecosystem Services: Terrestrial and coastal / marine ecosystems in Grenada are subject to numerous sources of degradation. In the marine environment, the most significant threat to coral reef ecosystems comes from upstream sources of pollution (sewage outflows; animals grazing along rivers), nutrient overload (fertilizers) and sedimentation (construction; erosion from agricultural practices). Both the Moliniere/Beausejour and Grande Anse MPAs are directly downstream from the Beausejour watershed and severely affected by such activities there. Sea grass beds are also degraded from pollution and nutrient loading from land-based sources. Despite the protective cover provided by forest and agricultural tree crops, soil erosion in Grenada is a significant problem and landslides are frequent following heavy rains and severe weather conditions.

A variety of agricultural practices in upstream areas are responsible for degradation of coastal / marine ecosystems (coral reefs, mangroves, sea grass beds), including: sedimentation from clearing of steep slopes for agriculture (over 90% of Grenada's land area has a slope of 20° and above), the removal of riparian buffers for farming close to riverbanks, and the removal of trees on roadsides; fertilizer use contributing to pollutant loading in runoff following rains; the use of harmful chemicals and pesticides that negatively impact fresh and coastal waters; and the burning of agricultural waste and setting of fires to clear land threaten forest ecosystems, including the edges of protected areas. The National Water and Sewage Authority (NAWASA), the Competent Authority for the sequestration of potable water from landscapes and for disposal of sewage sequestered from some urban areas, is challenged to ensure the quality of potable water produced from upper landscapes, while also ensuring that coastal waters are not overloaded by the sewage outfalls on the south coast. The management challenge for Grenada as a small island with no reserve (single use) landscapes is to share ecosystems' sources of potable water sequestration with the need to farm the landscapes resulting in chemical outfalls of pesticides and fertilizers. This is further exacerbated by the disposal of sewage and mass wasting outfalls in coastal waters that are also used for tourism and recreation purposes. Although pollution in land and marine areas is not now considered as highly threatening, nevertheless the management challenge is for responding in the present in order to forestall future threats that would be highly costly to mitigate in the future.

Uncontrolled grazing, particularly in riparian zones, contributes to the pollution and sedimentation of coastal / marine ecosystems (coral reefs, mangroves, sea grass beds). Some of these practices, especially the planting of crops and grazing of animals on steep slopes, also have negative impacts on forest ecosystem health. For example, in Carriacou, the largest out-island of Grenada, a major obstacle to the regeneration of natural vegetation, in addition to the conversion of land for development, is the effect of grazing by livestock. Many animals are tethered or allowed to roam freely in forest or scrub land (either private or public) and to graze, which prevents regeneration of trees and shrubs, since many seedlings or young plants are eaten. Grasses, sedges and unpalatable plants seem to dominate the ground cover in favorable conditions. Where grazing is intense, particularly in the dry season, soil erosion becomes more severe.

Finally, indiscriminate mining and quarrying activity impacts both coastal ecosystems (sand mining, which was recently banned for construction purposes) and forest ecosystems (in higher elevation zones where overburden and spoil material is not contained and immobilized, so that runoff contributes to siltation of adjacent waterways and eventual pollution of near-shore waters).

- Overexploitation of Biological Resources: In the marine environment, there is some overexploitation of commercial fish species, as well as illegal fishing in contravention of closed seasons / areas and gear restrictions, but these have had a relatively minor impact to date on marine species. Although a significant segment of the national fishery remains semi-subsistence and small scale, the large majority of economic-based fishing efforts and recorded fish catches are attributed

to commercial operations; species catch abundance generally reflecting both natural abundance and also stocks targeted (and preferred by fishers because of market demand. As such, main species and stock catches may be ranked as follows (based on average catches for the year 1987- 1998): The first is Yellow-fin Tuna (*Thunnus albacares*), a highly sought-after species because of its market value and now accounting for the largest species catch of 49,895 kg (1981) to 340,194 kg (1994) and contributing 16% of catches, on average over the years. The second ranking species contributor, accounting for 12% of landings, is Big Eye Scad (*Selariscrumenophthalmus*); the third is Flying fish (*Exocoetidae* sp); and the fourth is Blackfin Tuna (*Thunnus atlanticus*).

The sea egg fishery for White Sea eggs (*Tripneustes ventricosus*) maintained a consistently high production on both Grenada and the adjacent islands for about 10 years up to 1994 when a drastic decline in abundance (both catch and field observation) was noted and hence the fishery was closed in 1995 and remained closed until 2012 when the open season was held for one month. There is now evidence of a reasonable recovery of stocks of sea eggs on main sea grass beds. The trend in production, and therefore an implied abundance of economic stocks of marine species, has been more visible for mostly commercial fish landings, since semi-subsistence and subsistence landings are less well recorded at landing sites. The annual abundance has shown distinct cyclical trends over the period 1978 to 1998⁸. Of special concern is the fact that while the demand for demersal/rock fish species is high and seems to be steadily increasing, production does not appear to show corresponding increases over the years.

In the terrestrial environment, there is increasing use of non-timber forest products for subsistence livelihoods, but as the demand for commercialization of these products increases, there is inadequate baseline data to assess the impact that harvesting of these resources has on biodiversity and ecosystem functioning. For example, non-timber forest products from screw pine (*Pandanus utilis*) and bamboo (*Bambusa vulgaris*) are harvested and utilized for making baskets and other handicraft; and also extensively used in construction. Many naturally occurring herbs are believed by many persons to have medicinal properties. Consequently, NTFP areas are also used to produce herbal medicines, especially in rural areas.

Hunting is a popular activity in Grenada for recreation and as a source of food and income. The over-exploitation of wildlife by hunters is significant despite declared ‘close seasons’ for hunting activities. The virtual “open-access/free-entry regime” for the utilization of reef species, especially semi-sedentary shellfish, is reinforced by the policy of allowing opportunity for the economically challenged segment of the population to secure livelihoods from subsistence-based economic activities. The main animals hunted are: opossum or ‘manicou’ (*Didelphis marsupialis insularis*), armadillo or ‘tattoo’ (*Dasypus novemcinctus hoplites*), Mona monkey (*Cercothicus monadenti*), Ramier pigeon (*Columba squamosa*), and iguana (*Iguana iguana*). It is reported that Iguana numbers appear to be dropping, although the reason for this is uncertain. Members of the hunters association consulted during the Forest Policy development process indicated that the abundance of the game species was declining and suggested several measures for ensuring survival of these animals, as well as their willingness to assist in the implementation of such measures⁹. A number of snake species are also said to be under threat, partly because they are often killed on sight by many Grenadians, and, until recently, they were collected in large numbers for the ‘djab-djab’ during Carnival. It has been suggested that the recent increase in rat populations may be due to the decrease in population of one of their main predators: snakes.

- **Climate Change Impacts:** Climate Change is wreaking havoc on terrestrial and marine habitats. The Caribbean region is already experiencing an increase in hurricane frequency and intensity, coral bleaching, ocean acidification as a result of increased marine absorption of atmospheric CO₂,

⁸ Finlay (1999) (See S. Aucoin Outcomes of the FSP Project Preparation Process (2013/14)

⁹ Dunn (1999) (See S. Aucoin Outcomes of the FSP Project Preparation Process (2013/14)

coastal flooding due to sea level rise and loss of protective natural barriers, as well as both observed and predicted increases in sea level and sea surface temperature. As noted above, severe storm events such as hurricanes have a significant impact on forest and coastal ecosystems in Grenada. While hurricanes are part of the natural cycle, their effects are made significantly worse at locations where anthropocentric influences, such as infrastructure or inappropriate agricultural practices on steep slopes, or degradation of coral reefs and mangroves, have compromised the resilience of these ecosystems. Furthermore, the effects of increased hurricane frequency and severity and prolonged dry periods (e.g. 2009-2010), combined with lack of effective forest management to control fires, slash and burn agriculture, encroachment, and soil erosion, have significantly compromised the ability of Grenada's forests to maintain and re-generate forest cover. Forest fires are becoming increasingly devastating, especially in the annual dry season. When such fires impact an area that has suffered several years of CC-induced dryer-than-normal seasons, the forest habitat becomes severely degraded and the biodiversity takes decades to naturally regenerate.

The impacts of Climate Change are also visible in the quality of ocean currents since pelagic stock recruitment into the Grenada fisheries is influenced by the "Orinoco green water". Another impact of Climate Change is the drying out of various types of vegetation and the impact on ecosystems, depending on the type of dominant vegetation and the biodiversity they support. The secondary and compounding effects of Climate Change are of special concern. Degraded forests result in delayed seasonal recruitment of species, fragmentation of forest cover, exposed landscapes resulting in accelerated erosion during rainy seasons, and farmers miscalculating the appropriate times for planting. Furthermore, unseasonal ocean currents and weather also impact on fish recruitment in a significant way.

35. Both natural and human threats to the BD and Ecosystems functions are identified with climate related causes such as dry season forest fires and hurricanes. Soil erosion is one of the main human threats associated with contested uses of natural resources. Since the island condition of Grenada allows for no reserve landscapes or seascapes; then all terrestrial and marine ecosystems are shared and need to be the subject of active management of the BD and ecosystems functions, as eco-assets. An effective shift away from the traditional "free-entry/open-access condition" requires much more vigorous control than merely applying closed seasons and catch-size restrictions. The Ridge to Reef Approach to management is an acknowledgement that all terrestrial processes on landscapes (human or natural) will cross from upper altitude spaces across lower altitude spaces and onto to close shores seascapes. Hence, the project is designed to more aggressively educate the public at local levels to adopt agreed-upon measures to utilize resources under a "controlled access/ controlled entry regime" and become accustomed to area restrictions associated with effectively-managed Protected Areas.

1.B.2. Direct and Underlying Causes of Loss of Biodiversity:

36. The above threats have caused several wildlife species to be lost since the arrival of Europeans, including the manatee (*Tricheus manatus*), Grenada parrot (*Amazona sp*), agouti (*Dasyprocta albida*), Neuweids moon-snake (*Pseudoboa neuweids*), slaws racer (*Liophis melanotus*), and the Morocoy tortoise (*Geucelone carbonaria*). The high level of overall poverty of 37.7%¹⁰, with even higher levels in the rural areas where people depend so heavily on natural resources for subsistence livelihoods puts a significant amount of pressure on the local biodiversity. A persistent public policy strategy that recognizes and reinforces opportunities for individuals within the informal economy to utilize the biodiversity for livelihoods compounds the pressure on that biodiversity. Population growth and encroachments on landscapes for housing and other urban developments in an increasingly formal and commoditized economy is another significant contributor to loss of biodiversity and habitat. This need to

¹⁰ Project Prep. Form (PIF)/PPP Docs: Report on Ecological and Socioeconomic Conditions with Respect to the PAs Management (2013); Ecological and Socio-Economic Conditions in the Beausejour Watershed (2013).

utilize biodiversity and habitat is even more troublesome in the marine near shore spaces where the sea spaces are common property and therefore less secure from the open-access/free-entry condition.

Land tenure:

37. The distribution of land relates directly to the utilization of BD and ecosystems functions. Since 85% of the land in Grenada is privately owned and land is distributed to a relatively large number of individuals within the population, meaning that land wealth is more evenly distributed than many jurisdictions in the region and beyond, then the small remaining percentage (15%) of crown (public) land available to government greatly weakens the Government's capacity to shape public policy regarding the utilization of the terrestrial land-based BD and ecosystems functions. The wide distribution of small land holdings in Grenada acts as a constraint on public management of landscapes as a corporate responsibility; a political challenge is identifiable; a unique political economy exists.

Deficient Environmental Planning and Weakness in Policy Formulation and Implementation:

38. The lack of adoption and application of environmental law and regulations as policy instruments has serious political implications, more so than economic ones. This makes underlying causes such as regulatory gaps, limited institutional inter-sectoral coordination, more of a reflection of the root causes themselves. While management and conservation of BD and ecosystems functions need to be more applicably reflected in enhanced law and regulations, they also need to be more explicitly reflected in the annual work plans and medium term strategies of the relevant Competent Authorities of Government.

Contamination of Water Sources:

39. Rural communities use rivers and streams for agricultural activities such as penned annual farming, irrigation, laundry and multiple forms of liquid wastes disposal, having no formal sewage disposal system at such locations. Under these circumstances, the accumulation of waste becomes more and more concentrated downstream and eventually release into marine habitats and MPAs. This occurs because there is neither a formal integrated protocol to address the causes of contamination of water sources, nor the monitoring measurement, evaluation and response system to account and diminish its impacts.

40. A baseline study commissioned in 2013 by the Organization of American States¹¹ was undertaken in order to assess the impact of discharges coming from the Beausejour and connected rivers that might have an impact on coral reefs in the Beausejour /Moliniere MPA. The study reported: (i) sedimentation levels decreased with distance from the main river mouth discharge point; (ii) a eutrophication gradient assessment in the Beausejour river showed phosphate and ammonia concentrations increasing with increasing distance down river with all phosphate and ammonia concentrations exceeding maximum allowed levels recommended by the Caribbean Environmental Health Institute; (iii) phosphate levels exceeded maximum levels recommended by CEHI for marine coastal waters, observed at a number of points; (iv) identification of which agriculture land use and domestic activities are considered the most likely causes of the types of pollution reported. Hence, project interventions in the Beausejour will have the potential to provide crucial lessons for future replication where the island landscapes and watersheds are highly similar to the one at Beausejour and where farming and domestic activities prevail.

1.B.3. Long Term Solution:

41. The long term solution for ensuring that biodiversity and ecosystems functions are protected against the multiple threats within and around PAs resides in the application of a suite of management and conservation measures using the "Ridge to Reef" approach that increases PA management effectiveness

¹¹ Nimrod et.al. 2013 Nutrient and Sediment Inputs of the Beausejour Watershed , OAS Wash. D.C.

and applies targeted SLM practices that engage civil society with Government Competent Authorities in innovative co-management arrangements.

1.B.4. Barrier Analysis

42. However, the following barriers stand in the way to achieving this long term solution:

1. Lack of a systemic approach and mechanisms for Protected Areas management and insufficient geographic coverage of TPAs and MPAs:

43. The mainstreaming of biodiversity into national policies, including the 2010 Protected Areas Systems Plan (PASP)¹², has received only tacit support from decision makers at the national level. Policy direction for protected areas is generally dependent on existing legislation, which only addresses the three existing Forest Reserves, and there are no comprehensive policies for the conservation of biodiversity within marine and terrestrial PAs, or for management of visitors and those whose livelihoods, in whole or in part, depend on PAs. Laws and regulations for protected areas management are in place, but these overlap and contradict each other in many ways, and there is a need to consolidate the legal framework based on the draft “Protected Area, Forestry and Wildlife Bill”, and to strengthen enforcement mechanisms (particularly for wildlife conservation). Another priority is to establish legal mechanisms that allow for tax benefits to be granted to persons willing to donate lands to the PA system and/or to establish conservation covenants on their lands; with over 85% of Grenada in private ownership, including all of the islands within the proposed marine protected areas, expansion of the PA system will require significant contributions from private owners. This is an important factor because the existing PA system does not adequately represent Grenada’s ecological diversity; of 26 environments classified in Grenada, only three terrestrial environments (cloud forest, transitional cloud forest and evergreen forest) currently meet the target of 25% or more representation as expressed in the Grenada Declaration.

44. Another issue is the absence of effective structures to coordinate the activities of disparate agencies involved in PA management, including the Department of Fisheries, the Department of Forestry and National Parks, and the Ministry of Tourism, who typically fail to coordinate their activities (for example, there is no coordination between management of forests within PAs and neighbouring productive landscape forests and forest fragments to ensure ecological connectivity, prevent fires, etc.), as well as a lack of institutional capacity for activities such as public education, enforcement and monitoring. Furthermore, while Grenada has recently expressed its intention to initiate community co-management of both terrestrial and marine PAs, as yet there is no experience with this approach among PA managers or local communities.

45. Financing for protected areas is another key issue: at present, the Government of Grenada spends US\$1.8 million/year on PA management, which will not be sufficient to enable an effective expansion of the PA system (it is estimated that a total of 40 PA units will be in place when Grenada reaches its goal of 25% coverage). In addition to insufficient government budget allocations, other factors include the lack of a PA system business plan to increase efficiencies and prioritize use of financial resources, and the existing practice whereby visitor fees are not retained by PA units or management agencies but instead go into the government’s consolidated fund. Finally, management of protected areas is constrained by a lack of information on the status and trends of Grenada’s ecosystems, including information on changes in ecosystem coverage over time, composition of ecosystems and functions of various ecosystems services, and changes in species abundance and distribution.

46. The specific constraints to implementing INRM therefore include: (a) Lack of sufficient “command and control” of lands by government for the greater leadership role in INRM; (b) Constraints

¹² Turner, M. (2011) Grenada Protected Areas System Plan. OECS Sect

for adopting consistent public policy options that allow incorporation of private forested lands into an integrated PA network; (c) Lack of historical experience with a model for co-management with respect to BD conservation and eco-system services/functions as Eco-assets; (d) Absence of effective structures to coordinate the activities of disparate agencies of Government that must necessarily be involved in PAs management; (e) Lack of sufficient coordination between management of forests within PAs and neighboring landscapes that provide contesting eco-systems services such as water source versus agricultural services and prevents forest fragmentation for ensuring ecological connectivity; plus, (f) Lack of institutional capacity for public education enforcement and monitoring; (g) Lack of priority and sufficient financing for BD conservation and eco-systems services; (h) Lack of tracking concerning the *status* and *trends* at eco-systems, as starting point for responses to both anthropogenic and natural threats on BD and ecosystems functions.

2. Insufficient Planning and Technical Capacities for Landscape Level Resource Management:

47. Existing National Forest Policy does not incorporate climate change related objectives (e.g. carbon sequestration), and legislation to support the policy is still in draft form, so that forest management currently relies on many decades old legal framework (in addition, existing regulations for forest management do not apply to private lands). The separation of institutional authority and regulatory frameworks between protected areas and the broader landscape, and additionally between terrestrial and marine protected areas, act as a barrier to an integrated landscape level (“ridge to reef”) approach to managing Grenada’s territory and resources. There is no central entity with oversight for land development decisions; coordination between the many agencies responsible for environmental management is weak; and in some cases there are overlaps in jurisdiction or no clear competent authority (for example regarding regulations to control development in mangroves and coastal wetlands Grenada’s National Physical Development Plan has limited policies and regulations, and even fewer enforcement mechanisms, to support sustainable land management, while the Physical Planning and Development Act makes no reference at all to conservation and sustainable use of biodiversity. In general, land use planning and management processes in Grenada do not take into consideration the maintenance of ecosystem services for the benefit of biodiversity or ecosystem functioning. Many private land owners, including those living in areas bordering PAs, can develop their lands with few restrictions and no need for compliance with land management plans, and land owners are not required by law to implement proper land management practices (e.g. there are no controls on grazing).

48. Insufficient financing of SLM and SFM activities is another constraint: funding limitations mean that field activities of the MAFF are limited to outreach programs focused on crop/livestock production and controlling illegal activities within forest reserves, and no programs are in place for activities to conserve ecosystem services, including research and monitoring. Capacities for forest management are also a limiting factor; forestry personnel require more technical training and better equipment. Another challenge is poor access to information on the status of land resources and ecosystem functions, which constrains both national level planning and the design and execution of appropriate watershed management interventions. Among the agencies that generate and utilize spatial information products (the Land Use Division of the Ministry of Agriculture; the Physical Planning Unit and the Cadastral Surveys Unit), systems of data collection, storage and dissemination are poorly coordinated and largely incompatible.

49. Finally, lack of awareness among farmers of viable SLM approaches inhibits the uptake of practices and technologies aimed at mitigating land degradation. In addition, environmental management is largely seen as the domain of government, and as a result a culture of conservation is not present in the utilization of land resources, directly leading to problems such as degradation of steep slopes through poor farming practices, and destruction of mangrove ecosystems for marine development projects.

50. Several limitations are identified with prospects for addressing problems concerning conservation and management of BD and ecosystems functions; and also in the context of CC adaptation. These limitations include:

- a) Lack of existing provisions for incorporating a Climate Change objective (e.g. carbon sequestration) and of course with legal requirements for CC responses as policy instruments for effective actions;
- b) Separation of responsibility for TPAs and the adjacent landscapes , and the separation of authority thereby providing a challenge for the integrated development of PAs in the context of BD and ecosystems functions;
- c) Lack of a central agency for management of all land development since the physical planning development control functions for administration of land settlement seems to be separate from controls for agriculture promotion and expansion;
- d) Lack of sufficient authority, law and institutional support to the forestry department for the conservation and management of the BD (and wildlife) and ecosystems services at landscapes, and in general;
- e) Lack of sufficient ‘command and control’ by government with respect to incorporating the multiplicity of medium-sized land holding into an effective integrated natural resource management (INRM) system in the name of effective BD and ecosystems management and conservation;
- f) Limited institutional financing for maintaining optimal manpower capacity to enforce and control for sustainable SLM and SFM;
- g) Lack of capacity to make timely responses to unsustainable “LD hot-spots” and to degraded bio-stocks and habitats;
- h) Lack of awareness or sensitivity by farmers concerning viable SLM and SFM practices including new technologies, and coupled with;
- i) Lack of mechanisms to mobilize farmers and land owners in SLM, SFM initiatives that, only through corporate action could remedy “hotspots” that they are aware of;
- j) Even as private land owners are aware that neither they nor government acting alone can make effective remedies for serious land management problems, the co-management approach is only in its incipient stage, and has yet to demonstrate itself as a fully profitable tool for effective management.

1.B.5. Stakeholder Analysis:

51. The project is expected to engage a diverse set of stakeholders and Table 3 provides a description of the principal stakeholders who have given tentative approval for and ought to be involved in the project. The project’s success is dependent upon their active participation in project development and the implementation of project activities. As such the successful implementation of the project will in large measure depend on “designed-in” communication with these stakeholders and for administering a mechanism to be followed through in order to ensure their participation.

52. The FSP, in its design, recognizes that there are different categories of stakeholders in terms of responsibilities, roles and vested interests. For the Government Competent Authorities there are those

with direct biodiversity and ecosystem relevance whose roles and responsibilities would be virtual obligations. For the Competent Authorities that are beneficiaries of the enhanced environment, they will be mainly recipients of an enhanced water source (NAWASA) and with the Ministry of Tourism as recipients of enhanced Tourism sites as tourism products. For the Fisheries Division as Competent Authority it will be an opportunity to better fulfill their mandate of ensuring optimal utilization of fisheries resources. For the Forestry Department it will be an opportunity to better fulfill their objective of collaborating with allied agencies within the Ministry of Agriculture (Extension services, Agronomy, land use etc.) for ensuring optimal utilization of forested landscapes that perform multiple ecosystems service functions.

53. NGOs will be providers of technical assistance for empowering local area persons, and as such, they will be recipients of financial and other support, as well as responsible agents impacting local area communities in fulfillment of their mission of empowerment. Meanwhile, Community-based organizations (farmers, fishers and community development) will be both recipients of assistance and facilitators of development targeted at their individual vested interests. Finally, for the donor- funding co-financing agencies, the project provides an opportunity to contribute to conservation and management of the BD and ecosystems functions at the local level in support of global and local benefits which were designed into their individual projects whether bilateral or multilateral (Regional).

Table 3. Key Stakeholders considered highly relevant to the project

STAKEHOLDER (SH)	EXPECTED ROLE/CONTRIBUTION IN PROJECT IMPLEMENTATION
Ministry of Agriculture, Lands, Forestry, Fisheries and Environment (MoA as chief SH) <ul style="list-style-type: none"> Allied Statutory Body: Grenada Cocoa/Nutmeg Associations; for marketing products of Tree-crop agriculture (Commodity Boards). Allied Statutory Body: Marketing and National Importing Board (MNIB); for marketing of Agricultural products produced by small-crop farmers. 	<p>This Competent Authority(CA) of Government responsible for ensuring that the policy and legal framework are in place for effective management of natural resources, specifically BD and ecosystems services, and will have overall responsibility for implementation of the project.</p> <p>This CA as the agency with the widest scope of knowledge, skills, competencies and historical experience for dealing with various aspects of the implementation and with legal and regulatory authority is well placed to engage various divisions on the one hand and then engage land based/ sea based livelihoods communities on the other hand for the purpose of protecting the BD and ecosystems functions.</p>
Division of fisheries (Management)	This CA within the Ministry of Agriculture is directly responsible for conservation and management of seashore stocks, habitats and sea space directly impacted by land based economic activities such as farming and various waste disposal outfalls; can contribute to education awareness on conservation management issues.
Department of forestry and wildlife	The CA within the MoA is directly responsible for conservation and management of forested landscapes with their BD and Ecosystems functions, notably the water source; can contribute to education and awareness on conservation and management issues.
Land use division	The CA within the Ministry of Agriculture responsible monitoring and measurement of land and water resources and maintaining a data base on the status and trends regarding Grenada's ecosystems.
Agri Extension Division	This agency of the MoA that maintain a Liaison relationship with farmers (crop and livestock) for the purpose of administering government support and for rendering technical advisory services with respect to sustainable agricultural technologies and practices.
Agronomy veterinary and related services	These agencies within MoA are responsible for providing specific support with respect to farming options such as cropping practices and preventative measures so that farmers might yield optimum benefits from their investments
Ministry of Physical Development	The Competent Authority responsible for controlling the exploration of

	aggregates from landscapes and seascapes and which authority through the physical planning development control authority (PPDCA) is responsible for ensuring sound SOP/P for land and building construction and development. In a policy environment where there is a virtual urban and a rural land development regime, a sustainable land management policy might have to be negotiated through the initiatives of the project
Non-Governmental Organizations (NGOs): - ART. (G)PIA. SPECTO. GRENCODA.	The registered NGOs as private, non-profit institutions set up for the purpose of delivering technical assistance and facilitatory services with the goal of empowering individuals and communities, especially the economically vulnerable; the role of these organizations will be to provide technical assistance and resources to CBOs and local area communities, acting as agents of the project or co-financing bodies that would provide financial resources in support. These agencies have accumulated knowledge, know-how and experience over the years.
Community Based Organizations: - North-East Farmers Org; South-West Development organization. - National Farmers and Fisheries organization.	Local area vested interest groups such as N/W Farmers' Organization; N/E Farmers' Organization; southern Fishermen's Organization INC., Grenada Federation of Agriculture and Fisheries organizations, Grenada Chamber of Industry and Commerce together with Commodity boards will all play a role in the effort. CBO's will be expected to perform roles as either or both recipients and as donor of assistance.
The Department of the Environment, now part of the Ministry of Agriculture	Agency within the ministry of Agriculture and environment – when each contributes to the suite of “Ridge-to-Reef” initiatives both within the overall island landscapes /seascapes and within the targeted Beausejour watershed (Pilot area) will contribute to enhanced management and conservation of the BD and ecosystems functions in Grenada; and with the concept of land/ sea impacts in focus.
Ministry of Tourism	Since parts of PAs are used as National Parks and as tourism product and such Parks are now managed by the Ministry of Tourism as tourism attractions, the ministry of Tourism has a responsibility for contributing to the process of expansion of the network of PA's and for facilitating the institutionalization of such parks within the protected areas network.
Allied Agencies Coast Guard, Grenada Board Of Tourism, Grenada Ports Authority Environmental Health Div. NAWASA Etc.	Such agencies as Competent Authority or as facilitators of their ministries mandates will have roles and functions for security, safety, licensing of crafts, for quality control of water, quality control of products of BD and ecosystems functions.
Education institutions and centers of excellence	The local St. Georges University (SGU) and regional institutions such as University of the West Indies (UWI) and Caribbean environmental health institutes (CEHI) have considerable experience in application of monitor, measurement evaluation and response (MMER) initiatives with respect to landscape/ seascape impacts when they collaborated with various regional and international agencies for such purposes.
Special initiatives of collaboration Government – GCIC GOG: Government of Grenada	The initiatives where collaboration was made for responses toward climate change adaptation where- 1. GCIC/ GOG collaborated for the “outing” of GHG as refrigerants. 2. GCIC/ GOG collaborated for promotion of non- Fossil energy consumption (Solar panel use) by pre incentives to persons buying loans and equipment
National Water and Sewerage Authority	Collaboration with various competent authorities for the purpose of ensuring that the water source is adequately protected from threats that would compromise potable water quality.

54. The contributing stakeholders under the command and control of government will have their institutional roles and responsibilities, as well as the support of baseline, recurrent enabling services. On the other hand, it is anticipated that the non-governmental stakeholders will be driven by mechanisms that are collaborative. Furthermore, the co-management model although as yet in its incipient stage of application within the Grenada community could offer an opportunity for lessons learned. Indeed,

implementation of the Ridge-to-Reef project offers a significant co-management challenge that must consider the following in the context of co-management as a model that is only in its incipient stage:

- a. The Government's inter-sectoral co-management interventions could be made less challenging if the project is designed to offer opportunity for joint action; not merely at the Steering Committee level; but at the operational levels. The specific financial budgets should be creatively administered in collaboration with the relevant Government Competent Authorities and thus could be a powerful instrument for animating collaboration between and among agencies: CAs, CBOs/CSOs and NGOs.
- b. The project must sufficiently specify roles, responsibilities, obligations, beneficiaries and recipients as specific stakeholders; and stating the specific resources (financial and other) allocated to and/or for each category of stakeholder.
- c. An appropriate tracking must be applied throughout the project lifetime for recording and evaluating the co-management process and Best Management Practices, with Community-based "designed-in" tracking tools (TT),tailor-made and applied on the shorter term basis.
- d. Emphasis must be placed on education and awareness of both agents of Competent Authorities and NGOs/CBOs in joint informal interactive sessions with the objective of clarifying ideas such as *Sustainable utilization/ development, BD conservation and management, ecosystems functions services, Eco-assets, Green Economy, Livelihoods* in its widest sense, etc., since all stakeholders could benefit considerably from such education/awareness sessions.

PART 2: PROJECT STRATEGY

2.1 Project rationale and policy conformity

55. The Grenada "Ridge to Reef Project" is designed to support Grenada's compliance with a number of agreed-upon International Environmental Management and Conservation Strategies, Policies and Plans (e.g MDGs and Aichi targets and goals) with the technical and financial assistance of the Global Environment Facility (GEF). The project intervention is essentially a complement to the Government of Grenada's efforts, on the local level, to fulfill its obligations to various United Nations Conventions and Protocols (MEAs) with respect to Biodiversity and Eco-systems Functions/services by applying program-based delivery systems; and with co-management initiatives that will accommodate the involvement of local area communities in a direct way. This project is therefore designed to address the GEF STAR 5 strategy for SLM, SFM/REDD+ together with focal areas such as BD, LD and climate change mitigation (ECM). The project will uniquely co-program with concurrent grant-aid initiatives having similar goals and purposes.

56. In particular, the project directly addresses and is consistent with the outcomes and outputs of GEF Strategic Objective #1– to improve sustainability of protected area systems. The project will support the implementation of key aspects of the Grenada System Plan for Parks and Protected areas and the Grenada Declaration (COP8) to effectively conserve at least 25% of its marine and territorial ecosystems by the year 2020. This project will enhance the capabilities of Grenada with respect to institutional, regulatory, and policy-based Strategic Planning. It will also provide Grenada with financial support for various materials that enable the process. The project will expand and enhance the existing PA system in the country by increasing the number of TPAs from 8 to 9 (increasing the number of hectares from 1,931 ha. to 2931 ha.) and increasing the number of MPAs from 3 to 7 (increasing the number of hectares from

1,780 ha. to 13, 180 ha.). Furthermore, the project will support the incorporation of a number of mini PAs into the national network as a minimum cost output. The consolidation and expansion of the PA system will be enhanced by the project's support in reducing threats to BD by addressing habitat degradation and over-exploitation of biological resources within PAs.

57. The project will also address GEF Land Degradation Strategic Object 3 – Reduce pressures on natural resources from competing land uses in the wider landscape. The proposed project will contribute to arresting and reversing current trends in land and forest degradation and deforestation, focused on an area (the Beausejour Watershed) that has direct and significant negative impacts on ecosystem services in adjacent Protected Areas, through implementation of Integrated Watershed Management and application of sustainable agricultural practices that will prevent erosion and sedimentation entering coastal and near shore waters, will create livelihood benefits for local communities, and will conserve important terrestrial, freshwater and marine ecosystems.

58. The project will also address GEF SFM-REDD+ Objective 1 – Reduce pressures on forest resources and generate sustainable flows of forest ecosystem services, by reducing the threat of deforestation from fire, slash and burn agriculture, and encroachment by housing and tourism, and by increasing forest cover and carbon stocks through agro-forestry and the removal of invasive species.

59. The project will implement a “Ridge-to-Reef” approach that integrates BD, LD and SFM approaches, jointly implemented by government and local communities, and combines protection of biodiversity and habitats within a functional, representative and sustainable national system of terrestrial and marine protected areas with sustainable management of land and water resources in adjoining / upstream watersheds. In so doing, the project supports the Decision 11 / COP.10 of the UNCCD at its 9th Plenary Meeting in October 2011 that “encourages eligible Parties, taking into account the cross-sectoral nature of land degradation, to use existing potential to harness synergies across the Global Environment Facility focal areas in order further to reinforce the importance of sustainable land management for integrating environment and developmental aspirations globally.”

60. Finally, the proposed project supports the following goals *inter alia* of the 2004 CBD Programme of Work on Protected Areas: 1.2 To integrate protected areas into broader land- and seascapes and sectors so as to maintain ecological structure and function; 1.4 To substantially improve site-based protected area planning and management; 1.5 To prevent and mitigate the negative impacts of key threats to protected areas; 2.2 To enhance and secure involvement of indigenous and local communities and relevant stakeholders; 3.2 To build capacity for the planning, establishment and management of protected areas; 3.1 To provide an enabling policy, institutional and socio-economic environment for protected areas; and 3.5 To strengthen communication, education and public awareness.”

2.2. Country ownership: Country eligibility and responsibility.

61. The project is designed to be an instrument for the localization of agreed-upon International entitlements and obligations with respect to the conservation and management of BD and Ecosystems functions, goods and services. As such, it will be implemented in the context of national strategies and plans, or reports and assessment that have been sponsored by relevant conventions. The project is consistent with and will therefore support the goals of various National Development Policies in Grenada, including the *National Strategic Development Plan (2007)*, which proposes that environmental considerations should be integrally linked to national development, identifies the need to link livelihoods and environmental sustainability, and advocates for better enforcement of laws to protect biodiversity. In addition, both the *Tourism Master Plan (1997)* and the *National Environmental Policy and Management Strategy (NEMS, 2005)* recognize the need to strengthen Grenada's protected area system

through the establishment of additional PA sites and the consolidation of legal and institutional frameworks to manage the PA system.

62. The proposed project will directly support Grenada's efforts to comply with its commitments related to International Environmental Conventions. In promoting the conservation and management of the country's biodiversity, the project is consistent with the Government of Grenada's priorities as set out in the *National Biodiversity Strategy and Action Plan (NBSAP, 2000)*, of which the key objectives are: to provide broad-based support for conservation and sustainable use of biodiversity, to protect key ecosystems from negative human-induced impacts, and to develop and encourage sustainable utilization of biological resources that are essential to the livelihoods of local communities. The project also promotes the objectives of the *National Action Plan (NAP, 2006)* to support the *UN Convention to Combat Desertification*, including identifying the factors contributing to land degradation and the physical measures required to combat land degradation and mitigate the effects of drought, and the *National Climate Change Policy*, which identifies the need to address linkages between climate change and biological diversity. Other national policies and plans are also supported by this project, including Grenada's *National Forest Policy*, which emphasizes the role of forests in maintaining biological diversity, promoting soil and water conservation, and generating income through ecotourism activities, and the Government's *Grenada Forest Rehabilitation Project* which is undertaking re-vegetation of forested areas in the aftermath of Hurricane Ivan.

63. Finally, by strengthening and expanding the country's protected areas system, this project (along with the *Grenada Forest Rehabilitation Project* and a proposed GIZ-funded project) will be a key component of the Government's strategy to implement the *Grenada Protected Area System Plan (2011)*, and will assist Grenada to meet its obligations under the *Grenada Declaration*, a pledge made at the 8th Meeting of the Conference of Parties to the Convention of Biological Diversity in 2006 to effectively conserve at least 25% of its near shore marine area and at least 25% of its terrestrial area by 2020 as a means to contribute to the sustainable livelihoods for its people and to contribute to the world's biodiversity. It will also support Grenada's compliance with the Caribbean Challenge (2008), where the country pledged to legally protect 20% of near shore areas by 2020 via expansion and improved management effectiveness of its marine protected area system¹³.

64. The Ridge to Reef project is designed to enable Grenada to more effectively respond to conventions such as UNCBD, UNCCD and UNFCCC, while also supporting a body of local laws and regulations (SROs) that are outcomes of the various preceding Conventions and Protocols. Each of these national strategies, policy statements, plans, reports and assessments identify strongly and directly with livelihoods and with the conservation and management of ecosystem services and BD.

2.3 Design principles and Strategic considerations

UNDP's Comparative Advantage

65. The UNDP's comparative advantage for the GEF comes as a result of its global network of regional and country offices, its experience in integrated policy development and human resources development in Grenada and institutional and non-governmental and community participation specified in comparative advantage of the GEF agencies (GEFC .31 / 5 rev. I). The UNDP has formal engagements with the Government of Grenada for promoting, designing and implementing activities (based on multi-year cycles) consistent with the GEF mandate and the national sustainable development plans. UNDP has been identified as the appropriate GEF implementing agency by Government of Grenada based on its demonstrated experience working on multiple GEF BD projects. The program manager of the UNDP

¹³ Roberts, D (See Outcomes of the FSP Project Preparation Process (2013/14))

Barbados and OECS office in Barbados will continue to provide technical, financial, administrative and management support. In addition, the regional technical advisor stationed at the Regional UNDP/GEF office in Panama will continue to support the project throughout its implementation by offering assistance in the thematic areas of BD, LD and SFM-REDD+.

Coordination with Other Regional and Local Initiatives

66. The Grenada Ridge to Reef project is designed to seek for and accommodate co-financing / co-programming for planned activities, as niche financing, from concurrent projects at the regional or local level. Implementation of the proposed project will be carried out in coordination with several other projects, as described below:

67. Implementing Integrated Land, Water & Wastewater Management in Caribbean SIDS project (2012-2016) with GEF funding of US\$20.4 million. In Grenada, the lead agencies are the Ministry of Agriculture through the Land Use Division and the Forestry Department. Activities in Grenada will focus on: 1) Develop and apply national IW related indicators and strengthen the scientific basis for effective monitoring and assessment in the LD and related BD Focal Areas, by developing improved methods for multi-scale assessment and monitoring of land degradation trends, and for impact monitoring of GEF investment in SLM and ecosystem services maintenance; 2) Policy, legislative and institutional reforms and capacity building for IWRM / SLM, including reforms that address lack of financing and policy, tools and guidelines for the future sustainable use of water resources and sustainable forest management, waste-water management, and protection from drought; as well as coordination among relevant national sectors and strengthening and expansion of National Inter-sectoral Committees (NICs), harmonization with national plans, and implementation of programmes of cross-sectoral sensitization and awareness raising, along with training and capacity building in the identified national institutions and private sector; and 3) Knowledge Exchange, best-practices, replication and stakeholder involvement to identify and share best practices and lessons in relation to water resource management/use methodologies; consultative dialogues to ensure engagement of relevant policy, sectoral, local community and expertise (scientific, technical, etc.), ensuring input from local communities and associated structures (for instance fishers associations, farmers associations, NGOs, CBOs and local government).

68. Sustainable Financing & Management of Eastern Caribbean Marine Ecosystem Project: This GEF-WB-TNC project, launched in March 2012, has a total Budget of US\$19.4 million, including \$8.75 million from the GEF. Component 1 of the project, “Establishment of sustainable financing mechanisms”, will establish a Caribbean Biodiversity Fund (CBF) for participating OECS countries (Antigua and Barbuda; Grenada; St. Kitts and Nevis; St. Lucia; and St. Vincent and the Grenadines) with an endowment of at least US\$15 million to generate income for protected areas management, as well as national level trust funds (NPATFs) providing at least US\$1.5 million per year in total to the five participating countries by the end of the project. Component 2 of the project, “Strengthening and phased expansion of Marine Protected Area Networks”, will gazette at least five new marine protected areas and establish at least two demonstration sites to generate useful MPA management information and lessons for other countries in the Caribbean region. Component 3 of the project, “Deployment of a regional monitoring and information system” is intended to establish a database on status and trends in the protected area systems of the OECS countries, which could serve as a decision support tool to natural resource managers and policy makers. Although the emphasis of this component would be on Coastal and Marine Protected Area networks, the methods and indicators developed would be highly relevant to terrestrial protected areas. In Grenada, the Woburn / Clarke’s Court Bay Marine Protected Area has been selected as one of the two demonstration sites in which a suite of activities to enhance management effectiveness will be supported by the project. Specific activities will be selected during project implementation, but possibilities identified include: development of managed dive and snorkel sites; multiple use zoning and demarcation activities; education and outreach programs; capacity building at the community level for ecotourism; incentives for fostering partnerships with research institutions; and

Sustainable Development Action Plans (SDAPs). The Ridge to Reef project will complement this regional project by (i) supporting the development of management plans; (ii) expanding the national network of both new and existing TPAs and MPAs, and improving on-the-ground protection at those sites; and (iii) developing other PA financing options (e.g. visitor fees).

69. Grenada's Ministry of Agriculture, Lands, Forestry, Fisheries & Environment launched the Caribbean Aqua-Terrestrial Solutions (CATS) regional development cooperation program between CARICOM and GIZ in November 2013¹⁴. CATS acts as an umbrella program for two other regional projects as part of its efforts to aid the Caribbean region to effectively coordinate the support provided by various international development partners and NGOs. These are: "Improving the Management of Coastal Resources and the Conservation of the Marine Biodiversity in the Caribbean Region" and "Enhancing the Adaptive Capacity of Rural Economies and Natural Resources to Climate Change in selected Caribbean Small Island and Low Lying Coastal Developing States." The R2R project has been in contact with these two regional initiatives to determine the feasibility of coordinating complementary activities and identifying synergies. The two regional projects are anticipated to contribute to future planning exercises by the R2R project proponents. While initial discussions with these initiatives highlighted potential areas for synergies, further contact needs to be made between MoA, UNDP and GIZ to solidify the interaction and collaboration between these initiatives.

70. Furthermore, the SLM and SFM practices and Ridge-to-Reef approach for BD-LD conservation demonstrated in the Beausejour watershed will be promoted in other baseline initiatives, such as the ongoing re-vegetation of forested areas in the aftermath of Hurricane Ivan; the Programme on Integrated Adaptation Strategies in Grenada, which is implementing Climate Resilient Integrated Water and Coastal Resource Management activities; and the Strategic Program for Climate Resilience, which is undertaking reforestation and sustainable forest management activities. These projects, among others, are potential sources of co-financing or co-programming, and collaboration with each will be negotiated and written commitments will be sought with regards to their preparedness to co-program deliverables in tandem with the Ridge to Reef Program.

2.4. Project Objectives, Outcomes and Outputs and Activities

71. The project's **objective** is to ensure that biodiversity and ecosystems functions within and around marine and terrestrial PAs in Grenada are better protected from threats through the adoption of an integrated "Ridge to Reef" approach that increases PA management effectiveness and applies targeted sustainable land (and coastal sea) management practices, while ensuring ecosystems resilience to climate change. The project area includes the whole island territory of Grenada (344 sq.km. of landscape) sitting on a volcanic-coralline island shelf raised from the depths of the Atlantic Ocean to the East and the Caribbean Sea to the West. The island is divided into small districts called parishes that include St. George, St. Andrew, St. Patrick, St. John, St. David, St. Mark and Carriacou/ Petite Martinique. It is important to note, however, that there is no local Government in parishes. The Pilot project area in Outcome 2 includes a land space of about 1547 ha. within the Annandale/Grenville Vale/Beausejour watershed where special attention will be given for demonstrating Ridge to Reef natural resource management..

Outcome 1. Establishment and effective management of new and existing Protected Areas:

72. This Outcome is designed to support the implementation of key elements of the *Grenada System Plan for Parks and Protected Areas (2011)* aimed at establishing new, and improving management of existing, terrestrial and marine protected areas, and to help Grenada meet its commitments under the Caribbean Challenge to protect 25% of its near shore habitat and 25% of its terrestrial habitat by the year

¹⁴ <http://caribbeanclimateblog.com/2013/11/25/caribbean-aqua-terrestrial-solutions-launched-in-grenada-7-countries-to-follow/>

2020. The project is focused on sites that will enhance the representation of key ecosystems, based on a 2006 gap analysis study¹⁵ conducted on representative marine and terrestrial ecosystems and specified wildlife habitats, which identified the degree of representation of representative habitats within the existing and proposed protected areas and brought a structured and scientific conservation approach to the selection process (see Table 4).

Table 4. Existing and proposed representations of terrestrial and marine ecosystems

	Existing % Representation	Proposed % Representation*
Terrestrial Environments		
Transitional Cloud Forest	66	100
Cloud Forest	27	100
Evergreen Forest	25	49
Emergent Wetlands	22	48
<i>Grenada dove habitat</i>	11	71
<i>Dry Deciduous Forest</i>	1	27
<i>Semi-deciduous Forest</i>	2	15
<i>Drought Deciduous Forest</i>	1	19
Mixed Wood agriculture	1	10
Streams	5	17
Rivers	1	2
Fresh Water bodies	1	74
Marine Environments		
Seagrass	10	68
Mangroves	1	54
Intertidal reef flat	5	77
Leatherback nesting site	0	53
White sand beach	2	41
Rocky shore	4	43
Reef flat	1	33
Hawksbill nesting site	0	53
Shelf structure	2	40
Fore reef	2	53
Black sand beach	0	68
Lagoon habitat	0	38
Shallow terrace	0	35
Shoal	0	36

* Representation targets as stated in Grenada Protected Areas System Plan (Mel Turner, 2009).

73. Through this Outcome, the project will support the creation of an enabling institutional, legal, regulatory and policy environment for integrating principles of SLM and SFM / REDD+ and climate change adaptation so as to ensure that BD and ecosystems services are managed and conserved within and around existing and new PAs in Grenada. This Outcome will allow for the enhancement (where capacity already exists) and development (where gaps exist) of a legal planning and institutional (Strategic and operational management) framework for integrating SFM/REDD+ and SLM principles and practices within the national environmental and development policies. This refers to an integrated approach to managing forest ecosystems, landscapes and coastal seascapes, adaptation and prevention of LD, as well as the integration of peoples' livelihoods objectives within the programs for management of BD and ecosystems functions.

¹⁵ TNC/USAID (2006). Grenada National Protected Area System Gap Analysis.

74. Ultimately, it is expected that through this Outcome, the existing threats¹⁶ facing PAs such as encroachments and unplanned developments on landscapes, mining and pollution will be reduced over an area of 16,111 ha. in and around PAs with no net loss of forest area. It is also expected that through avoided deforestation, by legally establishing Mt. St. Catherine as a TPA, a direct Carbon sequestration benefit of 81,652 5tC will be achieved. Additionally it is estimated that direct carbon benefits from institutional strengthening from avoided fire damage, control of encroachments, and slash and burn agricultural practices at all TPAs should conserve total carbon stock of 322,158.3tC. It is further expected that there will be no net loss of mangrove, sea grass and coral reef areas within MPAs. Finally, there will be significant net increase in the representation of terrestrial and marine environments within Grenada's Protected Areas' system (sourced from Grenada Protected Areas Systems plan 2011). The specific outcomes and outputs defined for this project component include the following:

Output 1.1. An Institutional Framework for Protected Area System Management

75. At the *systemic level*, the project will strengthen the policy framework for PAs by formally establishing bodies to oversee terrestrial and marine protected areas and develop strategic plans for these bodies. The project will also support the finalization of draft laws and regulations to allow for effective management and enforcement of regulations and penalties to be applied at all PA sites, including regulations to authorize PA visitor fee systems and to ensure that those fees go into the National Trust Fund for PAs, as well as legal processes for including private lands in the PA system and/or buffer zones, including: 1) options for incorporation and/or acquisition of private land into new PAs; 2) compulsory covenants on identified critical ecosystems; and 3) co-management mechanisms with private land owners.

76. This Output will support a programmatic approach for the purpose of mending gaps identified in national policy and, thereby, support compliance with obligations to UN Conventions and Protocols regarding BD, SLM, SFM/REDD+, LD responses and CC mitigation, and with a focus on both global and local benefits of project activities. Strategic management will be enhanced for a network of PAs with their adjoining landscapes and seascapes by providing a functional policy-based and law-based National Parks Advisory Council for TPAs and strengthening of the National MPA Committee for Marine Protected Areas; each national body to be constituted by a wide range of relevant stakeholders.

77. To strengthen PA system finances, the project will establish a visitor fee system at PAs (building on information from a recent willingness-to-pay survey¹⁷ for Grenada's PAs), and will create a PA System Business Plan to plan for long-term revenue and spending. Capacity building for PA system management will be another priority. Building on the 2007 capacity assessment and development strategy for Grenada's PAs carried out by the OPAAL project¹⁸, the project will implement a training program for PA management authorities on revised policies/laws/regulations, integrated management approaches, and sustainable financing.

Output 1.2. A Legal and Regulatory Framework for Management of Protected Areas

78. The current legal and regulatory framework concerning Protected Areas in Grenada has several law-based gaps that prevent effective PA management. While Forestry management is currently administered through legislation such as: *National Heritage Protection Act* (1990), the *National Parks and Protected Areas Act* (1991) and the *Forest, Soil and Water Conservation Act* (1947) as well as a few Standing Rules and Orders (regulations), there is a need for more adaptive legislation to accommodate

¹⁶ Ecological and Socio-economic Conditions around PAs (S. Aucoin) and Ecological and Socio-economic conditions in the Beausejour Watershed (D. Roberts) as PPG Baseline Studies (2013/14). Detailed bibliographic references are provided in the corresponding Annexes to this ProDoc.

¹⁷ Constantine, S. 2011. Supporting Country Action on the Convention on Biological Diversity Programme of Work on Protected Areas: Willingness-to-Pay Study for Grenada. 82p. However, given the small, dispersed parcels of some areas, baseline studies determined that some areas might not be ideal for a traditional Visitor Fee scheme, and therefore need to consider other revenue-raising mechanisms as well, to be determined in the individual PA Business Plans.

¹⁸ OECS Protected Areas and Associated Livelihood (OPAAL), 2005-2011

better conservation of Biodiversity, better SLM, SFM/REDD+, LD and CC adaption principles and practices in TPAs. A draft bill: “*Protected Areas, Forestry and Wildlife*” as yet remains un-enacted, likely due to limited capacity to satisfy institutional requirements, among other reasons. Through this Output, the project will facilitate the thorough review, adaptation and enactment of this bill, taking into account current requirements. While the existing legal and regulatory provisions for MPAs are more complete than those for TPAs, they will also need to be reviewed and adjusted to ensure consistency with current requirements for active and effective management. This Output is critical to ensuring that clear policy is in place to guide and support the institutional strengthening in Output 1.1, including the development and administration of a Strategic Plan of Action for TPAs.

Output 1.3. Expanded Protected Areas System

79. The project envisions a long-term solution to the protection of BD and ecosystems functions through the implementation of strategic integrated management plans for TPAs and MPAs with their adjacent landscapes and seascapes. As a small island of about 133sq. miles/344 square kilometers, Grenada is able to accommodate a limited number of TPAs between 1544ha. and 8ha.; where island landscapes consist of micro-watersheds that directly impact island shelf seascapes; potable water sources are shared with farmers growing food crops scattered among several residential housing areas; and tree crops such as agro-forests on middle altitude landscapes are often threatened by agricultural expansion and forest fire and hurricane damage. Insufficiently managed “contested use” of landscapes and seascapes is a major challenge. Within this context, a PA network is being expanded where there are only 8 TPAs of more than 25 hectares; only three of these are legally established and have management plans; five others, although legally established, have no management plans. In Grenada, where 85% of lands are privately owned and much of the 15% Crown land is being allocated as opportunity for a large segment of the population to own residential plots, the hectares available for “green places, open spaces” (TPAs) is highly limited.

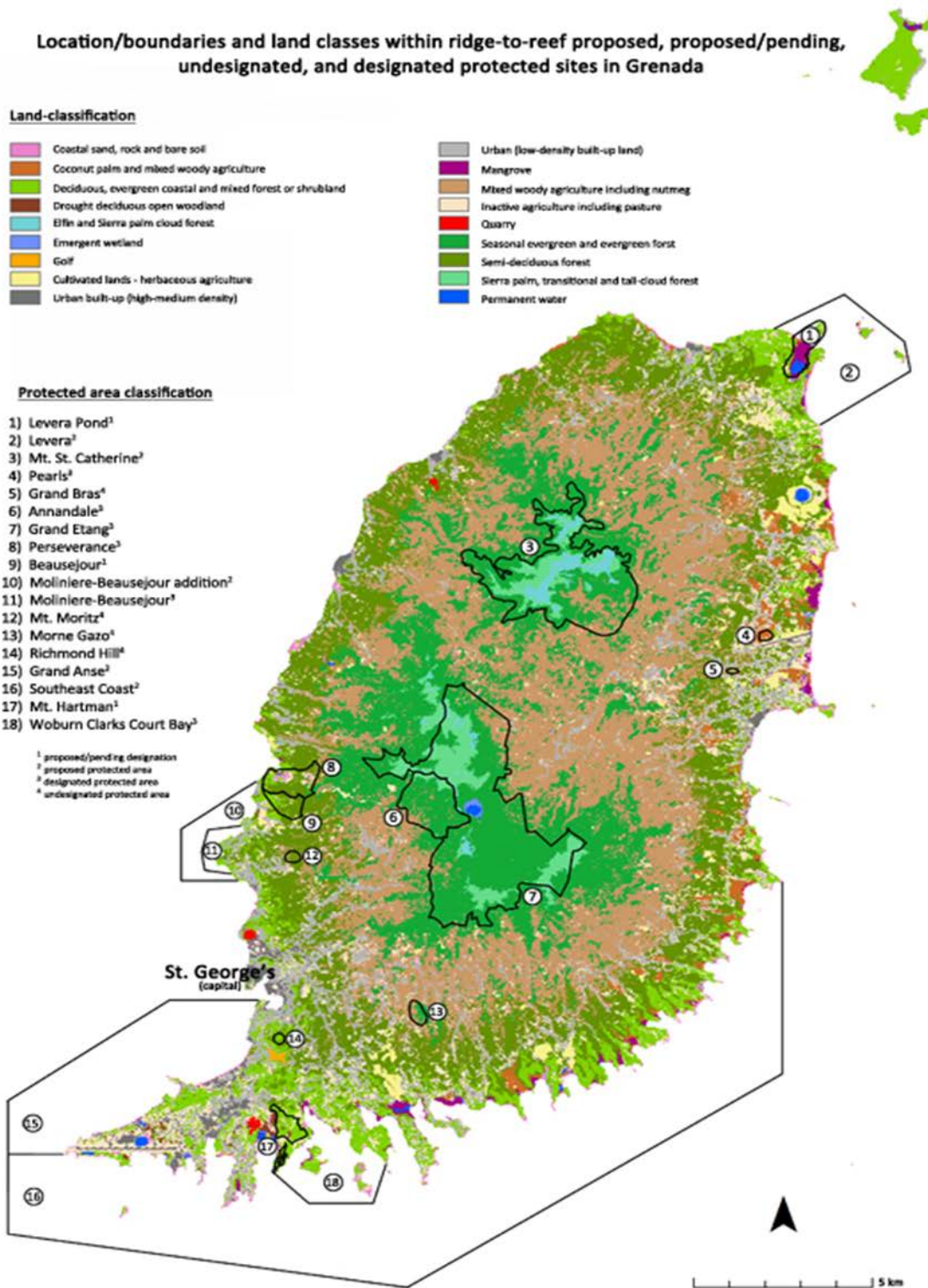
80. Consequently, the focus of the project at the PA site level would be to first work in the 8 existing and 1 new TPAs to convert them into 9 fully-functional TPAs, which together account for 5% of the landmass of Grenada; as well as 3 existing and 4 new MPAs for a total of 7 fully-functional MPAs. Four other micro-PAs are suggested for enhancements so as to boost the status of all as full TPAs in a complete network. Table 5 profiles the current classification/status at each of the 22 Ridge-to-Reef project sites and indicates their areal extent. Figure 3 identifies Ridge-to-Reef site locations (with their existing borders or projected boundaries) showing land classes and habitat types within and around project sites.

Table 5: Ridge-to-reef project site profiles

Official name / current designation / site status	Land (ha)	Sea (ha)	Total area (ha)	Source
Protected Area legally designated/established, approved management plan, actively managed				
Perseverance Protected Area ¹	113	-	113	Management plan
Grand Etang Forest Reserve	~1600	-	~1600	Management plan
Annandale Forest Reserve	236	-	236	Management plan
High North Forest Reserve	52	-	52	GPASP ²
Moliniere-Beausejour Marine Protected Area	-	60	60	Management plan
Woburn Clarks Court Bay Marine Protected Area	-	438	438 ⁴	Management plan
Pearls	-	-	TBD	GPASP ²
Proposed/pending designation active initiatives, draft management plan, in parliamentary process				
Beausejour Protected Area	60	-	60	Management Plan
Sandy Island/Oyster Bed Marine Protected Area	50 ³	737	787	Management plan
Mt. Hartman National Park and Protected Area ⁵	62	-	62	GPASP ² , PIF ⁷
Levera Pond Protected Area	65	15	80 ⁶	Management Plan
Undesignated protected area existing management activities, but no management plan; lacks legislative designation				
Morne Gazo	25	-	25	GPASP ²
Richmond Hill	8	-	8	GPASP ² , PIF ⁷
Grand Bras	4	-	4	GPASP ² , PIF ⁷
Mt. Moritz	8	-	8	GPASP ² , PIF ⁷
Proposed protected area priority area of interest established; projected initiatives				
Mt. St. Catherine	1000	-	1000	GPASP ² , PIF ⁷
High North addition	-	160	160	GPASP ²
Levera marine area addition	25 ⁸	725	750	GPASP ² , PIF ⁷
Moliniere-Beausejour marine area addition	-	240	240	PIF ⁷
White Island marine area	130 ⁹	1970	2100	GPASP ² , PIF ⁷
Grand Anse marine area	-	1500	1500	GPASP ² , PIF ⁷
Southeast Coast marine area	5 ¹⁰	6995	7000	GPASP ² , PIF ⁷

1. Revised name: Perseverance Protected Area and Dove Sanctuary (unofficial)
2. Grenada Protected Area System Plan (Turner 2009)
3. Includes southeast mainland areas of mangroves, Mabouya and Sandy islands
4. Excludes Hog and Calivigny islands; includes yacht mooring areas
5. Revised name: Mt. Hartman National Park and Dove Sanctuary (unofficial)
6. Includes Sugar Loaf Island and area between Sugar Loaf Island and Levera Beach
7. *Ridge-to-Reef Project Identification Form*
8. Includes Green and Sandy islands
9. Includes White, Saline, Frigate, and Bird islands
10. Glover Island

Figure 3: Proposed Areas of PA Expansion



81. In the new TPA (Mt. St. Catherine Reserve and National Park) and the 4 new MPAs (Grand Anse, Southeast Coast, Levera, and White Island), the project will carry out stakeholder consultations, baseline surveys, boundary demarcation to establish the PA units, as well as create and implement management plans for each site that include biodiversity conservation priority setting and strategies for PA co-management with local populations within and around the PAs. Mt. St. Catherine has 1000 ha. of

privately owned lands associated with it as well as another 2.2 thousand ha. of land earmarked for incorporation, thereby providing a minimum total area of 3.2 thousand hectares for landscape management by the Government. As such, the need for keen and deliberate application of BD, SLM, SFM/REDD+, LD and CC adaptation principles and practices is all the more important.

82. Furthermore, the management plans of selected existing MPA and TPA units (MPA: Moliniere/Beausejour; Woburn/Clarks Court Bay, Sandy Island/Oyster Bed; and TPA: Mt. Hartman, Morne Gazo, Perseverance, and Grand Etang/Annandale) will be revised to incorporate these same priorities.

83. Through Outputs 1.1 and 1.2, the project will support the development of enhanced institutional and legal provisions to cover this expanded Terrestrial and Marine PA network, including an appropriate Parent Act and regulations so as to allow for more adaptive responses in the management and conservation of the BD and ecosystems functions within and around PAs. The project will also establish basic infrastructure at new PAs, as well as enhance existing infrastructure at the target PAs, including the following:

- Interpretation centers at Moliniere/Beausejour and Sandy Island/Oyster Bed;
- Offices at Woburn/Clarks Court Bay;
- Trails and viewing platforms at Mt. Hartman and Perseverance;
- Interpretive center, trails and signage at Morne Gazo;
- Fencing and signage at Perseverance and Beausejour;
- Fish landing/sales facilities, moorings, nature trails observation deck and recreation/picnic area at Sandy Island /Oyster Bed.

Output 1.4. Management of Protected Area Units Institutionalized

84. This Output is designed to gradually mainstream PAs as a key instrument in a programmatic approach to the management and conservation of the BD and ecosystems function in Grenada. The small island character of the country, with its Ridge-to-Reef environmental impacts and contested use of landscapes and seascapes, calls for a unique programmatic response. Through this Output, the project accommodates the space-based approach to PAs where representations of the biodiversity would be protected using various tactics, such as area closures, season closures, resource use restrictions with regards to extraction and with full consideration for both traditional and ‘more-recent’ livelihood opportunities.

85. This Output recognizes the complexity of management of the BD and the ecosystems functions in PAs as they relate to the inevitable “contest” between the uses of landscapes as water source and the use of these same landscapes for farming crops and livestock. This contest exists throughout the whole island, which is primarily a vertically unprotected landscape composed of mini-watersheds providing the island’s water source, but impacted by wastes from farmers using self-produced tillage practices and applying fertilizers and pesticides that generate residues that seep down the landscapes and into seascapes. The contest between ecosystems service functions also shows up in the impact of two land-based point source outfalls of sewage on sea zones. Overall, the challenge to be dealt with through this Output is not merely a dilemma for choice of use of the landscapes and seascapes, either for utilization as water source or for farming, but as an optimization that minimizes threats to and impacts on the BD and ecosystems functions utilized by both of these and their maximized benefit for both at the same time. The project must therefore meet the objective of ensuring that biodiversity and ecosystem functions within and around MPAs and TPAs in Grenada are better protected from threats through the adoption of the Ridge-to-Reef approach, by recognizing that space-based PA management with consideration for adjacent landscapes must be coupled with ecosystems services-based management that sees the whole space-water source of the island as a PA.

86. The mainstreaming or institutionalization of a network of TPAs and MPAs into the annual recurrent programs that are budgeted for by Government will have to involve several planned activities that will be initiated within the project period and then accommodated within the Government's list of programs for continuation after project end. Such project activities include the formulation and establishment of a Coral Reef Resilience Program at a demonstration site at the Sandy Island/ Oyster Bed MPA. This activity includes a well-designed protocol for monitoring, measurement, evaluation and response (to identifiable impacts) involving centers of excellence such as CEHI, SGU, UWI, NAWASA, together with local area persons and the Competent Authorities for MPA management (Fisheries Division). Regional projects such as the GIZ funded *"Improving the Management of Coastal Resources and the Conservation of the Marine Biodiversity in the Caribbean Region"* and *"Enhancing the Adaptive Capacity of Rural Economies and Natural Resources to Climate Change in selected Caribbean Small Island and Low Lying Coastal Developing States"* are identified as potential co-programmers for this activity during the period that they are concurrent with the Grenada Ridge to Reef project.

87. To further support the process of institutionalization of the PA network, this Output will engage a Sustainable Forest Management initiative that focuses on the prevention of forest fires, management of 'slash and burn' practices of local area subsistence farmers, and national management of housing and other urban development, including tourism-based livelihood activities that uncontrollably encroach on forested landscapes. Since such threats are human generated, the project will engage both Competent Authorities for SLS, SFM and local stakeholders in addressing such problems. Additionally, NGO development agencies will be incorporated in the efforts toward remedying such community-based issues. The project will, therefore, intervene in local areas through community-based special interests groups (CBOs) such as the Grenada Federation of Agriculture and Fisheries Organization, the Grenada Chamber of Industry and Commerce and the Grenada Hotel and Tourism Association, among others. The NGOs whose charter and emphasis is to transfer skills, knowledge, competences and attitudes so as to facilitate development in local communities, with an emphasis on vulnerable persons, include GRENCODA, ART, SPECTO, PIA and the Grenada Red Cross Society. Organizations such as St. Patrick's Environmental and Cultural Tourism Organization (SPECTO) are capable of acting as both an NGO and CBO in the process. The project will incorporate Competent (Governance) Authorities with capacity to deliver Technical Assistance on behalf of Government, NGOs with capacity when provided with enabling financial and other resources, and CBOs with special interest in specific stakeholder communities, as recipients of technical assistance and enabling resource support for SFM initiatives.

88. Finally, crucial to the process of institutionalization of a national PA System is the training of staff with skills, knowledge, competencies and approaches for management of PA in the context of community-based co-management approaches at all the new and selected existing PAs such as: Moliniere/ Beausejour, Woburn/Clarks Court Bay and Sandy Island Oyster Bed MPAs together with TPAs such as Morne Gazo, Perseverance, Grand Etang and Annadale. Specifically, capacity for effective PA management will be strengthened through training of PA staff in biophysical monitoring, data collection and analysis; enforcement of regulations; and community co-management approaches, conflict management, and the establishment and operation of site level steering committees. Furthermore, the PA system in Grenada is moving towards a community co-management approach (Grenada's Forest Policy authorizes co-management for TPAs and existing MPA regulations are currently being revised to allow for community co-management of MPAs). For this reason, the project will undertake training of local community groups, associations (e.g. Fisher and farmer groups), and private sector partners (e.g. dive shops and tourism companies) in planning, monitoring and decision-making at all levels for PA units, including participation in site-level stakeholder management boards.

Output 1.5 Conservation and Sustainable Use of Natural Resources as a Means for Community Involvement in PA co-management

89. Through this Output, the project will use the conservation and sustainable use of natural resources as a means for community involvement in PA co-management. Using lessons learned in the project

“OECS Protected Areas and Associated Livelihood (OPAAL)” (2005 -2011), which implemented sustainable livelihood activities in communities around the Annandale and Grand Etang Forest Reserves, the project will empower community groups and stakeholders from villages adjacent to or within PAs to participate in the protection of biodiversity and ecosystem, functions. Three communities adjacent to MPAs and three communities adjacent to TPAs will be selected for involvement in various initiatives demonstrating co-management where local area persons engage in livelihood opportunities in the context of management of the resource they utilize.

90. At the communities adjacent to MPAs, the types of livelihood initiatives that will be facilitated by this Output include: Coral Reef Restoration and Propagation initiatives; Seaweed Aquaculture (building on previous training provided in Grenada); establishment of Fish Aggregation Devices (building on experience with existing demonstration FAD in Grenada) to enhance fishing opportunities for fishermen displaced through the creation of MPAs; and Community Scuba Diving.

91. At the communities adjacent to or within TPAs the type of livelihood and resource management initiatives that will be facilitated include: apiculture, tour-guiding, agro-processing, craft-making, sustainable use of NTFPs, and fire prevention and response through improved practices to avoid fire damage and reduce slash and burn agriculture. To facilitate these efforts, the project will establish partnerships with educational institutions and local NGOs to assist in capacity development and training, and will work with the Board of Tourism and other agencies to allow for certification of local inhabitants as service providers (guides; shops/booths etc.). As such, the project will enhance existing livelihood initiatives or enhance startups in a process where NGOs and CBOs in collaboration with relevant Competent Authorities would engage local persons involved in education and awareness exercises demonstrating principles and practices in SLM, SFM/REDD+, LD and CC adaptation.

92. Finally, the project will implement general public education programs on the value of PAs through various media (e.g. public service announcements, posters, brochures, flyers, signage, etc.) and outreach to school programs/science clubs, as well as specific programs targeting communities living within or adjacent to PA Units.

Outcome 2: Climate resilient SLM practices applied in the Beausejour watershed to reduce threats adjacent to and upstream of PAs

93. This Outcome focuses on reduced LD, improved Carbon stocks and enhancement of BD in the Beausejour watershed. Climate resilient technologies will be developed and implemented by local area communities (villages) on 1547 ha of the Beausejour watershed leading to improved habitat integrity in the Annandale Forest Reserve within the watershed and surrounding landscape as well as nearby MPAs. Figures 2.A-D depict the area to be covered, as well as its characteristics.

Figure 2.A Location of the Beausejour/Grenville Vale/ Annandale Watershed

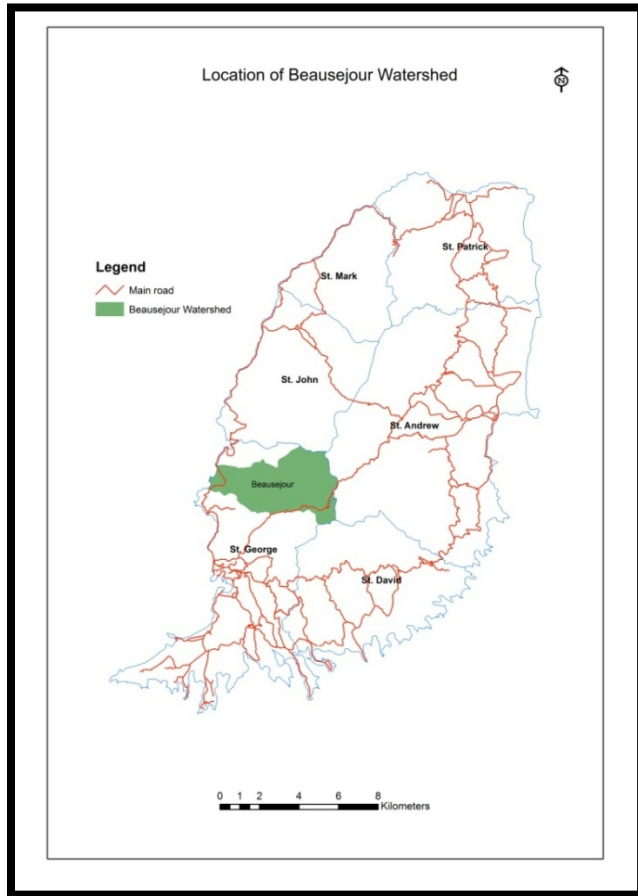


Figure 2.B: Land Use within the watershed of Beausejour

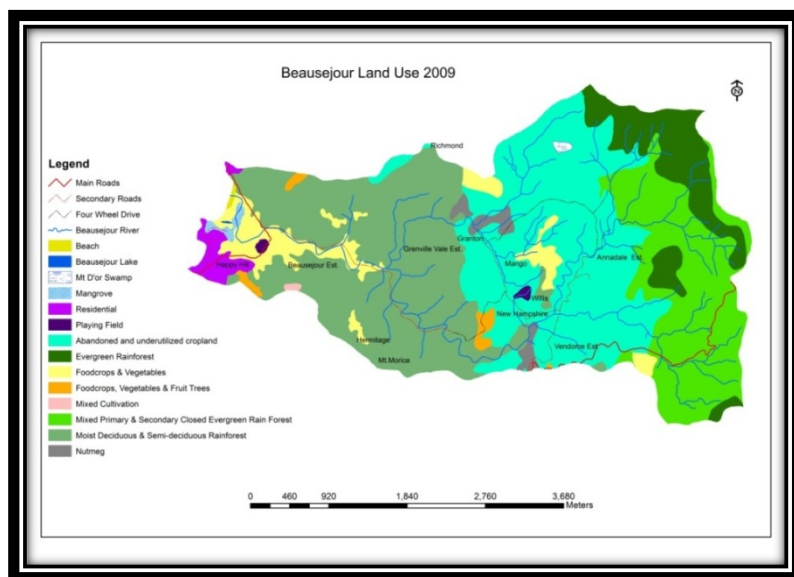


Figure 2.C: Soil map of the Beausejour Watershed

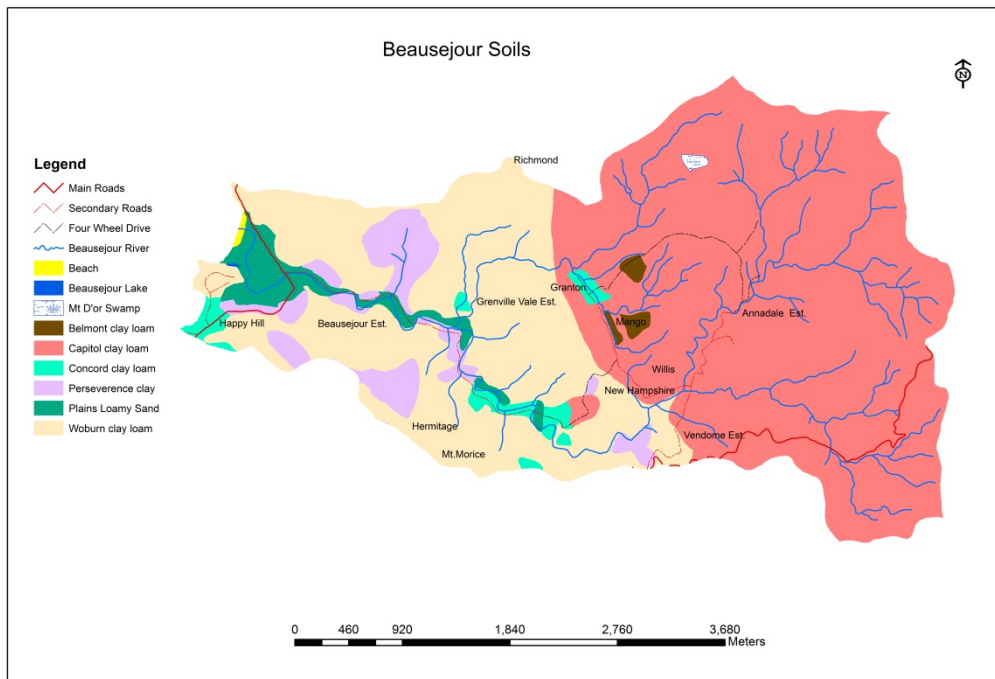
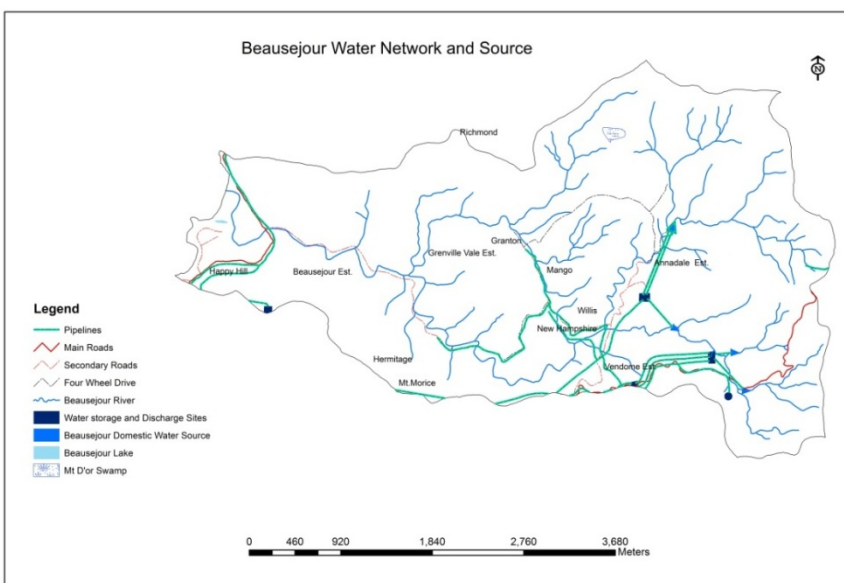


Figure 2.D Beausejour water network and source



94. It is anticipated that the initiative will reduce threats to ecosystems functions from encroachments, pollution, sedimentation and mining¹⁹. Additionally there will be direct carbon benefits due to reduced deforestation on at least 50% of private lands (337.3 ha) through enforcement of

¹⁹ Ecological and Socio-economic Conditions around PAs (S. Aucoin) and Ecological and Socio-economic conditions in the Beausejour Watershed (D. Roberts) as PPG Baseline Studies (2013/14). Detailed bibliographic references are provided in the corresponding Annexes to this ProDoc.

regulations on clearing steep slopes and riparian zones, thereby conserving total Carbon stock estimated at 9,613tC; as well as benefits expected from the enrichment of forest cover through enrichment planting (150 ha.) and removal of bamboo (40 ha.), thereby increasing Carbon stock by 4320tC. Furthermore, the indirect benefits through avoided deforestation of total carbon stock in all forests in the Beausejour watershed by watershed-level planning and management will result in an estimated 26,066tC. The project expects an impact that will also reduce sediment load and fertilizer/pesticide carriage by about 15%.

95. In terms of human impacts, the project is expected to promote the adoption of sustainable agricultural practices within 6 village level communities for preserving and conserving ecosystems and livelihood opportunities demonstrated by: (1) reduced levels of soil erosion on steep landscapes and (2) increased net household incomes.

Output 2.1. Strengthened planning and management framework, capacities and awareness for participatory sustainable resource management.

96. This Output will focus on strengthening the planning and management framework to implement SLM and SFM interventions in the Beausejour watershed, an area important for agricultural production, biodiversity conservation, the provision of drinking water, and rural livelihoods. An intersectoral committee will be set up as the first step in the co-management engagement process and will serve not only to guide in planning project interventions, but is also expected to carry over for responses in the post project period. This Inter-sectoral Committee for the Beausejour Watershed, including local community representatives, will be established to integrate planning and oversight of BD and SLM approaches in both the productive landscape and within PA units (this activity will be carried out in collaboration with ongoing efforts to establish a National Lands Agency in Grenada for coordination of land management). A plan of action for the Beausejour watershed planning and management will be elaborated and presented in order to acquire consensus on the existing needs and determine how each stakeholder group might contribute and what enabling resources are available to support the plan's implementation.

97. The Beausejour watershed has been severely degraded by unsustainable human resource misuse practices as well as by significant climate change impacts (hurricanes, droughts). Indiscriminate forest clearance, raising of livestock in riparian zones, fires, and high levels of erosion, pollution and fertilizer use have led to negative impacts on biodiversity and livelihoods not only within the watershed (including habitat for the endangered Grenada Dove), but also on downstream ecosystems and users (the watershed is a key source of drinking water for the southern half of the country). In particular, coral reef ecosystems within two MPAs (Moliniere/ Beausejour and Grande Anse) directly offshore of the watershed have been severely impacted by siltation, nutrient loading and pollution; these reefs account for a significant percentage of all coral reefs in Grenada and support livelihoods such as fishing, diving, and tourism excursions, etc.

98. To address the problems identified above, the Government of Grenada intends to take the "Ridge to Reef" approach to apply interventions from the high elevations of the watershed (where degradation is most severe) all the way to the offshore coral reefs, thereby increasing water availability, reducing soil erosion, maintaining forest cover, reducing fire risk, and preserving ecosystem services in the face of potential climate change impacts, while simultaneously strengthening the management effectiveness of the terrestrial PA within the watershed (Annandale Forest Reserve) and the two downstream MPAs. The guiding principle for this intervention will be a co-management approach aimed at capacity development and empowerment of people working towards the conservation and sustainable use of biodiversity and the maintenance of ecosystem goods and services for livelihoods, with government agencies and local communities jointly involved in the planning, monitoring and evaluation of activities in the watershed.

99. To accomplish this, the project will utilize lessons learned from the project “Capacity building and Mainstreaming of Sustainable Land Management in Grenada (2007-2011)”, which strengthened technical capacities of government staff in remote sensing, GIS, land degradation assessment and monitoring, and best practices for SLM in the agricultural sector; and trained farmers in land degradation issues and the application of SLM interventions. This project will differ from the SLM project in that it will focus on the generation of sustainable livelihood opportunities at the same time as promoting natural resource and environmental conservation. In addition, the project will utilize the results of the Land Degradation for Drylands (LADA) project to develop a national system for assessing and mapping land degradation, monitoring land degradation processes, and consolidating information systems and protocols.

100. At the national level, the National Forest Policy (NFP) will be updated to include targets and strategies for carbon sequestration, and existing draft legislation to support the NFP, as well as related statutory rules and orders for enforcement (including regulations for private forest lands), will be developed and enacted.

101. At the overall watershed level, the project will focus on strengthening planning and management frameworks, capacities and awareness for participatory sustainable resource management. Watershed level planning processes will be developed and training provided for resource managers in the Department of Forestry and National Parks and the Department of Fisheries in the use of software (ARC GIS or Google Mapping) for BD conservation (focused on endangered, endemic species), BD asset identification and mapping, sustainable agriculture practices, enforcement of BD conservation and SLM regulations, and understanding of potential impacts of climate change and possible mitigation and adaptation measures. Installation of water quality and quantity monitoring systems to record and collect real time data, and mechanisms to enhance coordination and information access, will strengthen water resource management capacity. Regulations to control development within the watershed will be developed and implemented, including protection of high priority habitat for endangered species and -areas prone to land degradation.

102. This Output will involve several types of stakeholder groups including local area farmers and sea users, CBOs, NGOs, land owners and various Government Competent Authorities in a co-management exercise demonstrate to the various local area villagers who depend on livelihoods from the resource base that it is highly cost effective, both in the short and long term, to collaborate with Competent Authorizes in the application of SFM / REDD+, SLM and CC adaptation principles and practices. This co-management engagement will demonstrate direct links between enhanced livelihood opportunities and collaborative planning for management of the natural resource base on which the livelihoods depends. Recognition of the critical role of private profitability will be designed into the project delivery system.

103. The CBOs that have direct vested interests in the area include the North East Farmers organization, the Grenada Federation of Agriculture and Fishers Organizations the North West Development Organization and the Mt. Moritz Community group and the Southern Fishermen Cooperative. These vested interest groups are the main potential recipients of support and main vehicles through which SLM REDD+ and CC adaptation technologies can be demonstrated within villages within the watershed. The NGOs that have considerable experience with groups within the watershed, could act as potential vehicles for facilitating education and awareness, training in various skills, knowledge competences and attitudes important to the co-management engagement process. The NGO agencies include the Agency for Rural Transformation (ART), Grenada GRENCODA, the Grenada Fund for the Environment and People in Action among others.

104. After having established a working engagement among the key stakeholders within the watershed, the project will work to generate consensus for the application of rules of conduct/sustainable land management practices that could later translate into law-based rules in use that clearly reflect the

rule-making efforts of co-managers. The rule-making exercises will relate to, but not limited to sustainable expansion in agriculture and housing and with recognition of the impact of human livelihoods on the BD and especially for those habitats within the area vulnerable to both human and natural threats. The support of the policy instruments of Central Government will have to be clearly demonstrated through an updating of the National Forest Policy in a participatory manner, and the enactment of more adaptive law and regulations that place effective controls on the utilization of forested landscapes, specifically through demonstrating to villages within the watershed how the application of SLM, SFM/REDD+ principles and practices could generate carbon sequestration benefits that would have both local area and global values.

105. The considerable benefits from the application of SLM, SFM/REDD+ and CC adaptation practices and principles tailored by local area villagers while applying home grown rules of conduct will also fully support science-based needs research. To achieve this purpose, the project will implement a watershed-wide water quality protocol for monitoring, measuring, evaluating and responding to the state of run-off with regard to potable water and sedimentation and where the local area community will work together with Centers of Excellence in the effort over the five (5) year project period and beyond. The potential science-based agencies that could contribute to planning for and implementation of the water quality protocol include: The Caribbean Environment Health Institute (CEHI), the University of the West Indies, St. George's University, and the National Water and Sewage Authority, which has considerable working experience with point-based measurements of water quality in Grenada's water source. The co-management approach for applying this protocol will maximize benefits when local area persons participate in the ongoing MMER exercises and when an arrangement is made to involve local area villagers in the direct evaluation and response aspects of the process. The evaluation and response within the MMER exercises will be made most effective when fullest recognition is given to demonstrating how farming and land based practices impact on the quality of the MPA habitats on the downstream seascapes with time.

106. Finally, the project will undertake awareness raising on sustainable agricultural practices, including documentation of traditional knowledge and best practices demonstrated through the project, and will support curriculum enhancement for schools and science clubs; the project will examine the replicability of watershed management based on lessons learned in Output 2.2's pilot interventions in the Beausejour watershed.

107. Later in the project, offset benefits will be achieved through increasing PA management effectiveness as SLM and SFM activities in the watershed reduce pressures on the Annandale Forest Reserve and the Moliniere / Beausejour and Grande Anse MPAs. Under Output 2.1, the project will create to plan, monitor and adapt land management across the watershed. The watershed management plan (covering 1,547 hectares) will identify various LD risks and vulnerability areas within the watershed; plan the appropriate avoidance, reduction, rehabilitation and offset approaches; explore financing options for these approaches; and serve as a mechanism to replicate the community level demonstrations throughout the watershed.

Output 2.2 Improved SLM and SFM practices in 6 communities resulting in reduced deforestation and land and forest degradation in the landscapes surrounding PAs.

108. This output is designed to provide replicable *in situ* demonstrations of responses to a number of compounding threats relating to deforestation and deterioration in the integrity of steep landscapes due to increasing exposure of soils caused by the effects of a series of annual forest fires and the impacts of recent hurricanes. As a result of these natural hazards, the forested vegetation is only regenerating with low shrubs and grasses appearing as "sores" on landscapes with scattered forest cover. This "natural destruction" of forested cover is exacerbated by changes in farming practices from tree crops agro-forestry to cash crops, and where tillage practices pose direct threats to both forest cover and integrity of soils. The Output's responses to threats will therefore use three activities that will couple the economic

livelihood interests of farmers/sea users and with land owners' interests coupling with the vested interest of Competent Authorities, for the management and conservation of the BD and Ecosystems Services. The co-management approach will again focus on Integrated Natural Resource Management SLM/ SFM / REDD+ SLM and CC adaption practices that engage local area persons' economic vested interests in 6 communities with those of stewardship of the BD and ecosystem services within the watershed and including the TPA and MPA.

109. The field-level interventions will focus on six communities (Beausejour, Happy Hill, Granville Vale, New Hampshire, Annandale and Vendome), covering an area of 1,019 hectares. These communities were selected based on: (1) proximity to and impact on degradation of habitat and ecosystem services in protected areas (the Annandale Forest Reserve within the watershed and/or the two MPAs downstream of the watershed), particularly soil erosion, sedimentation and forest encroachment; (2) potential benefits for local livelihoods; and (3) community capacity and/or experience with previous conservation activities. Interventions using sustainable agricultural practices are intended to reduce negative impacts on biodiversity, to minimize land degradation, erosion and deforestation, and to create sustainable alternative livelihood opportunities for local inhabitants.

110. In the short-term, the site level work in the six communities will test and demonstrate different avoidance, reduction and rehabilitation work under the auspices of Sustainable Agricultural Production, including: soil conservation practices (use of vegetative strips; cover crops; contour farming; minimum soil tillage); water management practices (rain water harvesting; improved drainage and storm water control); and sustainable soil enrichment practices (increased use of organic matter; reduced use of inorganic fertilizers) in an area of up to 132.4 hectares of existing cropland (as well as some currently abandoned agricultural land) and with the participation of up to 400 farmers. Activities in these communities will also include apiculture (introduction of improved breeding stock; procurement of 250 hives for sale to beekeepers) with up to 50 participants. Sustainable livestock management will focus on protection measures for riparian zones (up to 210 hectares), including assessment of grazing impacts/carrying capacities; fencing; and monitoring and enforcement of grazing regulations. Sustainable forest management practices will include the re-vegetation of 150 hectares of highly-degraded land (where forest cover was almost completely removed by hurricane impacts) with enrichment planting using agro-forestry crops (recommended plant species include nutmeg, cocoa, mangoes, soursop, sugar apple, breadfruit, breadnut, coconuts, cinnamon, clove; governor plum, pommerac, pommecytherre, bois bande, passion fruit, pineapples and pomegranate). Seedlings produced by local nurseries will be planted and local community members and DFNP staff will be trained to maintain and monitor the re-vegetation processes; in some places, activities also will include the removal of invasive alien species (e.g. Bamboo) that have colonized degraded areas. Other SFM interventions will include rehabilitation with native forest species following the removal of invasive bamboo (in both PAs and private lands); fire prevention and control; and restrictions on slash and burn agriculture.

111. All site level activities will include capacity building for farmers and farmer organizations, product development for export compliance, and marketing assistance. The project expects that this assistance will result in an increase in income statistics for these communities²⁰, currently registered as follows:

²⁰ Statistical data is provided on gross income from 2013 for each of the 6 communities participating in these pilots. However, the data does not specify the income of farmers, a sector expected to show increased revenue through the adoption and application of SFM/SLM/INRM practices through the project's interventions. In-depth research is needed to provide this level of detail for the baseline as well as tracking throughout the project to show impact/benefits from SLM and SFM practices on farmers' incomes. The MoA partnered with UWI 2 years ago to implement the LD assessment methodology; however, the tools used were very simple and user friendly and probably would not provide the kinds of evidence-based data needed. The project can partner with UWI, CEHI and the Department of Public Health at St. George's University to help develop this. Development of the research proposal should therefore be a key activity in the first year to guide the collection of baseline data.

Income Statistics for 6 Communities in the Beausejour Watershed²¹:

Gross Income	Village						Total
	Happy Hill	Beausejour	Grenville Vale Estate	Annandale	New Hampshire	Vendome	
<200	1	1	0	0	5	0	7
200-399	2	5	0	2	23	3	35
400-799	24	27	5	10	50	34	150
800-1,199	23	31	13	22	62	35	186
1,200-1,1999	47	36	9	10	53	39	194
2,000-3,999	31	22	10	9	35	44	151
4,000-5,999	5	7	3	2	7	5	29
6,000+	2	2	0	1	1	0	6
Not Stated	174	69	11	50	133	34	471
Total	309	200	51	106	369	194	1229

112. In addition to providing livelihood opportunities for participating farmers, the aforementioned activities will increase water infiltration, percolation, retention and gradual release, thereby promoting soil and water conservation, reducing siltation, and contributing to improved quality and quantity of water for human use. Furthermore, aquatic life in streams will benefit from increased water flows, while coral reefs and other downstream marine ecosystems will benefit from reduced sedimentation and pollution from land-based sources, thereby also generating BD benefits.

113. The first of the three activities will implement an initiative that would enhance Sustainable Agricultural Production, recognizing that farmers are usually most interested in improving livelihood opportunities from the economic activities that they are most familiar with: agriculture. This engagement with farmers will demonstrate cost-effective soil enrichment, water management and apiculture and including capacity building for farmers and the farmer and fishers organizations, and for further enhancement and value-added for farmers and fishers production product development and marketing techniques will be communicated and shared; and the gains of coupling of traditional ecological (and local) knowledge with science based SLM, SFM/REDD+ and CC adaptations, principles and practices will be exploited for the purpose of enhancing production and household incomes within the watershed. Fortunately the Grenada Federation of Agricultural and Fisheries organization, an apex body and Grenada Marketing and National Importing Board (MNIB) have been engaged in collaborative initiatives with farmers in the recent past. Additionally the OCES Protected Areas and associated livelihoods (OPAAL) project (2005-2011) established engagements with farmers and fishers within the Beausejour watershed.

114. The second of the pilot initiative with co-management activities is to involve local area stakeholders in Sustainable Rangeland Management where adverse impacts of animal farming are mitigated for. The pilot will focus on the unsustainable management of animal grazing for annual corralling within the watershed. The project will be responding to the issues of grazing on the steep landscapes and pig farms, normally placed on the river banks, leaking wastes into the streams and Main River. There will be an engagement with farmers that would plan mitigation measures in the context of SLM, SFM / REDD + and CC adaptation principles and practices in order to manage and conserve the BD and ecosystems systems. This effort will necessarily require the involvement of several units of the Ministry of Agriculture, notably Extension services and Veterinary, for education and awareness and also for generating response options from the farmers themselves.

²¹ Data for 2013 provided by the Office of Central Statistics.

115. The third initiative project activity is geared to implement a Sustainable Forest Management (SFM) initiative that would involve communities in an integrated suite of agro-forestry interventions. Agro-forestry is considered as a most appropriate tool for responding to the existing natural and human threats to BD and sustainable management of ecosystems services. Agro-forestation within the Beausejour watershed is critically needed for mitigating the depletion of forest coverage on steep landscapes. The project response will facilitate reforestation using useful economic forest crops that are of interest to farmers in that they would generate livelihood benefits; this option is considerable versus the natural regeneration of forest coverage which will be very long term and risk prone. The project is designed to provide nursery seedlings of native species while avoiding invasive species such as the pervasive bamboo. An integral remedy as response to Threats to Biodiversity and Ecosystems Services in the recent years is the Woodland Fire Prevention and control activities needed at the village level. This third activity will engage community persons and persons from Competent Authorities in collaborative training and then delivery of outputs.

116. Over the long-term (post-project), it is envisaged that site-level activities will be implemented throughout the entire watershed based on the watershed management plan, and up-scaling of such activities throughout the country will be enabled. The SLM and SFM practices and Ridge-to-Reef approach for BD-LD conservation demonstrated in the Beausejour watershed will be promoted in other baseline initiatives, such as the ongoing re-vegetation of forested areas in the aftermath of Hurricane Ivan; the Programme on Integrated Adaptation Strategies in Grenada, which is implementing Climate Resilient Integrated Water and Coastal Resource Management activities; and the Strategic Program for Climate Resilience, which is undertaking reforestation and sustainable forest management activities.

Global Benefits:

117. This project will result in ecological sustainability of terrestrial and marine ecosystems, which will result in enhanced quantity and values of ecosystem goods and services, including: shoreline maintenance, storm protection, soil protection, water provision (quality and quantity), flood control, carbon sequestration, tourism attractions and increased resilience and self-repair of ecosystems from other stresses, such as increased sea temperature. The project will provide direct benefits for endangered species, e.g. the endemic Grenada Dove (*Leptotilax wellsi*) and six species of marine turtles (Green, Leatherback, Loggerhead, Hawksbill, Kemps Ridley and Olive Ridley) found in Grenada's waters. A more detailed analysis of global environmental benefits is provided in the table below.

Table 5: Demonstration of the impact of alternative interventions within PAs

Current Situation	Alternative to be put in place by the project	Selected environment benefits
1. Protected areas		
PA expansion and management: PA Estate exists and slated for expansion, but subject to various constraints to effective management: <ul style="list-style-type: none"> Diffuse and poorly coordinated authority over protected areas (existing PAs managed by one government and two non-governmental agencies), reducing public awareness about PAs; limiting the pooling of resources, information and training; and creating uncertainty regarding the objectives and management structure for any new PAs (including options for community co-management) 	<ul style="list-style-type: none"> Strengthened management and coordination through establishment and operation of National Parks Advisory Council for terrestrial PAs and Management Committee for marine PAs Increased financing for PA management through development of PA System Business Plan Strengthened protection from approved "Protected Area, Forestry and Wildlife Act" and associated Statutory Rules and Orders Expanded Protected Areas system: 1 new 	BD: <ul style="list-style-type: none"> Establishment of 1 new terrestrial PA (Mt. St. Catherine National Park) covering 1,000 ha. and 4 new marine PAs (Grand Anse, Southeast Coast, Levera, and White Island) covering 11,400 ha. Strengthened management of 4 existing terrestrial PAs (Mt. Hartman; Morne Gazo; Perserverance; Grand Etang) covering 1,931 ha. and 3 existing Marine PAs (Moliniere /

Current Situation	Alternative to be put in place by the project	Selected environment benefits
<ul style="list-style-type: none"> • Lack of specific regulations for PA management, including regulations to authorize the collection and retention of user fees, to establish a centralized authority for PA management, or to implement conservation measures (e.g. controls on overfishing visitor activities/damage, and mining) • Lack of enforcement capacity, particularly for mining (high elevation areas and beaches) <p>Insufficient PA financing and dependence on government appropriations</p>	<p>Terrestrial PA unit and 4 new Marine PA units demarcated and legally established, with management plans and infrastructure in place</p> <ul style="list-style-type: none"> • Increased capacity from PA staff trained in planning, accounting, biophysical monitoring, enforcement, and co-management approaches • Community involvement in PA co-management (e.g. coral reef restoration / propagation initiatives; seaweed aquaculture; Fish Aggregation Devices (FADs); beekeeping, tour guiding, agro-processing, sustainable use of NTFPs, and fire prevention and response) 	<p>Beausejour; Woburn / Clarks Court Bay; Sandy Island / Oyster Bed) covering 1,780 ha.</p> <ul style="list-style-type: none"> • Protection of ecosystem goods and services within PAs, including: shoreline maintenance, storm protection, biodiversity habitat, fish stocks, tourism attractions, soil protection, water provision (quality and quantity), flood control, carbon sequestration, and increased resilience and self-repair of ecosystems from other stresses e.g. increased sea temperature • Protection of globally significant biodiversity, including the endangered, endemic Grenada Dove (<i>Leptotilawellsi</i>) and six species of marine turtles (Green, Leatherback, Loggerhead, Hawksbill, Kemps Ridley and Olive Ridley) <p>SFM: Carbon sequestration through avoided deforestation</p> <ul style="list-style-type: none"> ○ Direct carbon benefits: Avoided deforestation through legally establishing Mt. St. Catherine PA and reducing pressure on forests conserves total carbon stock of 81,652.5 tC ○ Indirect carbon benefits: Institutional strengthening on fire management, and control of encroachment and slash and burn agriculture, avoids deforestation at all terrestrial PAs conserves total carbon stock of 322,158.3tC
2. Production Landscapes		
<p>Land Use planning: Lack of any land use planning in the watershed, and limited implementation of existing regulations, leading to:</p> <ul style="list-style-type: none"> • Fragmentation and destruction of forests, primarily due to encroachment from expanding agriculture and human settlements • Degradation of coastal / marine ecosystems (coral reefs, mangroves, seagrass beds) from upstream sources of pollution (sewage outflows) and sedimentation (construction of housing) • Indiscriminate mining and quarrying activity impacts forest ecosystems 	<ul style="list-style-type: none"> • Regulations developed and implemented to prevent spread of agriculture and housing, including protection of high priority BD habitat and areas prone to land degradation • Inter-sectoral Committee for the Beausejour Watershed established and implementing watershed management plan with integrated BD-LD approaches • Water quality / quantity monitoring systems, with associated tools to enhance coordination and information access, in place to monitor sediment and pollution impacts on downstream MPAs • Selection of appropriate lands / land use types and practices through assessment 	<p>LD:</p> <ul style="list-style-type: none"> • Direct benefits over the medium up-scaling of demonstration SLM practices, reduces soil erosion, pollution and forest clearance covering 6 communities with a total area of 1,409 ha. • Indirect benefits over the medium to long term from reduced pressures from conflicting land use and replication of SLM across the entire Beausejour Watershed covering 1,547 ha.

Current Situation	Alternative to be put in place by the project	Selected environment benefits
<p>Rangeland management:</p> <ul style="list-style-type: none"> • Uncontrolled cattle grazing, particularly along rivers and gullies, causes pollution and sedimentation of coastal / marine ecosystems (coral reefs, mangroves, seagrass beds) 	<p>processes</p> <ul style="list-style-type: none"> • Fencing • Assessment of grazing animal capacity in relation to LD risk and vulnerabilities near rivers • Enforcement of regulations on grazing 	<p>LD:</p> <ul style="list-style-type: none"> • Direct benefits through reduced sedimentation and pollution in riparian zones covering approx. 210 ha. (to be confirmed during project preparation) • Indirect benefits over the medium to long term through replication of grazing management across the entire Beausejour Watershed covering 1,547 ha. <p>BD:</p> <ul style="list-style-type: none"> • Reduced sedimentation and nutrient loading impacts on coral reefs, mangroves and seagrass beds in two downstream MPAs (Moliniere / Beausejour and Grande Anse) covering a total of 1,800 ha., with benefits for marine biodiversity (as listed above) • Reduced grazing pressure on Annandale Forest Reserve covering 240 ha.
<p>Agricultural Land management:</p> <ul style="list-style-type: none"> • Agricultural practices (detailed below) in upstream areas leading to degradation of coastal / marine ecosystems (coral reefs, mangroves, seagrass beds), exacerbated by climate change impacts (increased hurricane frequency & intensity). These include: • Sedimentation from clearing of steep slopes for agriculture, the removal of riparian buffers for farming close to riverbanks, and the removal of trees on roadsides • Fertilizer use contributing to pollutant loading in runoff following rains; use of harmful chemicals and pesticides that negatively impact fresh and coastal waters • Burning of agricultural waste and setting of fires to clear land threaten forest ecosystems, including the edges of protected areas 	<ul style="list-style-type: none"> • Sustainable agricultural production practices, including: <ul style="list-style-type: none"> ○ Soil conservation practices (use of vegetative strips / cover crops; contour farming; terracing; minimum soil tillage) ○ Water management practices (rain water harvesting; improve drainage and storm water control; small dam construction for water management) ○ Sustainable soil enrichment practices (increased use of organic fertilizer from livestock pens; reduced use of inorganic fertilizers) ○ Apiculture to increase community incomes and provide benefits to other commercial tree species (e.g. Citrus, Mangoes and Coconut Palm) by enhancing pollination, including planting of tree species (e.g. Leucaena and Gloryceda) that support bee cultivation and also help to stabilize soils • Capacity building for farmers and farmer organizations, product development for export compliance, and marketing assistance, to support sustainable agricultural production 	<p>LD:</p> <ul style="list-style-type: none"> • Direct benefits through reduced soil erosion, pollution and threat of fire, and increased water quality and flow covering a total of 132.4 ha. • Direct benefits through re-vegetation (agro-forestry) covering an area of 150 ha. • Indirect benefits over the medium to long term through replication across the entire Beausejour Watershed covering 1,547 ha. <p>BD:</p> <ul style="list-style-type: none"> • Reduced sedimentation, pesticide runoff and nutrient loading impacts coral reefs, mangroves, and seagrass beds on two downstream MPAs (Moliniere / Beausejour and Grande Anse) covering a total of 1,800 ha., with benefits for marine biodiversity (as listed above) • Reduced agricultural expansion into Annandale Forest Reserve covering 240 ha.

Current Situation	Alternative to be put in place by the project	Selected environment benefits
Sustainable Forestry Management: <ul style="list-style-type: none"> • Invasive species (bamboo) is encroaching into native forests • Severe fire impacts (in 2009-2010, 30% of the Beausejour watershed was destroyed by fire) • Erosion impacts on forests from planting of crops and grazing on steep slopes within and around forest areas • Deforestation due to encroachment of housing and tourism facilities, as well as slash and burn agriculture 	<ul style="list-style-type: none"> • Enrichment planting using agroforestry crops on steep sloping land and hurricane-damaged areas • Rehabilitation with native forest species following removal of invasive bamboo (PA and private lands) • Fire prevention and control • Restrictions on slash and burn agriculture • Expanded capacity of existing forestry nurseries • Local community members and DFNP staff trained in SFM, including enrichment planting, maintenance and monitoring, NTFP management 	SFM: Carbon sequestration through avoided deforestation and through removal of invasive species and reforestation <ul style="list-style-type: none"> • Direct Carbon Benefits: <ul style="list-style-type: none"> • Avoided deforestation on at least 50% of private forest lands (337.3 ha.) through enforcement of regulations on clearing steep slopes / riparian zones conserves total carbon stock of 9,613 tC • Increase of forest cover through enrichment planting (150 ha.) and removal of bamboo (40 ha.) increases carbon stock by 4,320 tC during project lifetime • Indirect Carbon Benefits <ul style="list-style-type: none"> • Avoided deforestation of total carbon stock in all forests in the Beausejour watershed by watershed-level planning and management: 26,066.1tC

2.5 Key Project Indicators, Risks and Assumptions

118. Project indicators are detailed in the Results Framework, which is included in Section 3 of this Project Document. The risks that might prevent or hinder the project from achieving its objective are presented in Table 6.

Table 6: Risks Facing the Project and Risk Mitigation Strategy

Risk	Risk Level	Risk Mitigation Strategy
1. Limited Government readiness for SFM/REDD ⁺	M	While there is evidence of institutional weaknesses regarding SFM/REDD ⁺ (e.g. limited staff at the forestry department), the recent initiatives of OPAAL (2005-2011), where collaboration was forged with farmers groups in the pilot area, indicate good prospects for capacity enhancement that would specifically benefit SFM/REDD ⁺ practices on landscapes. The Project will offer opportunity for long-term forest management through training in technologies and methodologies and with enhanced experience in co-management. This will, in turn, complement the longer-term process of the REDD ⁺ strategy to improve readiness and institutional capacity for SFM/REDD ⁺ , LD and BD management and conservation.
2. Climate change exacerbates the effects of inappropriate land-use practices	H	Climate Change, through increased hurricanes and severe dry and rainy seasons, exacerbates the impacts of fragmented 'slash and burn' agriculture by increasing flooding and degradation of steep slope landscapes, oftentimes hampering natural regrowth. While the ecosystem recovery from these practices is more difficult because of the impacts of CC, the Project will engage in SLM and SFM measures that will help mitigate these effects. Re-vegetation and coral reef, mangrove and forest conservation activities will contribute to reducing the impacts of hurricanes on ecosystem services and human infrastructure (through coastal protection). Specifically, the Project will implement an agro-forestry program using drought resistant plants to recover these bare landscapes and increase resilience to climate change impacts, while offering prospects for farmers and landowners to earn an

Risk	Risk Level	Risk Mitigation Strategy
		income from the tree crops generated from these efforts. The Project will engage local area farmers and landowners in a number of LD, SLM, SFM/REDD ⁺ and CC adaptation practices with a special focus on monitoring water quality for its potable qualities and also for sediment loading. As a co-management exercise, the Project will also demonstrate the benefits of the SLM and SFM practices accommodated by land and sea users on the quality of water within the watershed and MPA over the project's lifetime.
3. Marine and terrestrial ecosystems are not sufficiently resilient and their biological and physical integrity is compromised by the effects of global and regional climate change	M	The existing and proposed terrestrial and marine PAs together will be large enough, and encompass enough different types of ecosystems, to sustain biodiversity and ecosystem services even in the face of climate change impacts such as gradually increasing temperatures, increased hurricanes, and droughts.
4. Uncertainty concerning sea-use management in the near-shore sea zone	L	The Project will support policy, institutional and pilot activities to ensure that BD and ecosystems functions in and around PAs are protected against threats related to "land-sea" leasing practices for building marinas, and will address issues of sea-use from the perspective of bio-impacts as well as quality of coastal ecosystems services. Increased capacity and institutional strengthening through the Project will enhance the management effectiveness of marinas and MPAs alike in order to lower the risks related to sea-use in the near-shore sea zone.
5. Lack of an effective formula for incorporating private lands into the PAs network	M-H	Mt. St. Catherine has been deemed to have strong potential for either a restrictive land development control (LDC) model or a co-management model in the context of an effective island-wide policy-based implementation of PAs and adjacent landscape management. The Project will actively promote options that acquire public buy-in for the incorporation of private lands into the PA system while protecting the property rights of citizens.
6. Lack of local stakeholders involvement in co-management initiatives.	M-L	The Project will engage relevant stakeholders (NGOs, CBOs, local area persons and Competent Authorities) in co-management initiatives that effectively couple the livelihood interests of local area farmers and landowners with Competent Authorities' INRM objectives.
7. Uncertainty of institutionalizing and maintaining a sustainably financed PA network	M	The Project will support the institutionalization of an expanded PA network through enhanced facilities and management effectiveness for selected PAs, as well as the strengthening of the legal/regulatory base for the network. The Project will demonstrate in increments how a Sustainable Financing Plan for maintaining a network of PAs can be made to work. While the prospect of applying user fees as an instrument for sustainable financing is remote since most of the PAs are very small, an innovative framework where PAs within a managed network are commercialized, not privatized, could generate revenues from local as well as tourist users of the PAs. The Project will establish a PA system business plan and undertake awareness-raising on the cost-effectiveness of conservation, management and importance of BD and ecosystem services provided by PAs, in order to generate clear information on the economic benefits of PAs so as to increase political support for their funding.
8. Government fails to sustain its political and financial support for PA planning and operations	M	The Government has declared a plan to cut recurrent spending by 20% for a number of years from 2014 onward, thereby putting at risk the integration of PAs into the Government's Annual Recurrent Estimates of Revenue and Expenditure Program past the lifetime of the Project. The Project's interventions will complement and bolster baseline programs and garner support for the Government's commitment to maintain current staff levels for these baseline

Risk	Risk Level	Risk Mitigation Strategy
		programs. Through the support of UNDP, the Project will sustain the interest of Government officials by keeping them informed of the Project's achievements through various means (e.g. Steering Committee, learning and knowledge sharing, and field visits). Collaborative practices and ongoing Government contributions through technical input from baseline activities, offer good potential for sustainable support for the BD and ecosystems functions agenda. There are high prospects for significant lessons to be learned and replication of experiences in other watersheds since area farmers have had very good prior engagement in livelihoods-focused initiatives (e.g. GEF agro-forestry and OECS OPAALS projects in recent times), and thus stakeholder/ constituent interest will warrant continued political/financial support.

2.6 Financial Modality

119. The financial support provided by GEF resources will consist of a grant to cover incremental costs of activities. Therefore, the GEF resources will be chiefly directed toward technical assistance and enabling capacity.

120. The project will be executed under NIM according to the standard regulations for UNDP cooperation in Grenada. The cost of the incremental activities that are required to contribute to global benefits will be financed by the GEF to the extent of US\$3,031,666. A summary of the project's overall GEF budget is given in Table 7.

Table 7. Total Project Budget

Outcome	Budget (US\$)	Percentage of GEF Total Budget
Outcome #1 Improved management effectiveness of existing and new protected areas.		
Outcome #2 Integrated landscape management practices adopted by local communities with increased investment in integrated landscape management.		
Project Management		
Total	3,031,666	100

2.7 Cost Effectiveness

121. The Project promotes a strategy to control forest loss on productive landscapes by piloting SFM/REDD+ and SLM initiatives and BD conservation activities that will increase ecosystems connectivity on both the Grenada landscape in general and pilot area, Beausejour, in particular. This, in turn, will be supported by a strengthened regulatory and institutional framework. This two-pronged approach is deemed to be far more cost-effective in the short and long-term than the alternative approach in which disparate and uncoordinated efforts limited by insufficient availability of planning, management

and monitoring tools and weak institutional capacities prevail. The capacities of national and local community stakeholders will be strengthened for the application of conservation tools within a framework of effective institutional coordination backed by inter-institutional collaboration, co-management mechanisms and improved institutional capacities. The GEF alternative will thus provide for the removal of barriers that currently prevent Grenada from practicing effective land, coastal and forest management and BD conservation strategies in order to secure the flow of multiple ecosystems services.

122. By improving the quality of baseline information on ecological conditions, the project will help PA managers to improve the quality and cost-effectiveness of their management decisions. The project also will support cost-effectiveness by jointly implementing ecological baseline studies and conservation programs for TPAs and MPAs by both the Division of Forestry and the Division of Fisheries, thereby avoiding any duplication of effort and promoting the sharing of equipment, materials and other resources. Project capacity building of PA management staff will ensure that the productivity and effectiveness of the human resources available to support each PA site is enhanced and optimally organized. Overall, the concurrent establishment and operationalization of additional TPA and MPA units will produce significant benefits in terms of the sharing of resources and expertise among the different sites.

123. Cost-effectiveness will be promoted by working with and through existing CBOs/NGOs that already have established organizational and logistical capacities in the intervention sites. Furthermore, through forest initiatives administrated by FDNP, the country has developed a legal and operational framework that directly benefits the local communities that promote reforestation, natural regeneration, agroforestry, and forest management for production and conservation. The Project will promote investments as part of the strategy designed for the pilot project so that these incentives are effectively used in areas with the highest threat of deforestation or in areas with high rates of C sequestration to maximize their impact, while reducing costs by using well-established operational procedures. The project will promote SFM/REDD+, SLM and BD conservation and CC adaptation means through community-based incentives for Carbon sequestration, especially through the pilot project initiative. The project will also promote the application of principles, methodologies and priorities anticipated through the R-PP and its subsequent National REDD+ Strategy, so as to enhance the baseline and avoid duplication of efforts, thereby optimizing the use of limited available resources.

124. Through increased management capacity and implementation of SLM and SFM practices, the project will help avoid deforestation in approximately 337 has., thereby avoiding losses that would have occurred under the alternative scenario that lacks effective mechanisms to reduce deforestation. Similarly, the alternative scenario to reduce LD and prevent desertification does not consider effective planning for SFM and SLM in the short term. The GEF alternative, through the development of SFM/SLM plans, will allow for the incorporation of SFM/SLM principles in one watershed and up to 13 TPA management plans, thereby reducing pressure on forest and marine ecosystems and generating sustainable flow of dry forest ecosystem services, including enhancement of C stocks, improved soils and hydrological capacity, increased productivity and the livelihoods of the rural and urban communities in the region, and quality habitat for BD.

2.8 Sustainability

Ecological Sustainability

125. The ecological sustainability of the Ridge to Reef project with respect to the BD and ecosystem functions within and around PAs will be achieved through implementation of a suite of activities that will enhance rather than substitute institutionalized baseline activities by adopting SLM and SFM, LD mitigation and CC adaptation principles and practices that will extend to the long-term. To achieve this, the project will focus on hot-spots that are subject to severe threats while also using the pilot project watershed for focused demonstrations of co-management involving community-based vested interests together with Competent Authorities and NGOs for applying the INRM approach to management and

conservation. Co-management initiatives within the project are expected to lead to: rehabilitation of forested areas impacted by annual forest fires; recovery of forested areas impacted by slash and burn agriculture; recovery of degraded areas due to exposure of steep landscapes; improved quality of water sources currently overloaded by pollutants and sedimentation that diminish the quality/availability of potable water; and decrease in pollution/sedimentation from upstream sources degrading “close-to-shore” marine ecosystems and habitats.

126. The Project will enhance natural regeneration of forested landscapes, reforestation through agro-forestry systems, control of deforestation and systematical application of SLM/SFM practices by adopting a “Monitoring, Measurement, Evaluation and Response” protocol for water quality important to both marine and terrestrial ecosystems services. The project is also designed to involve local stakeholders in generating community-based INRM rules that could be later translated into statutory rules and orders so as to give fullest effectiveness to the INRM approach; and also demonstrate lessons learned and best management practices (BMP) that can be duplicated at other locations on the island.

127. The project activities are designed to complement the incipient R-PP initiative and its development of a SFM/REDD+ strategy. The Project’s interventions will enhance the Government’s ongoing institutional baseline programs for land and forest management. These will complement the R-PP process, thereby creating opportunity for the incremental generation of long-term global and local environmental benefits regarding conservation and management of BD and ecosystems functions.

Social Sustainability

128. The social sustainability of the project activities will be achieved chiefly through the involvement and direct participation of local area persons who support the co-management approach. Medium and long-term social sustainability will be reinforced by the demonstration of successful outcomes of SLM, SFM, REDD+, LD mitigation and CC adaptation practices applied within the INRM approach and seen as profitable to local stakeholders. Specifically, it is expected that social uptake and acceptance will be garnered through the project’s initiatives that couple the application of INRM practices with opportunities to enhance the livelihoods of local stakeholders. At the pilot project demonstration site, the Beausejour watershed, the sustainable agricultural productions, the sustainable forest management and the sustainable rangeland management initiatives promise considerable potential for generating profit and involvement of targeted local persons. With regards to Outcome 1, the opportunities to enhance existing or create new livelihood enterprises based on natural resources directly associated with PAs, offer considerable options for generating short-term and long-term social sustainability.

Institutional Sustainability

129. The Ridge to Reef Project emphasizes capacity-building that complements rather than substitutes ongoing baseline programs of the Government of Grenada for the conservation and management of BD and ecosystems functions. As such, it incorporates various opportunities for institutional strengthening relevant to long-term management and conservation of the BD and ecosystems functions to ensure these agencies are capable of continuing with activities past the Project’s lifetime, and with enhanced levels of performance and application of BMPs from the lessons learned. The Project will build capacity within the various Competent Authorities responsible for co-management application of SLM, SFM, REDD+ and CC and LD practices through engagement of local stakeholders. A significant outcome/ output expected will be to enhance capacity regarding the use of technologies to track the status and trends with regard to ecosystems and representations of stocks and habitats in the terrestrial and marine environments in Grenada.

Financial Sustainability

130. Financial sustainability will be achieved by strengthening institutional and regulatory mechanisms to enable more effective land, coastal and forest management, as well as the Government’s

human and infrastructural capacity. There is a commitment by the Government to formally establish national-level committees to oversee terrestrial and marine protected areas, and for the development of community co-management structures for individual PA sites. This means that private sector partners and community members will be actively involved in developing tourism attractions / services in protected areas, thereby generating additional revenue for the PA system. The Government is also committed to establishing a national protected areas trust fund and a PA system-level business plan, and to mainstreaming the needs of PA financing into national development planning. The sustainability of various SLM approaches will be based on the focus of the project on implementing livelihoods-based SLM activities, thereby providing an economic incentive for local communities to continue such activities indefinitely. In particular, the Project will foster collaboration among CBOs, NGOs and Competent Authorities in a co-management framework for the application of SFM/ SLM practices as well as their cost-effective financial planning and management. Similarly, skills development at the community level will facilitate the adoption of SFM/ SLM practices at the local level.

2.9 Replicability

131. The project replication strategy will be designed from lessons learned from the performance of the best practices, particularly those tested at the pilot area, the Beausejour Watershed. This makes the Monitoring & Evaluation plan all the more important. Special focus will be placed on the co-management engagements between the Government agencies and NGOs /CBOs and where functional engagements would not have had the benefit of accustomed to interactions and standard “rules of engagement”, and ; where co-management engagements where models for maximizing **private profitability** of landowners and farmers, would recognize that private vested interests could often be at variance with community-based and collaborative efforts for application of INRM principles and practices being promoted by the “Ridge to Reef” Project. In spite of the barriers to successful application of INRM practices in the face of farmers and landowners prime interest in ensuring private profitability with respect to their livelihoods, some ecological conditions indicate good chance for replication of initiatives. It is that the Grenada Island landscapes and seascapes are all very similar, in that they are composed of a set of small watersheds each characterized by the following (and with striking similarities to the Beausejour Watershed) :- (i) Steep Forested Hillside with agricultural holdings, most of them small; (ii) Single Mini Rivers that drain each watershed; (iii) Most of the watersheds act as both water source and for agricultural ecosystems services; (iv) Most of the watersheds are populated by human communities especially on the mid-altitudes; (v) Most of the watersheds outfall into relatively shallow coral reef sectors of the island shelf where there is need to adopt conservation and management measures to ensure recruitment of mobile fish stocks, minimal loading of pollutants from the land caused by both human and unsustainable land management practices and for maintenance of the clearness of coastal waters depended on for tourism services among others. The strategy would then be to document the lessons learned and Best Management Practices that were tested and could be applied for island watershed management of BD and ecosystems services at other watershed in Grenada or elsewhere.

2.10 Project Results and GEF Increment

Incremental Cost Analysis

Global and National Objectives

132. The project will contribute to implementing SFM/REDD+ and SLM as well as to the conservation and management of BD and the enhancement of CC mitigation initiatives on both the overall Grenada landscape and also in a mixed farming and forested watershed of Beausejour. The global and national benefits to be delivered through the project are:

Outcome #1 (Total Grenada Landscapes/ Seascapes)

- Coverage of Protected Areas expanded: number of TPAs increased from 8 to 9 with area increased from 1,931ha to 2,931ha; number of MPAs increased from 3 to 7 with area increased from 1,780ha to 13,180ha.
- Reduced threats to 16,111ha of PAs, no net loss in forested area within PAs.
- Conservation of forest in the Mt. St. Catherine area up to 81,652tC in direct benefits, with indirect benefits due to institutional strengthening of measures to promote sustainable SLM, SFM, REDD+ and CC adaptation and BD conservation up to 322,158.3tC.
- No net loss in mangrove, sea grass and coral reef ecosystems in and around PAs.
- Increased representations of both terrestrial and marine environments.
- Active and programmatic management effectiveness as measured by the METT scores using PPG baseline measurements as reference.

Outcome #2 (Pilot Area, Beausejour Watershed)

- Introduction of climate resilient technologies to 6 local area communities within the 1547ha Beausejour watershed, together with the adjacent MPA.
- Direct Carbon benefits through avoided deforestation on about 337.3ha through sustainable land and forest management practices.
- Increased forest cover of 150ha and removal of bamboo (40ha) through enrichment programs that increase carbon stocks of 4320tC.
- Indirect Carbon benefits through avoided deforestation in all forests in the watershed by local area watershed-level planning and management up to 26,066tC.
- 15% reduction in the sediment and fertilizer and pesticide levels at the 1TPA and the 1 MPA; and with reduced soil erosion on steep landscapes.
- Adoption of sustainable agriculture practices at 6 local area communities within the watershed.
- Increased net household incomes.
- A watershed-level planning and implementation process conducted by an intersectoral committee.

The Baseline Scenario

133. Under the normal “business as usual” i.e. recurrent activities without GEF intervention, important programs will be developed, but such programs by themselves will not overcome the barriers that currently prevent implementation of land and forest management and BD conservation practices on the Grenada landscapes and seascapes in general and within the Beausejour pilot watershed; activities that are expected to secure the flow of ecosystems services while at the same time ensuring ecosystems resilience to CC. The baseline programs are divided into two areas which are in line with the project’s outcomes. These two areas are described below for the project period.

A Regulatory and Institutional Framework for Local INRM

134. Existing and planned total investments by the Government of Grenada for baseline programs and activities for the 2014-2019 time-period is estimated at US\$15,651,822. Baseline activities also include investment in Grenada’s REDD+ Readiness Program. This REDD+ Readiness Program (R-PP) in its incipient stage and administered by Ministry of the Environment will focus on the three components (i) Development of a reference level for the assessment of emission reduction targets (component #1), and (ii) Design of a monitoring system to assess emissions and removals (component #2) Beausejour pilot project for CC mitigation, BD conservation and SFM/REDD+ and SLM. Existing and planned

investments for baseline programs and activities for the 2014-2019 time-periods are estimated at US\$4,090,000 for Component #2 and US\$10,561,822 for Component #1.

The GEF Alternative to Generate Global Benefits

135. Despite the important contributions of these existing and planned baseline programs and activities and projects, they are not considered sufficient for strengthening land, forest and coastal management processes and BD conservation to serve the flow of multiple ecosystems services, while at the same time ensuring ecosystem resilience to climate change especially demonstrated in the pilot area of Beausejour watershed. A GEF alternative scenario will help to remove the structural and institutional barriers that prevent Grenada from achieving a regulatory and institutional framework that integrates the principles of SFM and SLM and also strengthen integrated environmental land management capacity. The proposed GEF intervention to achieve the objective consists of two inter-related components that will contribute to reducing deforestation, preventing LD improving the BD and enhancing carbon sequestration within the Grenada environment as a whole. A description of the benefits of the GEF alternative scenario is as follows.

136. The GEF alternative scenario will integrate principles of SFM/REDD⁺ and SLM into a regulatory and institutional framework and will strengthen integrated land and coastal zone management capacity. As mentioned above, the Government's baseline, alone, will not generate global benefits. Rather, through the project, GEF and UNDP funding will be used to work with the Government to create the impetus needed to boost the baseline's impact to reach the necessary level to generate global benefits. To this end, the project co-financiers/ co-programmers state their commitment to the project through their signed co-finance letters in Annex 9.

SECTION II: PROJECT RESULTS FRAMEWORK:

Part V (I) - PROJECT RESULTS FRAMEWORK:					
The Project Will Contribute to Achieving Country Programme Outcomes in the CPAP or CPD: protecting biodiversity and ecosystems functions in and around protected areas.					
Country Programme Outcome Indicators: strengthened national capacities for protected areas management so as to conserve and manage the biodiversity and ecosystems functions.					
Primary Applicable Key Environmental and Sustainable Development Result Area: Mainstreaming protected areas management, viability of protected areas system and application of management effectiveness tracking tools in the context of global benefits.					
Applicable GEF Strategic Objective and Programs: SOI-Improve Sustainability of Protected Areas Systems.					
Applicable GEF Expected Outcomes: Outcome 1.1 – Improved Management effectiveness of existing and new protected areas (BD-1); Outcome 3.2- Integrated Landscape management practices adopted by 6 local area communities (LD-3); Outcome 1.3 – Good management practices adopted by relevant economic factors (vested interests) (SFM/REDD-1)					
Applicable GEF Outcome Indicators: indicator 1.1 5 new PAs and coverage of 12,400ha. of unprotected ecosystems (BD-1); 3.2 INRM tools and methodologies tested (LD-3); 3.4 Information on INRM technologies and food practice guidelines disseminated (LD-3), 1.3 types and quantity of services generated through SFM (SFM/REDD-1) all scored as recorded by management effectiveness tracking tool (METT).					
Project Objective	Indicator	Baseline	Target	Means of Verification	Risks and Assumptions
To ensure that biodiversity (BD) and ecosystems functions within and around Marine Protected Areas (MPAs) and Terrestrial Protected Areas (TPAs) in Grenada are better protected from threats through the adoption of an integrated “Ridge to Reef” approach that increases Protected Area (PA) management effectiveness and applies targeted sustainable land	PA management in Grenada is mainstreamed	- TPAs managed by Forestry Division and MPAs managed under the Fisheries Division with varying degrees of recognition and planning & management tools.	- TPA and MPA planning & management instruments and guidelines formally incorporated into the Government’s Administration	PA planning and management instruments and guidelines. M/E records kept by the Project management unit	Assumptions: Institutional stability and commitment of GoG throughout project implementation. Consensus among stakeholders for PA expansion and connectivity. National/International conditions remain stable. Willingness of government to commit funding and resources to make the PAs system viable and resilient. Risks: Extreme weather, fires, pests and invasive species are beyond predicted levels.
	Financial sustainability to increase viability and resilience of the PA system in Grenada	- Insufficient financial resources for basic functions in the Forestry and Tourism Divisions as reflected by Financial Scorecard: 70 = 32% - No formal coordination	- Budgetary restructuring to foster strategic collaboration between fisheries, forestry and tourism to increase (double) budgetary allocations to 8 PAs as eco-sites, as reflected by increase in Financial Scorecard: 90 = 42% - Inter-sectoral	Forestry, fisheries tourism and program recurrent and capital budgets. METT Financial Scorecard applied at PPG, MTR, and TE M/E Records	

management practices.		mechanism for investments in maintenance of the PA system.	coordination committee established to oversee investments in PAs		
	Average METT scores of 6 existing TPAs and 3 MPAs	53	62	METT Scorecard applied at PPG, MTR, and TE	
	Improved capacity for planning, implementation and monitoring of site-specific co-managed strategies for threat reduction through SLM and SFM in PAs.	<p>Avg score on Capacity Development Scorecard²²:</p> <p>Q 2: 2</p> <p>Q10: 1</p> <p>Q 11: 1</p> <p>Q 13: 2</p> <p>Q 14: 0</p> <p><u>Areas to be improved:</u></p> <p>Co-management is identified as the governance model for SLM, SFM and TPA management, but no formal mechanisms are instituted.</p> <p>Outdated laws, low public knowledge of the various legislation, and inadequate regulatory framework constrain enforcement.</p> <p>Environmental information used to support decision-making processes is unavailable, under-utilized, incomplete or out-of-date.</p> <p>Capacity and technological needs are, when available,</p>	<p>Avg score on Cap Dev SC increases by at least 1 point:</p> <p>Q 2: 3</p> <p>Q10: 2</p> <p>Q 11: 2</p> <p>Q 13: 3</p> <p>Q 14: 1</p> <p><u>Specific improvements:</u></p> <p>Develop and implement co-management mechanisms for SFM, SLM and TPA management (Outcome 1).</p> <p>Review and update existing policies and legislation; implement site specific mgt plans for PAs; endorse an interagency collaboration mechanism for SLM. (Outcomes 1 & 2)</p> <p>Develop and implement a protocol that facilitates information updating, access and sharing for decision-making (Outcomes 1 & 2).</p> <p>Develop a capacity development strategy to augment technical</p>	GEF Capacity Development Scorecard applied at PPG, MTR and TE	

²² Q2 = Existence of operational co-management mechanisms.

Q10 = Existence of an adequate environmental policy and regulatory frameworks

Q11= Adequacy of the environmental information available for decision-making.

Q13= Availability of required technical skills and technology transfer.

Q14= Adequacy of the project/programme monitoring process.

		obtained through external financing.	skills within the resident organizations per the priorities of the NAP.		
		Monitoring is done irregularly, with or without an adequate monitoring framework.	National monitoring system with proper capacity building (Outcome 1).		

Outcome #1	Indicator	Baseline	Target	Means of Verification	Risks and Assumptions
1. Establishment and effective management of new and existing Protected Areas	Institutional framework for management effectiveness in and around PAs	<ul style="list-style-type: none"> - No formal National Parks Advisory Council; Forestry Division administers 8 TPAs under suboptimal conditions; Fisheries Division administers 3 MPAs. 	<ul style="list-style-type: none"> - Formal establishment of a National Parks Advisory Council for TPAs and Management Committee for MPAs administering policy-based PAs, PoA. 	<ul style="list-style-type: none"> - SROs Published in the Government Gazette so as to enable the TPA and MPA Strategic Management bodies to function. 	<p><u>Assumptions:</u> Government of Grenada adopts the Ridge to Reef Project as a key initiative for fulfilling its obligations for conservation and management of its BD so as to meet local and Global objectives.</p> <p><u>Risks:</u> Contingency-based planning and management persists.</p>
	Regulatory and legal framework for management effectiveness in and around PAs	<ul style="list-style-type: none"> - Forestry policy does not include INRM. - Fisheries division does not use INRM in its administration of MPAs. - No PA System Business Plan exists 	<ul style="list-style-type: none"> - A finalized and approved <i>Protected Area Forestry and Wildlife Bill</i> with draft SROs that promote INRM practices and principles. - Fisheries division applying INRM principles and practices using enhanced law and/ or regulations, within 2 years. - PA System Business Plan developed and under implementation 	New parent legislation published in the Government gazette and with associated SROs.	
	Expansion of protected areas system	<p>3,711 ha of bio-diverse landscapes/seascapes formally recognized and facing multiple threats:</p> <ul style="list-style-type: none"> - 8 TPAs managed under suboptimal conditions and 5 mini TPAs with no management mechanism. <ul style="list-style-type: none"> o TPAs cover 1,931 ha. 	<p>16, 111 ha of bio-diverse landscapes/seascapes formally recognized and managed effectively:</p> <ul style="list-style-type: none"> - 9 TPAs + 4 mini-TPAs effectively managed with legal demarcation, management plans, business plans, and adequate infrastructure in place. 	<p>Project records:</p> <ul style="list-style-type: none"> - Technical reports - GIS maps - Project evaluation reports - Planning and policy documents - Tracking Tools - Field assessment 	<p><u>Assumptions:</u> Increased support from GoG.</p> <p>Effective management measures adopted.</p> <p><u>Risks:</u> Unpredicted natural hazards</p>

Outcome #1	Indicator	Baseline	Target	Means of Verification	Risks and Assumptions
		<ul style="list-style-type: none"> 3 MPAs management suboptimal conditions <ul style="list-style-type: none"> MPAs cover 1,780 ha. 	<ul style="list-style-type: none"> TPAs cover 2,931 ha. 7 MPAs managed under optimal conditions within 5 years. <ul style="list-style-type: none"> MPAs cover 13,180 ha. 		
	Measurable Threat Reduction: <ul style="list-style-type: none"> Forest cover Direct Carbon benefits Indirect Carbon benefits Mangrove, seagrass bed and coral reef areas 	<ul style="list-style-type: none"> Continuous deforestation threatens 10,012 hectares 81,652.5 tC (Direct) 322,158.3 tC (Indirect) Continuous destruction of 231 Ha of mangrove, 1301 Ha of seagrass and 5095 Ha of reef areas 	<ul style="list-style-type: none"> 10,012 hectares of forested area maintained or increased 81,652.5 tC Direct maintained or increased 322,158.3 tC Indirect maintained or increased 231 Ha of mangrove, 1301 Ha of seagrass and 5095 Ha of reef areas maintained or increased 	<ul style="list-style-type: none"> Tracking Tools applied at PPG, MTR, and TE Technical reports GIS maps Satellite imagery Field assessments 	<u>Risks</u> Unpredicted natural hazards <u>Assumptions</u> Consensus and interest among local stakeholders. Collaboration with Academia and Centres of excellence in data procurement and application of SLM/SFM practices
	Management of expanded PA network institutionalized	<ul style="list-style-type: none"> No coral Reef resilience program (protocol) in place. No systematic SFM program in place No staff trained in planning accounting, bio principal monitoring, enforcement, fire management and co-management 	<ul style="list-style-type: none"> Coral reef resilience program (protocol) in place within 5 years. SFM program adopted and administered in all PAs within 5 yrs. 13 PA Staff trained 	<ul style="list-style-type: none"> MMER protocol designed adopted and administered CCM measures adopted and recorded Records of staff training Training Docs. Capacity development Scorecard 	
	PA network infrastructure and services	<ul style="list-style-type: none"> Inconsistent infrastructure and facilities and services across TPAs and MPAs. 	<ul style="list-style-type: none"> Standardized and quality infrastructure facilities and services available at all TPA and MPA units in the PA network. 	<ul style="list-style-type: none"> Field inspections Documentation and records 	<u>Assumptions:</u> Adequate investments: Entrepreneurs willing to assist and collaborate in the project.

Outcome #1	Indicator	Baseline	Target	Means of Verification	Risks and Assumptions
	Community involvement in PA management through conservation and sustainable use of natural resources	<ul style="list-style-type: none"> - 0 communities adjacent to MPAs engaged in PA co-management - 0 communities adjacent to TPAs engaged on PA co-management 	<ul style="list-style-type: none"> - 3 communities adjacent to selected MPAs engaged in co-management - 3 communities adjacent to selected TPAs engaged in PA co-management 	<ul style="list-style-type: none"> - Planning and policy documents and records. - Project records - METT scorecard 	Assumptions: Community interest in engaging in PA management activities
	Benefits/profitability from conservation/sustainable-use resource-based livelihood opportunities	<ul style="list-style-type: none"> - No systematic collaboration for INRM linked to livelihood opportunities - Minimal benefits from resources based livelihoods 	<ul style="list-style-type: none"> - Incentive schemes to engage entrepreneurs in INRM practices linked to livelihoods - Measured increase in benefits from resource based livelihoods 	<ul style="list-style-type: none"> - Project records - METT scorecard 	
Outputs: 1.1 <u>Institutional framework for PA System Management</u> that would develop and administer a policy-based strategic plan of action for an expanded PA network, one advisory body for TPAs while the other is for MPAs; with the aid of policy instruments. 1.2 <u>A legal and regulatory framework</u> established through the finalization and approval of the bill for “Protected Area, Forestry and Wildlife” enhanced with SROs and operations management policy instruments that would the consolidate legal process to include private lands in the PA system. Accompanied by an adapted MPA Act as a response to community wide consultations with key stakeholders. 1.3 <u>Expanded PA system</u> through the creation of a new TPA (1000 ha.), enhanced management of 8 sub-optimally managed TPAs, as well as low-cost improvements for 4 small-hectare TPAs; and the creation of 4 new MPAs (11,400 ha). 1.4 <u>Management of Protected Area Units Institutionalized</u> as a TPA network and with a MPA network. 1.5 <u>Conservation and sustainable use of natural resources as a means for community involvement in PA co-management.</u>					

Outcome #2	Indicator	Baseline	Target	Means of Verification	Risks and Assumptions
2. Climate resilient SLM practices applied in the Beausejour watershed to reduce threats adjacent to and upstream of PAs.	Planning and management framework for SLM/INRM	<ul style="list-style-type: none"> - No LUP regulations limiting agriculture and housing. - National Forestry Policy does not consider C sequestration. - No intersectoral body or committee in place for implementing a watershed 	<ul style="list-style-type: none"> - LUP regulations elaborated and implemented to limit agriculture and housing. - NFP updated to include C sequestration. - Intersectoral committee established within Year 1 	<ul style="list-style-type: none"> - Capacity development scorecard - Project records of engagements between and among stakeholders. - Minutes of intersectional 	Assumptions: Optimal community uptake of the watershed management plan of action. Practical evidence of accommodation of TEK, LK and ideals of local area, persons accommodated in

Outcome #2	Indicator	Baseline	Target	Means of Verification	Risks and Assumptions
		management plan using INRM approaches. - Stakeholders not engaged in community-based rule-making with respect to applying INRM practices. - No systematic monitoring for water quality/quantity, sediment and pollution impacts	- The intersectoral watershed committee engages stakeholders to formulate community-based rules for applying INRM practices within 2-3 yrs. - A water quality/quantity protocol set in place within Year 2.	committee meetings. - Water quality and quantity protocol - Updated National Forest Policy document.	watershed management plan. Collaboration is ongoing between and among competent authorities relevant to the exercise.
	Community participation in SFM.	- No involvement of local stakeholders in initiatives to review and update the National Forest Policy (NFP) to consider carbon sequestration.	- Community engaged in updating of NFP; and SROs promulgated by Year 3.	- Project records of engagements between and among stakeholders. - Updated NFP and related SROs	
	Direct carbon benefits through avoided deforestation; forest enrichment; and planting in the Beausejour watershed.	- 9,613tC sequestration by 3337.3 ha. of private forest - 4,320tC sequestration by 150ha increase in forest cover with removal of 40ha of bamboo - 0 tC from avoided deforestation and sustainable planting products	- 9,613tC sequestration maintained in private forests - 4320tC sequestration maintained - At least 26066tC sequestration from avoided deforestation and sustainable planting products	-Tracking Tools -Technical reports	<u>Assumptions:</u> Competent Authorities are consistent with M&E for multiple impacts. <u>Risks:</u> Failures in the M&E plan.
	Turbidity Levels/ sediment buildup at two MPAs downstream of Beausejour	No turbidity index available; TBD within first 6 months of project	15% reduction in turbidity	-Turbidity and soil accumulation - Monitor and measurement protocol. UN FAO LADA tools.	
	Pesticide and fertilizer levels at two MPAs downstream of Beausejour.	Grand Anse MPA: TBD within the first 6 months of project Moliniere/ Beausejour MPA: TBD within the first 6 months	Grand Anse MPA: 15% reduction Moliniere/ Beausejour MPA: 15% reduction	Water quality measurement using protocol for Pesticide and fertilizer (Agro-chemicals) in	

Outcome #2	Indicator	Baseline	Target	Means of Verification	Risks and Assumptions
		of project		seawater at MPAs	
	Application of gender and community-sensitive SLM and SFM practices in 6 communities (Beausejour, Happy Hill, Granville Vale, New Hampshire, Annandale and Vendome)	No ongoing and systematic training: <ul style="list-style-type: none"> - No agricultural production program implemented within the watershed. - No rangeland management program implemented within the watershed. - No forest management program implemented within the watershed. 	6 villages trained in alternative livelihoods related to BD, SFM/SLM, and CC issues: <ul style="list-style-type: none"> - A sustainable agricultural biodiversity program implemented by Year 3 - A sustainable rangeland management program implemented by Year 3 - SFM program involving forest enrichment with agro-forest species so as to ensure SLM/SFM practices applied by Year 3 	<ul style="list-style-type: none"> - Landscape management plans in place - Technical reports - Field verification notes - Tracking Tools - Capacity Development scorecard 	<u>Assumptions:</u> Optimal uptake by farmers and land owners. Innovative alternatives accepted to replace bamboo as a tool to avoid land slippage. Due recognition of gender equity is emphasized within all delivery systems
	Impact of Soil erosion/stability on household incomes of famers within the Beausejour watershed	No existing estimates of soil loss or land soil accumulation levels available. TBD within first 6 months of project No statistics on farmer income available ²³ . Initial survey to establish baseline to be conducted during Year 1	15% reduction of soil loss 25% increase in weekly income per farmer.	Field inspections/ UNFAO-LADA tools: -sediment traps -Soil Accumulation measurements -Suspended sediments -Comparative household surveys of farming communities (RAS method)	<u>Assumptions:</u> No serious CC impacts Farmers uptake of initiatives to enhance profitability of their farms <u>Risk:</u> Lack of cooperation by farmers. Private profitability is not highlighted sufficiently.
	Education and awareness levels	<ul style="list-style-type: none"> - No education and awareness program 	<ul style="list-style-type: none"> - Public awareness campaign developed and implemented 	<ul style="list-style-type: none"> - Project records - Farmer/landowner engagement records 	<u>Assumptions:</u> Emphasis on community-wide education and

²³ Statistical data is provided on p. 48 for gross income for each of the 6 communities participating in these pilots. However, the data does not specify the income of farmers, a sector expected to show increased revenue through the adoption and application of SFM/SLM/INRM practices through the project's interventions.

Outcome #2	Indicator	Baseline	Target	Means of Verification	Risks and Assumptions
				- Tracking Tools	awareness. Due recognition of gender equity is emphasized within all delivery systems
Outputs: 2.1 <u>Strengthened planning and management framework, capacities and awareness for participatory sustainable resource management.</u> 2.2 <u>Improved SLM and SFM practices in 6 communities resulting in reduced deforestation and land and forest degradation in the landscapes surrounding PAs</u> involving: sustainable agricultural production initiatives to conserve and enrich soil and water management; enhanced capacity of farmers and farm organizations and to improve product quality and marketing; sustainable rangeland management initiative for community-based control of overgrazing that impacts on landscape and seascape quality; sustainable forest management initiative that uses agro-forests species to enrich and rehabilitate deforested landscapes.					

SECTION III. TOTAL BUDGET AND WORK PLAN

AWARD ID	5069	PROJECT ID	5087
AWARD TITLE	GRENADA: Ridge to Reef approach for protecting biodiversity and ecosystems functions within and around protected area		
BUSINESS UNIT			
Project Title:	Implementing a ridge to reef approach to protecting biodiversity and ecosystems functions within and around protected areas in Grenada		
PIMS NO:	5087		
Implementing partner (executing agency)	Ministry of Agriculture, Lands, Forestry, Fisheries and Environment.		

GEF Outcome/ Atlas Activity	Responsible Party	Source of Funds	ERP/ATLAS Budget Description/ Input	Atlas Code	Y1	Y2	Y3	Y4	Y5	TOTAL	Budget Notes
1	Ministry of Agriculture, Lands, Forestry, Fisheries and the Environment (MoA)	62000	International consultants	71200			26,500			26,500	1
			Local Consultants	71300	34,976	48,429	69,953	34,976	80,715	269,049	2
			Contractual Services - Individual	71400	24,832	24,832	24,832	24,832	24,832	124,160	3
			Travel	71600	5,405	2,000				7,405	4
			Contractual Services - Companies	72100	19,805	12,815	61,500	83,880		178,000	5
			Equipment and furniture	72200	327,368	155,615	69,163	23,054		575,200	6
			Supplies	72500	500	250	250	250	250	1,500	7
			Premises Alterations	73200	298,584	74,116				372,700	8
			Professional Services	74100	3,000					3,000	9
			Audio- Visual print and	74200							10

			production cost		18,763	67,011	6,701	6,635	1,340	100,450	
			Miscellaneous Expenses	74500	600	600	600	600	600	3,000	11
			Training Workshop conferences	75700	-	90,740	19,463	14,597		124,800	12
			Sub-total Outcome 1		733,833	476,408	278,962	188,824	107,737	1,785,764	
			International Consultants	71200			24,000		32,000	56,000	13
			Contractual Services - Individuals	71400	11,760	11,760	11,760	11,760	11,760	58,800	14
			Travel	71600			8,468		8,468	16,936	15
			Professional Services	74100	3,000	3,000	3,000	3,000	3,000	15,000	16
			Audio Visual&Print Prod Costs	74200	1,000	1,000	1,000	1,000	1,000	5,000	17
			Training Workshop conferences	75700	5,500	500	500	500	500	7,500	18
			Sub-total M&E		21,260	16,260	48,728	16,260	56,728	159,236	
			Total Outcome 1				755,093	492,668	327,690	205,084	164,465
2	Ministry of Agriculture, Lands, Forestry, Fisheries and the Environment (MoA)	62000	Local Consultants	71300		61,433	57,621	80,580	124,226	323,860	19
			Travel	71600		9,550	420	18,100	5,500	33,570	20
			Contractual Services - Companies	72100		53,526	15,985	11,989		81,500	21
			Equipment and Furniture	72200		106,645	22,875	17,156		146,676	22
			Materials and Goods	72300		19,051	29,645	32,077	50,877	131,650	23
			Supplies	72500	1,620	1,620	1,620	1,620	1,620	8,100	24
			Professional Services	74100		21,000				21,000	25
			Audio- Visual print and production cost	74200		7,629	3,343	6,000	13,028	30,000	26

			Miscellaneous Expenses	74500		2,573	2,572	2,572	2,572	10,289	27
			Training Workshop conference	75700		51,968	28,483	53,047	26,682	160,180	28
Total Outcome 2					1,620	334,995	162,564	223,141	224,505	946,825	
PM	Ministry of Agriculture, Lands, Forestry, Fisheries and the Environment (MoA)	62000	Contractual Services - Individual	71400	2,769	2,768	2,768	2,768	2,768	13,841	29
			Contractual Services - Individual	71400	5,040	5,040	5,040	5,040	5,040	25,200	30
			Contractual Services - Individual	71400	8,400	8,400	8,400	8,400	8,400	42,000	31
			UNDP-Cost recovery charges-Bills	74599	11,760	11,760	11,760	11,760	11,760	58,800	32
Total Project Management					27,969	27,968	27,968	27,968	27,968	139,841	
TOTAL GEF PROJECT BUDGET					784,682	855,631	518,222	456,193	416,938	3,031,666	

TOTAL BUDGET SUMMARY	
DONOR NAME	TOTAL USD
GEF	3,031,666
Ministry of Agriculture, Lands, Forestry, Fisheries and the Environment – Environment Division	6,130,525
Ministry of Agriculture, Lands, Forestry, Fisheries and the Environment –Forestry & National Parks Division	2,250,000
Ministry of Agriculture, Lands, Forestry, Fisheries and the Environment –Fisheries Division	4,629,630
Ministry of Tourism	2,166,667
UNDP	250,000
TOTAL	18,458,488

Budget By Category

ERP/ATLAS Budget Description/ Input	Atlas Code	Y1	Y2	Y3	Y4	Y5	Total
International consultants	71200	-	-	50,500	-	32,000	82,500
Local Consultants	71300	34,976	109,862	127,574	115,556	204,941	592,909
Contractual Services - Individual	71400	52,801	52,800	52,800	52,800	52,800	264,001
Travel	71600	5,405	11,550	8,888	18,100	13,968	57,911
Contractual Services - Companies	72100	19,805	66,341	77,485	95,869	-	259,500
Equipment and Furniture	72200	327,368	262,260	92,038	40,210	-	721,876
Materials and Goods	72300	-	19,051	29,645	32,077	50,877	131,650
Supplies	72500	2,120	1,870	1,870	1,870	1,870	9,600
Premises Alterations	73200	298,584	74,116	-	-	-	372,700
Professional Services	74100	6,000	24,000	3,000	3,000	3,000	39,000
Audio- Visual print and production cost	74200	19,763	75,640	11,044	13,635	15,368	135,450
Miscellaneous Expenses	74500	600	3,173	3,172	3,172	3,172	13,289
Training Workshop conference	75700	5,500	143,208	48,446	68,144	27,182	292,480
UNDP-Cost recovery charges-Bills	74599	11,760	11,760	11,760	11,760	11,760	58,800
TOTAL		784,682	855,631	518,222	456,193	416,938	3,031,666

COMPONENT	TOTAL BUDGET ASSIGNED (USD)	PERCENTAGE OF TOTAL BUDGET ASSIGNED
COMPONENT 1	1,945,000	64.2
COMPONENT 2	946,825	31.2
PROJECT MANAGEMENT	139,841	4.6
TOTAL	3,031,666	100

Budget Notes:

1. Establishment and effective Management of new and existing Protected Areas			
Budget Note	Atlas Code	Description	Amount
1	71200	International Land policy expert: Development of a potentially replicable co-management framework for incorporating private landowners into an area plan (Mt. St. Catherine) and reengagement and mobilization of Mt. St. Catherine land owning community. Total cost: \$26,500.	26,500
2	71300	Land management/SLM/SFM Expert: Development of a Landscape Management plan for the Mt. St. Catherine Site in tandem with the co-management plan prepared by the Land policy expert. Total cost \$18,249.	18,249
	71300	Heritage and Natural Resource consultant: Technical support for development and management of PAs as conservation/visitor sites; Total \$20,000.	20,000
	71300	Consultant for business planning in sites (\$20,000) and community-based consultations (\$800): \$20,800.	20,800
	71300	Consultant in charge of: a. Training for NPAC : \$5,000. b. Public education program: \$39,000. c. Equipping NPAC and NMPAC for strategic management: \$8,000. Total cost: \$52,000.	52,000
	71300	Consultant/Development Specialist in charge of: a. Detailed planning for infrastructure etc. :\$73,000. b. Designing building plan WCCBMPA : \$5,000. c. Site design: \$5,000. Total cost: \$83,000.	83,000
	71300	Professional services for MPA plan and mapping for Grand Anse and South – East Zone (\$15,000) and White Island management planning (\$10,000). Total cost: \$25,000.	25,000
	71300	Professional services for:	41,000

		a. Reef restoration initiative : \$26,000. b. Public education (marine) \$10,000. c. Training in methodologies/ techniques: \$5,000. Total cost: \$41,000.	
	71300	Professional services to link livelihood to INRM practices: \$9,000	9,000
3	71400	Project Coordinator (technical inputs corresponding to \$124,160 or 90% of the incumbent's time).	124,160
4	71600	Support for airfare / per client for trainer to Carriacou: \$405. Total estimated cost: \$7,405.	7,405
5	72100	Professional services – Training (practical) for Juniors STAFF and community partners in Forest/ Land Management applications :\$60,000	60,000
	72100	Professional services including: a. Educator/Mobilizer for adoption of BMP: \$10,000 b. 5 Livelihood promotion specialists for demonstrating the link between livelihood opportunities and SLM/ SFM. Livelihood development experts: \$75,000 c. Professional services- Aquaculture options :\$5,000 d. Professional services- methodologies of engagements:\$3,000 e. Specialist services- methods of community engagements: \$5,000 f. Livelihoods activities at TPA sites: \$5,000 Total cost: \$103,000	103,000
	72100	Professional services for site/ Building design \$15,000	15,000
6	72200	Back-packs for community first responders, wild land fires :\$10,000	10,000
	72200	Biophysical monitoring, fire prevention; planning: \$10,000	10,000
	72200	Materials and placement of infrastructure at PA sites: \$45,200	45,200
	72200	a) Materials and installation of demarcation and signage: \$50,000. b) Placements of infrastructural enhancements: \$7,000. Total cost: \$57,000.	57,000
	72200	a) Reef restoration developments, etc.: \$25,000 b) Coral reef restoration initiative: \$28,000.00 c) Equipment for coral reef restoration initiative (INRM) associated with SIOB MPA \$18,000 Total cost: \$71,000	71,000
	72200	Demonstration equipment/ aids for island wide public education campaign for conservation \$25,000.	25,000
	72200	Demonstration equipment/aids for staff and partners training in methodology, data collection etc: \$20,000	20,000
	72200	Demonstration equipment for linking livelihood with INRM practices at local areas: \$28,000.	28,000

	72200	Outfitting equipment for work boat for training, demonstrations, installations together with MCS activities for MPAs: \$62,000.	62,000
	72200	a. An initiative for development / implementation of FADS program as example in IMRM coupled with livelihoods: \$40,000 b. Equipment for FAD initiative (INRM) associated with SIOB MPA: \$20,000	60,000
	72200	Equipment support white / saline island MPA management plan: \$10,000	10,000
	72200	Equipment / construction for SIOB link in the network interpretation centre: \$62,000	62,000
	72200	Equipment for SCUBA initiative (INRM) associated with SIOB MPA: \$10,000	10,000
	72200	a. Purchase of work boat for training demonstrations installations with MCS activities for MPAs: \$75,000 b. Operations expenses during demonstration phase for monitor / control / surveillance activities: \$30,000	105,000
7	72500	Office supplies.	1,500
8	73200	Infrastructural enhancement at marine sites: \$33,500	33,500
	73200	Construction infrastructure (Interpretation Centre): \$66,000	66,000
	73200	Construction / enhancement for enabling infrastructure for capacity to demonstrate conservation/ management: \$273,200	273,200
9	74100	Legal establishment for three small TPAs: \$3,000	3,000
10	74200	Public awareness / education in support of management planning for Mt. St. Catherine: \$500	500
	75700	Public awareness / education: management planning for TPA sites: \$6,000	6,000
	75700	Public awareness / education concerning placements of infrastructure for ten small TPAs: \$8,500	8,500
	75700	Education / awareness aids: public education for co-management staff training: \$2,000	2,000
	74200	Public education aids for marine conservation: \$20,000	20,000
	74200	Printing of 100 copies of approved policy on PAs: \$950.	950
	74200	Media engagements and print: public awareness of the general population on science-based and TEK education concerning the Watershed Management area: \$28,000	28,000

	74200	Public awareness: establishment and demarcation of Mt. St. Catherine as a TPA (a re-engagement) \$2,000	2,000
	74200	Public awareness for establishing nine small TPAS: \$6,000	6,000
	74200	Community awareness for control of indiscriminate housing and agriculture: \$5,000	5,000
	74200	Audio-visual & print costs for training of TPAs' management staff: \$3,000	3,000
	74200	Audio visual and airtime costs: education and awareness on ecosystems within MPAs: \$35,000	35,000
11	74500	Operations functions support for NPAC / NMPAC \$3,000	3,000
12	75700	Employment of livelihood persons adopting INRM practices (various livelihoods): \$40,000.	40,000
	75700	a. Research and community SCUBA activities for control of lion fish education associated: \$25,000 b. Operations expenses for the SCUBA diving cooperation in support of research / education / community conservation activities (lion fish mitigation efforts for eradication contests) \$22,000 Total cost: \$47,000.	47,000
	75700	National and community workshops / consultations on PA policies: \$3,650	3,650
	75700	Two (2) focus group workshops and one (1) national workshop on business plans for PAS management: \$2,750	2,750
	75700	Management training legislation and training in sustainable financing for members of the TPA and MPA advisory bodies: consultant fees and supplies \$13,900	13,900
	75700	Community seminars for public awareness targeted at the wider community \$1,000. Working groups, seminars and launch of advisory bodies.	1,000
Monitoring & Evaluation			
Budget Note	Atlas Code	Description	Amount
13	71200	a) International consultant for Mid-term Review. Total cost: \$24,000. b) International consultant for Terminal Evaluation. Total cost: \$32,000.	56,000
14	71400	Project Administrator/Financial Officer: Project M&E activities (70% of the incumbent's time:	58,800
15	71600	a) Travel costs for Mid-term Review. Total cost: \$8,468. b) Travel costs for Terminal Evaluation. Total cost: \$8,468.	16,936
16	74100	Audits (5). Total cost: \$15,000; \$3,000/yr.	15,000

17	74200	Production and printing costs for review and systematization of lessons learned and best practices reports. Total cost: \$5,000; \$1,000/yr during 5 years.	5,000
18	75700	a) Project Inception Workshop: Total cost: \$5,000 b) Project steering meetings. Total cost: \$2,500; \$500/yr.	7,500
2. Climate resilient SLM practices applied in the Beausejour Watershed to reduce threats adjacent to and upstream of Pas			
Budget Note	Atlas Code	Description	Amount
19	71300	Consultant fees: forest policy analyst and public awareness / community outreach specialist: \$50,000.	40,000
	71300	Documentation: TEK and Best Management Practices of the ridge to reef project: \$8,000.	8,000
	71300	Consultant for: a. Hosting 2 day training seminars (watershed management): \$1,200. b. Development of a watershed management plan and generating community uptake of plan \$34,960. Total cost: \$36,160.	36,160
	71300	Consultant for preparing water quality monitoring manual: \$4,000.	4,000
	71300	Consultant for: a. Implication of local area land degradation / assessment methodology for pilot area and for generating community uptake: \$35,000. b. Seminar training for agriculture land use, extension, Ministry of Works officers in climate change response issues: \$10,000 Total cost: \$45,000	45,000
	71300	Consultant: public awareness training application of BMP and for conducting posttest / analyzing posttest for effectiveness of outreach / applications: \$25,000	25,000
	71300	National consultant / knowledge persons for applications of BMP: \$31,000	31,000
	71300	Consultant for demonstrations of BMP for fertilizer and water treatment applications: \$15,500	15,500

	71300	Consultant: feasibility study for export opportunity and partnerships of farmers with business entities: \$9,000	9,000
	71300	Labour and professional services: Promotion of best management practices to protect at least 210 hectares of livestock 0 impacted lands : \$23,000	23,000
	71300	Labour/professional services in support of Sustainable Forest Management (SFM): \$36,900	36,900
	71300	Consultant fees: for Forest policy analyst and public awareness / community outreach specialist: \$50,000 (6 month assignment)	50,000
	71300	Consultant fees for water treatment laboratory activities: \$300	300
20	71600	Airfares and DSA / per diem: consultant and Carriacou (On island) Official's participation in national consultation workshops: \$8,370.	8,370
	71600	Travel / per diem: CEHI officials attending water quality training sessions: \$1,000	1,000
	71600	Travel / per diem: three missions of consultant (s) developing watershed management plan: \$5,000	5,000
	71600	Travel / per diem: Carriacou and community persons attending workshop on monitoring land degradation mitigation applications: \$1,100	1,100
	71600	Consultant: airfare and per diem and transportation for training of resource managers in spatial technologies, asset mapping and identification for BD: \$6,300	6,300
	71600	Travel / per diem: for consultant(s) preparing prosecution manual \$4,000	4,000
	71600	Travel / per diem and transportation – logistics for farmer exchanges and demonstration good agricultural and soil management practices: \$5,500	5,500
	71600	Travel expenses for farmers and MNIB participants in product marketing initiatives: \$2,300	2,300
21	72100	Consultants fees: training of agriculture / fisheries staff in applications of spatial technologies for BD conservation: \$18,000	18,000

	72100	Facilitation of data collection / analysis / reforestation for pre-test of baseline knowledge, attitudes and practice in good agricultural practices: \$14,000	14,000
	72100	Consultant fees: Assessment and response study of grazing impacts at six communities: \$8,000	8,000
	72100	Contract services: construction of 250 brood chambers and provision of field-based training: \$41,500	41,500
22	72200	Demonstration equipment for training of resource managers from units of ministry of agriculture in the application of technologies related to identification and mapping for biodiversity conservation: \$10,000	10,000
	72200	Shredder (\$1,500) and multiple equipment for demonstrations of field interventions by extension staff (\$2,500): Total cost \$4,000	4,000
	72200	Procurement of raw materials and equipment for branding labels and packaging for agri-products / marketing: \$20,000.	20,000
	72200	Purchase of equipment / hardware including small boat for water quality / quantity monitor: \$89,244	89,244
	72200	Purchase of five firefighting backpacks to be used by first responders \$5,000.00	5,000
	72200	Chairs / tables: inter-sectoral committee: \$1,500	1,500
	72200	Laboratory equipment and supplies for water monitoring program: \$16,932	16,932
23	72300	Promotional material and supply of plants and other resources: \$76,450	76,450
	72300	Resource materials and stationery (\$3,000) and supply of improved breeds (bees) (\$2,000). Total cost \$5,000	5,000
	72300	Provision of \$4,500 seed plants (\$1,700) material inputs and supplies (\$48,500): Total cost \$50,200	50,200
24	72500	Stationery: national stakeholders workshop: \$200	200
	72500	Prints (50) and stationery supply for watershed management plan (draft): \$650	650

	72500	Stationery supply for training of extension persons: \$300	300
	72500	Stationery supply: \$300	300
	72500	Resource material and stationery for climate change impacts, mitigation and adaptation response strategies: \$1,100	1,100
	72500	Stationery and printing for posttest evaluation of effectiveness of public awareness campaign: \$1,000	1,000
	72500	Stationery and resource materials: training farmers in export marketing: \$250	250
	72500	Stationery supplies for intersectoral committee: \$1,000	1,000
	72500	Resource material for trainees / resource managers: \$1,200	1,200
	72500	Rental of IT equipment and stationery supply: \$2,100	2,100
25	74100	Consultant fees: development of prosecution manual for SLM, SFM conservation enforcement: \$21,000	21,000
26	74200	Promotional materials, editing design etc.: \$8,800	8,000
	74200	Publication costs for 200 copies at watershed management plan: \$3,000	3,000
	74200	Printing, stationery for production of prosecutors manual: \$2,500	2,500
	74200	Medial print and stationery cost: public awareness campaign: \$12,000	12,000
	74200	Public / disseminate 1000 copies of final traditional knowledge / BMP document \$4,000	4,000
	74200	Communications of MNNIB and farmers for marketing engagements: \$500	500
27	74500	Enhanced management for Mt. St. Catherine TPA: \$10,289	10,289

28	75700	Consultant fees (\$1,000) planting materials (\$23,000) materials inputs in support of labour and professional services (\$20,000), stationery and other materials (\$300) for training in sustainable rangeland management: \$44,300 (total cost) Venue / catering cost for training of livestock farmers in sustainable practices in rangeland management \$1,300. Total cost: \$45,600	45600
	75700	Training of resource managers / extension officers in good agricultural practices: \$2,000	2000
	75700	Training workshops: a. Training of extension officers in agricultural practices: \$5,000 b. Training for applications of good agricultural practices: \$300	5300
	75700	Host seven community-based workshop / consultation to review / update NFP (\$3,140) to validate report on NFP (\$1,150) to host five national consultations on finalized draft legislation and SROs (\$3,850). Total cost \$8,140	8,140
	75700	Engagement / training of intersectoral committee: \$7,950	7,950
	75700	Engagements for generating a watershed management plan for Beausejour watershed: \$4,100	4,100
	75700	Development of national system for assessing and mapping land degradation monitoringLD processes and consolidating information systems and protocols: \$4,800	4,800
	75700	Consultant fees and support: training 25 resource managers in BD asset identification and mapping in the pilot area: \$18,300.	18,300
	75700	Facilities rental for product inspection; certification processing, product formulation etc.: \$5,600	5,600
	75700	Training workshops for agriculture / fishers personnel in ARC, GIS, Google mapping software for BD Conservation, focusing on endangered and endemic species: \$10,000	10,000

	75700	Venue and catering costs: training in good agricultural practices: \$4,440	4,440
	75700	Venue / catering costs: training for forestry, fisheries and physical planning officers etc. in BD, SLM, SFM enforcement and use of regulatory instrument: \$4,900	4,900
	75700	Catering costs: climate change impacts, migration ad adoption strategies, sensitization workshop seminars for agricultural officers, fisheries, forestry, ministry of works officers etc.: \$1,300	1,300
	75700	Community seminars / meeting: \$10,000	10,000
	75700	Capacity development by field interventions in the pilot project area: \$18,250	18,250
	75700	Training for product branding, labeling and packaging: \$3,600	3,600
	75700	Venue / catering costs for training of farmers in sustainable agricultural practices: \$5,900	5,900
Project Management			
Budget Note	Atlas Code	Description	Amount
29	71400	Project coordinator (managerial inputs corresponding to \$13,841 or 10% of the incumbent's time).	13,841
30	71400	Project administrator/financial officer: Responsible for financial management of the project, accounting, purchasing, and reporting. (30% of the incumbent's time: \$25,200).	25,200
31	71400	Secretary: Overall project administrative assistance. Total cost: 42,000	42,000

32	74599	Estimated costs of Direct Project Services requested by the GoG to UNDP for executing services (procurement; travel etc) and as requested by the GoG through the Letter of Agreement (Annex 13). Direct project service costs will be charged at the end of each year based on the UNDP Universal Pricelist (UPL) or the actual corresponding service cost. The amounts indicated here are estimations based on the services indicated in Annex 13, however as part of annual project operational planning the direct project services to be requested during that calendar year would be defined and the amount included in the yearly budgets. As noted these costs would be charged based on actual services provided at the end of the year and would be reported to the implementing partners (GoG).	58,800
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SECTION IV: MANAGEMENT ARRANGEMENTS

Project Implementation Arrangements

138. The project will be executed under National Implementation Modality (NIM), with execution by the Ministry of Agriculture, Lands, Forestry, Fisheries and the Environment, following UNDP's Programme and Operations Policies and Procedures, per its role as implementing agency. Execution of the project will be subject to oversight by a Project Steering Committee, detailed below. Day to day coordination will be carried out under the supervision of a Project Coordination Unit and corresponding staff, also detailed below. The executing agency will take responsibility for different outcomes/activities according to existing capacities and field realities, ensuring effective and efficient use of GEF resources.

139. Ministry of Agriculture, Lands, Forestry, Fisheries and the Environment (MoA) is the official project Executing Agency, responsible for the fulfilment of the project's results. In addition, the Government of Grenada has designated the MLFEE as the official counterpart of UNDP in the country. Its main responsibilities related to the project are to:

- Lead the project implementation with the support of the Project Coordination Unit (PCU);
- Participate together with UNDP, in selecting the Project Coordinator;
- Designate a representative to act as a permanent liaison between UNDP, the Ministry of Foreign Affairs and the Project Coordinator, and to participate in the Project Steering Committee meetings, and others as required, to ensure that the necessary inputs are available to execute the project;
- Prove the technical and administrative capacity to develop the project;
- Monitor the project's work plan and progress;
- Provide the name and describe the functions of the person or persons authorized to deal with UNDP concerning the project's matters;
- Approve ToR for technical personnel and consultancies for project implementation;
- Participate in the selection process of the consultants and approve all hiring and payment request;
- Provide the name and describe the functions of the person or persons authorized to sign the project's budget and/or substantive revisions of the project.
- Coordinating the activities of all other project partners, and providing overall technical oversight of programs and outputs of project contractors and short-term consultants (with the support of the PCU).
- If necessary, to make a written request to UNDP for reports on the project;
- To approve the annual audit plan for the project and, in accordance with UNDP standards and procedures, to convene an information and consultation meeting prior to the audit;
- As required, to participate in tripartite meeting or in any follow-up or reorientation sessions.

140. The United Nations Development Programme (UNDP) is the world development network established by the United Nations with a mandate to promote development in countries and to connect them to the knowledge, experience and resources needed to help people achieve a better life. Its main responsibilities related to the project are to:

- Designate a programme officer responsible for providing substantive and operational advice and to follow up and support the project's development activities;
- Advise the project on management decision making, as well as to guarantee quality assurance;
- Be part of the project's Steering Committee and other Committees or Groups considered part of the project structure;

- Administer the financial resources agreed in the budget / workplan and approved by the project's Steering Committee; monitor financial expenditures against project budgets / workplans; and oversee the provision of financial audits of the project;
- Oversee the recruitment and hiring of project staff, the selection and hiring of project contractors and consultants; and the appointment of independent financial auditors and evaluators;
- Co-organize and participate in the events carried out in the framework of the Project;
- Use national and international contact networks to assist the project's activities and establish synergies between projects in common areas and/or in other areas that would be of assistance when discussing and analysing the project;
- Provide Support in the development and instrumentation of the project's gender strategy.
- Ensure that all project activities, including procurement and financial services, are carried out in strict compliance with the procedures of the UNDP / GEF.

141. Component 2 of the project is focused on site-based interventions at various existing and proposed terrestrial and marine protected area sites. During the first two to three years of the project, implementation of the project at these sites will be led by those agencies currently responsible for the sites, namely: the Forestry and National Parks Department (FNP); Land Use Division (LUD); and the Fisheries Division (FD), all of which have designated staff to lead their institutional efforts for the project. By the final year of the project, the newly established Protected Areas Agency (PAA) is expected to take over responsibility for the PA sites. Details on the roles and responsibilities of these and other potential project partners will be further elucidated during the project inception phase, based on relevant activities established in the project work plan.

142. Project implementation will be carried out under the general guidance of a Project Steering Committee (PSC), which will be co-chaired by UNDP and MoA and will meet at least twice per year to review project progress and approve upcoming work plans and corresponding budgets. Other members of the PSC will include: DFNP; DF; LUD and Ministry of Tourism. Representatives of other stakeholders may also be included in the PSC, as deemed appropriate and necessary (the membership of the PSC will be reviewed and recommended for approval at the project Inception Workshop).

143. The PSC will be in charge of the overall supervision of the project, providing strategic guidance for its implementation, ensuring that this proceeds in accordance with a coordinated framework of government policies and programs, and in accordance with the agreed strategies and targets laid out in this Project Document. The responsibilities of the PSC shall include, but not be limited to: (1) Review, approve and amend this project document, including the Monitoring and Evaluation (M&E) framework, the budget, and the implementation plan; (2) Monitor compliance with the Project's objectives; (3) Discuss progress and identify solutions to problems facing any of the project's partners; (4) Review and approve the AWP and the consolidated financial and progress reports; (5) During the life of the project, review proposals for major budget re-allocation such as major savings or cost increases, or for use of funds for significantly different activities; (6) Review evaluation findings related to impact, effectiveness and the sustainability of the project; (7) Monitor both the budget and the prompt delivery of financial, human and technical inputs to comply with the work plan; (8) Ensure the participation and ownership of stakeholders in achieving the objectives of the project; (9) Ensure communication of the project and its objectives to stakeholders and the public; (10) Approve the project communication strategy and public information plans prepared by the PSC; (11) Facilitate linkages with high-level decision making; (12) Convene ordinary meetings to consider the Technical Committee's proposals and recommendations, as well as the progress made by the project; (13) approve and supervise the hiring and work of project staff; and (14) Convene, if necessary, extraordinary meetings.

144. The PSC plays a critical role in project monitoring and evaluations by quality assuring these processes and products, and using evaluations for performance improvement, accountability and learning. It ensures that required resources are committed and arbitrates on any conflicts within the project or negotiates a solution to any problems with external bodies. In addition, it approves the appointment and responsibilities of the Project Manager and any delegation of its Project Assurance responsibilities. Based on the approved Annual WorkPlan, the PSC can also consider and approve the quarterly plans (if applicable) and also approve any essential deviations from the original plans. In order to ensure UNDP's ultimate accountability for the project results, PSC decisions will be made in accordance to standards that shall ensure management for development results, best value money, fairness, integrity, transparency and effective international competition. In case consensus cannot be reached within the PSC, the final decision shall rest with the UNDP Project Manager.

145. The National Project Director (NPD), a senior staff member of MoSD, will be responsible for oversight of the Project and carries overall responsibility and accountability. The NPD will keep the PSC updated on project advances and challenges as needed, and will report to the PSC on progress made and issues to be resolved. The NPD will establish and provide overall guidance to the PCU, and is responsible for overseeing the work undertaken by the PCU team. The NPD will submit relevant documentation to the PSC for endorsement.

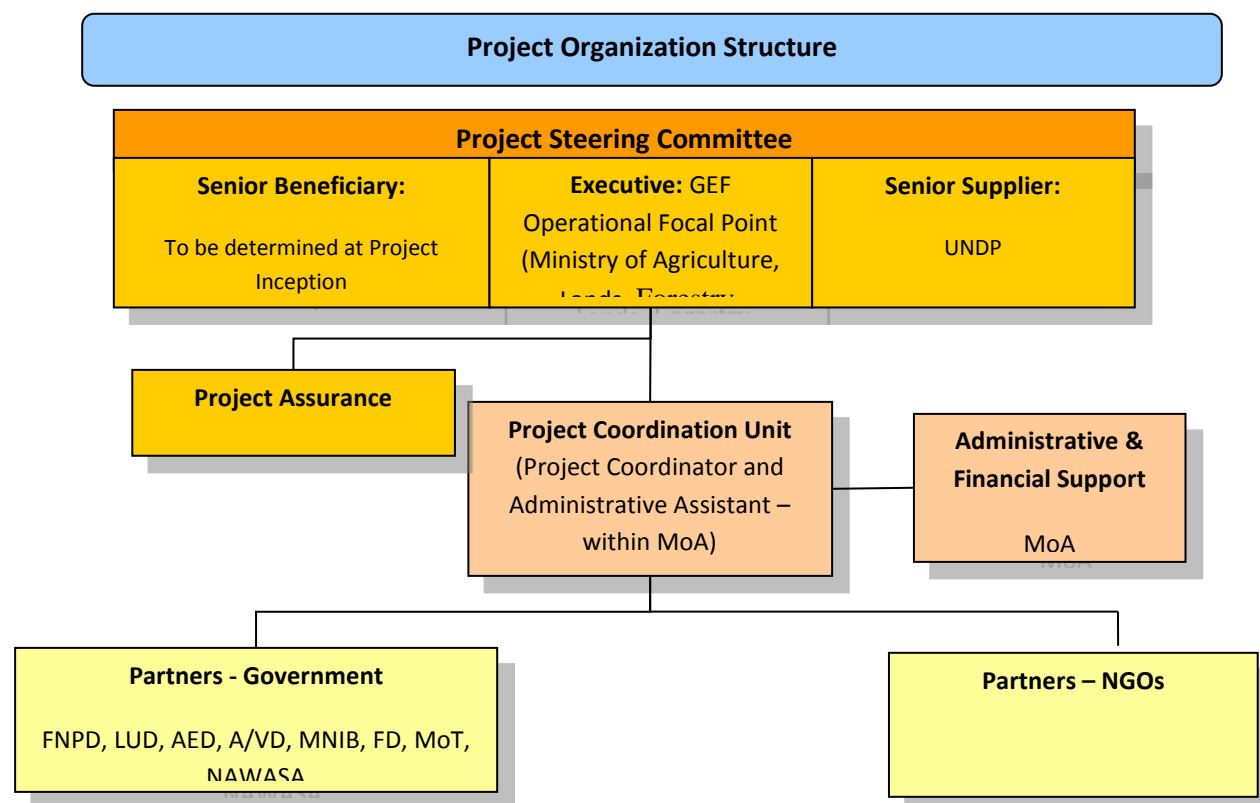
146. Day-to-day management and coordination of the project will be under the supervision of the Project Coordinator (PC). The PC will report to the NPD (Project Director). The PC will be supported by an Administrative Assistant. The PC will be responsible for the general management actions of the project, such as the preparation of consolidated annual work plans and technical and financial reports to be presented to the PSC, with the aim of ensuring that advances in relation to the goals and key milestones of the project are achieved as planned. Additional responsibilities of the PC will include: overall integration and follow-up of studies, research and project technical activities; assisting in the supervision of project implementation (liaising directly with the NPD); undertaking quarterly operational planning and providing guidance on day-to-day implementation; and ensuring institutional coordination among the project partner institutions and organizations.

147. In addition to the Project Coordinator, Administrative Assistant, and the staff of various partner institutions who will participate in specific project activities, a series of short and medium-term consultancy contracts will be necessary in order to implement some of the technical aspects of the project. Contracted companies and consultants will carry out targeted project activities under the technical supervision of the PCU and MoA, and in coordination with relevant partners for different activities. Terms of reference will be developed jointly by the PCU and MoA and approved by the PSC in accordance with approved work plans.

148. The figure below presents the project organogram, showing the relationships between the main institutions to be involved with project implementation and the bodies to be established by the project, as per UNDP project requirements:

- Executive (UNDP): individual representing the project ownership to chair the group.
- Senior Supplier (Ministry of Agriculture, Lands, Forestry, Fisheries and the Environment): Individual or group representing the interests of the parties concerned that provide funding for specific cost sharing projects and/or technical expertise to the project. The Senior Supplier's primary function within the Board is to provide guidance regarding the technical feasibility of the project.
- Senior Beneficiary (To be determined): individual or group of individuals representing the interests of those who will ultimately benefit from the project. The Senior Beneficiary's primary function within the Board is to ensure the realization of project results from the perspective of project beneficiaries.

- **Project Assurance (UNDP):** Supports the Project Board Executive by carrying out objective and independent project oversight and monitoring functions. The Project Manager and Project Assurance roles should never be held by the same individual for the same project. A UNDP Staff member typically holds the Project Assurance role.



Responsible Party

149. The project will be implemented under the NIM modality where the Implementing Partner is MoA, following the standards and regulations of the United Nations Development Programme (UNDP), the implementing agency of this project. The Implementing Partner is the entity responsible for the project outcomes, and who is accountable for its management, including monitoring and evaluation activities, the achievement of outputs and effective use of resources. A single Implementing Partner is designated to lead each project. This Partner may establish agreements with other organizations or entities in order to support the achievement of the outputs envisaged in the project, this/these other/s instance/s is/are called: Responsible Party (ies). The Responsible Party is designated by the Implementing Partner to support the implementation, planning and / or monitoring of certain activities / components within the project's framework, using their technical skills and management services to support the achievement of project objectives. Project partners will assume responsibility for the different outcomes and outputs expected from the project, carrying out activities related to their actual capabilities in the field, ensuring effectiveness and efficiency of GEF funding. An Implementation Agreement will be signed between the Implementing Partner and the Responsible Party during the project inception phase.

Financial and other procedures

150. The financial arrangements and procedures for the project are governed by the UNDP rules and regulations for National Implementation (NIM). Financial transactions will be based on direct requests to UNDP from the National Project Director and/ or Project Coordinator for specific activities (included in work plans and financial reports) and for advances for petty cash where necessary and considering the difficulties of implementation in many remote areas. The arrangements for financial reporting, requests for transfer of funds, and the advance and disbursement of funds will, in turn, be detailed in MOUs between MoA and its implementing partners. All procurement and financial transactions will be governed by national rules and regulations, and must be compatible with the UNDP rules and regulations.

151. Dollarization clause: "The value of any contribution received by the United Nations Development Programme as part of this Agreement, and which is made in a currency other than the U.S. Dollar, is determined by applying the operational rate of the United Nations prevailing on the date that such payment is made effective. If there is a change in the operational rate of the United Nations before UNDP uses the entire amount paid, the balance will be adjusted according to the value of the currency at that date."

152. If a loss is registered in the value of the fund balance, UNDP shall inform the Donor with a view to determining whether the donor has to provide more funding. Without having any such additional funding, UNDP may reduce, suspend or terminate assistance to the program / project. In the case where there is an increase in the value of this balance, this increase will go to the project to implement its activities, in agreement with the donor.

153. All accounts and all financial statements are expressed in U.S. dollars. The exchange rate used in each case shall be the monthly exchange rate set by the UN in the OECS. Notwithstanding the foregoing, payments to suppliers are made in local currency. In cases where the total contributions exceed the total reference amount, a budgetary review of the project will be carried out as per UNDP requirements.

Direct Project Services

154. In its role as GEF Implementing Agency (IA) for this project, UNDP shall provide project cycle management services as defined by the GEF Council (described in Annex 13). The Government of Grenada shall request UNDP to provide direct project services specific to project inputs according to its policies and convenience. These services –and the costs of such services - are specified in the Letter of Agreement in Annex 13. In accordance with GEF Council requirements, the costs of these services will be part of the executing entity's Project Management Cost allocation identified in the project budget. UNDP and the Government of Grenada acknowledge and agree that these services are not mandatory and will only be provided in full accordance with UNDP policies on recovery of direct costs.

Audit Clause

155. The Government of Grenada will provide the UNDP Resident Representative in Barbados with certified periodic financial statements, and with an annual audit of the financial statements relating to UNDP (including GEF) funds according to the established procedures set out in the Programming and Finance manuals. The Audit will be conducted by the legally recognized auditor of the Government, or by a commercial auditor

engaged by the Government. The firm will be selected through a bidding process and will be subjected to a rigorous evaluation within the principles of transparency, neutrality and cost benefit.

156. The project will be audited in accordance with the UNDP Financial Regulations and Rules and applicable audit policies. An audit to the Project is an integral part of UNDP financial and administrative management within the framework of UNDP's accountability, internally and with regards to the GEF. The project will be audited to ensure that resources are administered in accordance with the financial regulations of the project document, workplan and budget. The project's budget should contemplate the resources needed to carry out the audit. The firm selected by UNDP Barbados, through a bidding process and subjected to a rigorous evaluation within the principles of transparency, neutrality and cost benefit will take over this exercise in accountability.

Communications and visibility requirements

157. Full compliance is required with UNDP's Branding Guidelines. These can be accessed at <http://intra.undp.org/coa/branding.shtml>, and specific guidelines on UNDP logo use can be accessed at: <http://intra.undp.org/branding/useOfLogo.html>. Amongst other things, these guidelines describe when and how the UNDP logo needs to be used, as well as how the logos of donors to UNDP projects need to be used. For the avoidance of any doubt, when logo use is required, the UNDP logo needs to be used alongside the GEF logo. The GEF logo can be accessed at: http://www.thegef.org/gef/GEF_logo. The UNDP logo can be accessed at <http://intra.undp.org/coa/branding.shtml>.

158. Full compliance is also required with the GEF's Communication and Visibility Guidelines (the "GEF Guidelines"). The GEF Guidelines can be accessed at: [http://www.thegef.org/gef/sites/thegef.org/files/documents/C.40.08_Branding the GEF%20final 0.pdf](http://www.thegef.org/gef/sites/thegef.org/files/documents/C.40.08_Branding_the_GEF%20final_0.pdf). Amongst other things, the GEF Guidelines describe when and how the GEF logo needs to be used in project publications, vehicles, supplies and other project equipment. The GEF Guidelines also describe other GEF promotional requirements regarding press releases, press conferences, press visits, visits by Government officials, productions and other promotional items.

159. Where other agencies and project partners have provided support through co-financing, their branding policies and requirements should be similarly applied.

Administrative arrangements

160. The project will be financed by the GEF with a total amount of US\$3,031,666. The Government of Grenada has committed cash co-financing to the Project to an amount of US\$15,426,822. These resources will mainly be used for salaries, travel expenses, equipment, programs and subsidies, and basic operation and management expenses of the various project partner agencies that are participating in activities related to protected areas management. To coordinate the spending of these resources with the GEF funds provided to the project, UNDP will make its installed capacity available to the Project, guaranteeing that their use is both transparent and prompt, with any services provided to the project by UNDP will be in accordance with its internal guidelines and regulations.

SECTION V: MONITORING & EVALUATION

160. Project M&E will be conducted in accordance with the established UNDP and GEF procedures and will be provided by the project team and the UNDP Sub-regional office with support from the UNDP/GEF (Regional Coordinating Unit) in Panama City. The Project Results Framework in Section 3 provides performance and impact indicators for project implementation along with their corresponding means of verification. The M&E plan includes an inception report, project implementation reviews, quarterly and annual review reports, mid-term and final evaluations, and audits. The following sections outline the principle components of the M&E plan and indicative cost estimates related to M&E activities. The project's M&E plan will be presented and finalized in the Project Inception Report following a collective fine-tuning of indicators, means of verification, and the full definition of project staff M&E responsibilities. The project will be monitored through the following M& E activities. The M& E budget is provided in the table below.

Project start: A Project Inception Workshop will be held within the first 2 months of project start with those with assigned roles in the project organization structure, UNDP Sub-Regional Office and where appropriate/feasible regional technical policy and program advisors as well as other stakeholders. The Inception Workshop is crucial to building ownership for the project results and to plan the first year annual work plan.

The Inception Workshop will address a number of key issues including: (a) Assist all partners to fully understand and take ownership of the project. (b) Detail the roles, support services and complementary responsibilities of UNDP Sub-Regional Office and RSC staff vis à vis the project team. (c) Discuss the roles, functions, and responsibilities within the project's decision-making structures, including reporting and communication lines, and conflict resolution mechanisms. (d) The Terms of Reference (TOR) for project staff will be discussed again as needed. (e) Based on the project results framework and the relevant GEF Tracking Tool if appropriate, finalize the first annual work plan. Review and agree on the indicators, targets and their means of verification, and recheck assumptions and risks. (f) Provide a detailed overview of reporting, M&E requirements. The M&E work plan and budget should be agreed and scheduled. (g) Discuss financial reporting procedures and obligations, and arrangements for annual audit. (h) Plan and schedule Project Steering Committee (PSC) meetings. Roles and responsibilities of all project organization structures should be clarified and meetings planned. The first PSC meeting should be held within the first 2 months following the 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.

Project Implementation Workplan: Immediately following the inception workshop, the project will be tasked with generating a strategic workplan. The workplan will outline the general timeframe for completion of key project outputs and achievement of outcomes. The workplan will map and help guide project activity from inception to completion. To ensure smooth transition between project design and inception, the inception workshop and work planning process will benefit from the input of parties responsible for the design of the original project, including as appropriate relevant technical advisors.

Quarterly: Progress made shall be monitored in the UNDP Enhanced Results Based Management Platform. Based on the initial risk analysis submitted, the risk log shall be regularly updated in ATLAS. Risks become critical when the impact and probability are high. Based on the information recorded in Atlas, a Project Progress Report (PPR) can be generated in the Executive Snapshot. Other ATLAS logs can be used to monitor issues, lessons learned etc. The use of these functions is a key indicator in the UNDP Executive Balanced Scorecard.

Annually (Annual Project Review/Project Implementation Reports (APR/PIR)): This key report is prepared to monitor progress made since project start and in particular for the previous reporting period (30 June to 1 July). The APR/PIR combines both UNDP and GEF reporting requirements.

The APR/PIR includes, but is not limited to, reporting on the following: (a) Progress made toward project objective and project outcomes - each with indicators, baseline data and end-of-project targets (cumulative); (b) Project outputs delivered per project outcome (annual); (c) Lesson learned/good practice; (d) AWP and other expenditure reports; (e) Risk and adaptive management; (f) ATLAS QPR; (g) Portfolio level indicators (i.e. GEF focal area tracking tools) are used by most focal areas on an annual basis as well.

Periodic Monitoring through site visits: UNDP Sub-Regional Office and the RSC will conduct visits to project sites based on the agreed schedule in the project's Inception Report/Annual Work Plan to assess first hand project progress. Other members of the PSC may also join these visits. A Field Visit Report/BTOR will be prepared by the UNDP Sub-Regional Office and UNDP RSC and will be circulated no more than one month after the visit to the project team and PSC members.

Mid-term of project cycle: The project will undergo an independent Mid-Term Review during mid-point of project implementation (project months 28 – 29). The Mid-Term Review 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 project's term. The organization and terms of reference of the mid-term review will be decided after consultation between the parties to the project document. The TOR for this Mid-term review will be prepared by the UNDP Sub-Regional Office based on guidance from the RSC and UNDP-GEF. This independent expert will be recruited at least six months prior to the planned commencement of the mid-term review. The management response and the review will be uploaded to UNDP corporate systems, in particular the [UNDP Evaluation Office Evaluation Resource Center \(ERC\)](#). The relevant GEF Focal Area Tracking Tools will also be completed during the mid-term review cycle.

End of Project: An independent Final Evaluation will take place three months prior to the final PSC meeting and will be undertaken in accordance with UNDP and GEF guidance. The final evaluation will focus on the delivery of the project's results as initially planned (and as corrected after the mid-term review, 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 TOR for this evaluation will be prepared by the UNDP Sub-Regional Office based on guidance from the RSC and UNDP-GEF.

The Final Evaluation should also provide recommendations for follow-up activities and requires a management response which should be uploaded to PIMS and to the [UNDP Evaluation Office Evaluation Resource Center \(ERC\)](#). The relevant GEF Focal Area Tracking Tools will also be completed during the final evaluation.

During the last three months, the project team will prepare the 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 project's results.

Learning and knowledge sharing: Results from the project will be disseminated within and beyond the project intervention zone through existing information sharing networks and forums. The 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 through 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 project and other projects of a similar focus.

Communications and Visibility Requirements

The project will comply with UNDP's Branding Guidelines, which can be accessed at:

<http://intra.undp.org/coa/branding.shtml>.

Specific guidelines on UNDP logo use can be accessed at: <http://intra.undp.org/branding/useOfLogo.html>. Amongst other requirements, these guidelines describe when and how the UNDP and the logos of donors to UNDP projects are used. For the avoidance of any doubt, when logo use is required, the UNDP logo needs to be used alongside the GEF logo. The [GEF logo](#) can be accessed at:

http://www.thegef.org/gef/GEF_logo

Full compliance will also be observed with the GEF's Communication and Visibility Guidelines (the "GEF Guidelines"), which can be accessed at:

http://www.thegef.org/gef/sites/thegef.org/files/documents/C.40.08_Branding_the_GEF%20final_0.pdf.

These guidelines describe when and how the GEF logo needs to be used in project publications, vehicles, supplies and other project equipment. These Guidelines also describe other GEF promotional requirements regarding press releases, press conferences, press visits, visits by Government officials, productions and other promotional items. Where other agencies and project partners have provided support through co-financing, their branding policies and requirements will be similarly applied.

Audit Clause

The project will be audited in accordance with the UNDP Financial Regulations and Rules and applicable audit policies.

M&E Workplan and Budget

Type of M&E activity	Responsible Parties	Budget US\$ <i>Excluding project team staff time</i>	Time frame
Inception Workshop	<ul style="list-style-type: none"> Project Coordinator UNDP Sub-Regional Office UNDP GEF 	<ul style="list-style-type: none"> Indicative cost: 5,000 	Within first two months of project start-up
Inception Report	<ul style="list-style-type: none"> Project Team UNDP Sub-Regional Office 	<ul style="list-style-type: none"> None 	Immediately following IW (within 2 months after IW)
Measurement of Means of Verification of project results	<ul style="list-style-type: none"> Project Coordinator (with support/advice from UNDP/GEF RTA) will oversee the hiring of specific studies and institutions, and delegate responsibilities to relevant team members 	<ul style="list-style-type: none"> To be determined during the initial phase of implementation of the project and the IW 	Start, mid-point, and end of project
Measurement of Means of Verification for Project Progress on <i>output and implementation</i>	<ul style="list-style-type: none"> Oversight by Project Coordinator Project team 	<ul style="list-style-type: none"> None 	Annually prior to ARR/PIR and to the definition of annual work plans
ARR/PIR	<ul style="list-style-type: none"> Project Coordinator and Team UNDP Sub-Regional Office UNDP GEF 	<ul style="list-style-type: none"> None 	Annually
Periodic status/ progress reports	<ul style="list-style-type: none"> Project Coordinator and Team 	<ul style="list-style-type: none"> None 	Quarterly

Type of M&E activity	Responsible Parties	Budget US\$ <i>Excluding project team staff time</i>	Time frame
Tripartite Committee Reviews and Reports	<ul style="list-style-type: none"> GoG counterparts UNDP/GEF 	<ul style="list-style-type: none"> None 	Annually, upon receipt of APR/PIR
Steering Committee/Board Meetings	<ul style="list-style-type: none"> Project Coordinator UNCP-Sub-Regional Office GoG representatives 	<ul style="list-style-type: none"> 2,500 (GEF) 3,000 (CoF) 	Following IW, and subsequently at least twice per year
Mid-term Review, including update of METT and ESSP	<ul style="list-style-type: none"> Project Coordinator and Team UNDP-Sub-Regional Office UNDP/GEF RCU External Consultants (evaluation team) 	<ul style="list-style-type: none"> Indicative cost: 32,468 	At the mid-point of project implementation.
Final Evaluation, including final METT and ESSP	<ul style="list-style-type: none"> Project Coordinator and Team UNDP-Sub-Regional Office UNDP/GEF RCU External Consultants (evaluation team) 	<ul style="list-style-type: none"> Indicative cost : 40,468 	At least three months before the end of project implementation
Project Terminal Report	<ul style="list-style-type: none"> Project Team UNDP-Sub-Regional Office 	<ul style="list-style-type: none"> None 	At least three months before the end of the project
Lessons learned	<ul style="list-style-type: none"> Project Coordinator and Team UNDP-GEF RCU (suggested formats for documenting best practices, etc.) 	<ul style="list-style-type: none"> 5,000 (GEF) 4,000 (CoF) Indicative Cost Cost:US\$9,000 	Yearly
Audit	<ul style="list-style-type: none"> UNDP-Sub-Regional Office Project Coordinator and Team Auditors 	<ul style="list-style-type: none"> 15,000 (indicative cost per year: 3,000) 	Annually
Visits to field sites	<ul style="list-style-type: none"> UNDP CO UNDP RSC (as appropriate) Government representatives 	<ul style="list-style-type: none"> For GEF supported projects, paid from IA fees and operational budget 	Annually
TOTAL indicative COST Excluding project team staff time and UNDP staff and travel expenses		US\$ 100,436 (+/- 3.3% of total budget)	

STAKEHOLDER INVOLVEMENT PLAN

Stakeholder Participation during Project Preparation

161. The project preparation phase involved exercises for identification of the project framework with participation of key Government departments, NGOs, CBOs and volunteer consultants. The consultants under the direction of UNDP and in collaboration with the Government of Grenada's indicative implementing agency, Ministry of Agriculture and Environment, commenced and outreach initiative to generate stakeholder awareness of the project as defined in the approved project identification form as (Basic Design).

162. The task of the consultants was to reintroduce the project to all stakeholders (i.e. including all the relevant Government agencies expected to participate within the 5 year project lifetime) and for the purpose of explaining details of the project as specified in the PIF in terms of:

- I. Meeting both Global and local objectives
- II. Government administrators and their technical staffs' obligations and responsibility to the project as a joint initiative of Government of Grenada and UNDP/GEF.
- III. Defining the constraints under which both Government UNDP/GEF must budget resource support for the PIF specified project activities;
- IV. Generating participation from stakeholders for articulating how GEF core funding might be spent and also articulating what co-financing resources might be needed for specific activities;
- V. Identifying, with stakeholders advise, how the co-management participation process should be undertaken;
- VI. Determining the existing capacity and willingness of NGOs and CBOs to participate in co-management initiatives of the project as designed by the PIF. Within the process for preparation of the full-sized project (FSP) a number of focus groups and formal meeting were conducted and included:
(a) the PPG Inception workshop; (b) Several results framework workshops; (c) Consultations with the Government's indicative project executing agency; (d) Meetings with key individuals from both Government agencies and CBOs / NGOs.

Inception workshop of the PPG phase

163. The PPG inception workshop was held 23rd July 2013 in St. Georges, Grenada. The participants included a representative from the Ministry of Finance and Planning (the Ministry that was originally responsible for the project), the UNDP/GEF representative from the sub-regional office Barbados, the UNDP/GEF Regional Technical Advisor from Panama, the three contract consultants, the local person from the forestry division (by Skype) and the local persons from the fisheries division. The objective for the workshop was to:

- (a) Help the PPG project team and other stakeholders to understand and take ownership of the project goals and objectives;
- (b) Ensure that the project team of consultants and other stakeholders have a clear understanding of what the PPG phase sought to achieve as well as their own roles in successfully carrying out PPG activities;
- (c) Rebuild commitment and momentum among key stakeholders for the PPG phase;
- (d) Validate the PPG work plan; and
- (e) Visit the Beausejour watershed to get a sense of the scope of issues that characterize the Ridge to Reef perspective of landscape to seascape environmental impacts.

Project results framework workshop

164. The objective of the focus group and individual engagements was to define projects activities in terms of outcomes and outputs and explain how each could potentially fit into planned project activities. Focus groups were held with stakeholders related to specific outcomes and outputs. Notably the task was to reintroduce the project to the implementing Ministry and commence a process of commitment to the planned activities to be articulated within the FSP formulation. The focus group of CBOs/NGOs engaged most of the non-governmental and community-based groups in discussions on their potential individual and collaborative roles in the execution of various defined activities as specified by the PIF and solicited their advice on the orientation with respect to co-management engagements.

Project Implementation

165. The a stakeholder participation plan has the following objectives:

To ensure full knowledge by those involved concerning the progress and obstacles in project development and to take advantage of the experience and skills of the participants to enhance project activities: (1) to clearly identify the basic roles and responsibilities of the main participation in this project; and (2) identify the key instances in the project cycle where stakeholder involvement can occur. The ultimate purpose of the stakeholder participation plan is the long-term sustainability of the project achievements based on transparency and the effective participation of key stakeholders.

Participation Mechanism

166. The three key phases for stakeholder participation in the implementation phase of the project are planning, implementation and evaluation:

- a. Project planning will include annual meetings with key PA stakeholders (including members of the SC) during which annual goals will be set for each component of the project. These annual planning meetings will also serve to specify the activities that are to be funded through each co-financing source.
- b. Project implementation will take place according to the annual plans that are approved by the SC which will be formed by the following agencies: Ministry of Agriculture Lands, Forestry, Fisheries and Environment, Ministry of Tourism, and the UNDP sub-regional Office. The UNDP sub-regional office will be the Executing Agency. Local stakeholders will have an additional mechanism to influence the project through a Local Steering Committee (LSC), which will consist of appointed members, and whose composition, responsibilities, and function will be determined by the stakeholders themselves. The LSC will meet regularly to discuss the project's progress and to communicate interests and concerns to the Project Coordinator. The committee will also have a seat on the Project Board/Project Steering Committee. Subject to confirmation at project inception, the LSC may also designate sub-committees to discuss specific issues such as the mainstreaming of gender considerations into project operations.
- c. Project evaluation will occur annually with the participation of key stakeholders at the end of each planning year and previous to defining the annual plan for the following year of project implementation. Also, Mid-term and final evaluations will be carried out as part of the project cycle. Due to the independent nature of these evaluations, they will be key moments during the project's life when stakeholders can express their views, concerns, and assess whether the project's outcomes are being achieved and if necessary, define the course of correction.

167. It is envisaged that, per UNDP procedures and practices, the project must be managed by a practices board or project steering committee constituted by UNDP and senior services providers as an external project

management body. Given that UNDP will treat project implementation as a partnership and allow the local executing agency, Ministry of Agriculture, Lands, Forestry, Fisheries and Environment, to adopt a management mechanism that is consistent with that of UNDP, then this local executing agency may set up a local steering committee to advise the project board through the local executing agency. This local steering committee may be set up constituting of representatives of MALFFE (chair), Ministry of Finance/Planning, Ministry of Tourism, IAGDO and CBO representatives. The project evaluation will occur annually with the participation of key stakeholders at the end of each year and before defining the annual work plan for the following year of project implementation. There will also be mid-term and final evaluation that will be carried out as part of the project cycle. Since the evaluation process will be an independent exercise, opportunity will be given for all stakeholders to express their views; concerns and assessing whether the projects outcomes were being achieved and if required suggest a change in the course of action.

168. It is therefore important that the views of the local steering committee be communicated to the project board/steering committee as a formatted documented response to questions and that such documentation be transparently communicated. Such a mechanism will allow for meaningful and focused periodic evaluations by both project management and stakeholders.

169. This Grenada Ridge to Reef project will be using the technical services of baseline recurrent programs while not having a technical support unit of its own. By design, the GEF core funding together with committed support of grant-aid agencies will act as incremental support to the baseline initiatives for the purpose of implementing activities in support of conservation and management of the BD and ecosystems functions within and around PA that would be enhanced and expanded.

Summary of Stakeholders Roles in Project Implementation

Stakeholders	Projects Implementation Role
Ministry of Agriculture Lands, Forestry, Fisheries, and Environment (MLFFE)	<p>The department of central government designated as executing agency for the implementation of the project on the local level and as agency of government with “command and control: over various technical divisions expected to deliver services essential to the delivery of the project. The divisions and their roles include the following:</p> <ul style="list-style-type: none"> • The Forest and National Parks Authority that is responsible for management and conservation of forest ecosystems that include. Landscape vegetation and wildlife and with a special focus on ecosystems services. The FNPDP is expected to administer SLM, SFM REDD+, BD and CC mitigation. Principles and practices in collaboration with various other experience of government by design various activities of the project will involve the FNPDP in co-management engagements with local area groups and NGOs, CBSs’. • The agency responsible for tracking the status and trends with regards to vegetative coverage, land uses and audit of water within the water source on all landscapes. The LUD will be charged with responsibilities for collaborating with other agencies of government for the application of SLM, SFM/RDD+, And CC mitigation principles and practices in collaboration with local area groups, NGOs/CBO, in INRM exercises. • The agency within the Ministry of Agriculture charge
Forestry and National Parks Department(FNPD)	
Land Use Division(LUD)	
Agricultural Extension Division (AED)	

	<p>with the responsibility for liaison with farmers for promotion of sustainable use of lands for production and for marketing of farmers' production, the AED will exercise key roles in mobilizing and animating farmers for applying SLM, SFM/REDD+, BD and CC mitigation practices in the content of mixed farming and INRM practices.</p>
Agronomy and Veterinary Division (A/VD)	<ul style="list-style-type: none"> • The agencies responsible for promoting efficiency in animal and plant production systems and for animal health and security. The A/VD will be charged with the task of promoting INRM through SLM, BD and CC mitigation practices.
Marketing and National Importing Board (MNIB)	<ul style="list-style-type: none"> • The MNIB as a para-statal/Statutory agency of government is mandated to facilitate marketing of farmers' production and for enhancing value-added for farm products. The MNIB will be expected to collaborate with various agencies within the Ministry Agriculture for promoting sustainable agricultural production especially with respect to the pilot project at Beausejour watershed.
Fisheries Division (FD)	<ul style="list-style-type: none"> • The agency responsible for the sustainable management and development of fish stocks habitat and sea space in the context of the marine environment that was traditionally utilized as a common property resource within an open access/ free entry regime. The FD will be charged with the task of leading in the process of establishment of MPAs in collaboration with various sea users in a highly contested common property zone. The FD will then have to collaborate with the community of dive services providers yachtsmen and fishers among others; they will also have to collaborate closely with land users and land management authorities together with local area groups in order to ensure SLM, SFM/REDD+, BD and CC mitigation and INRM practices are applied for minimizing adverse impacts from landscapes to seascapes.
Ministry of Tourism (MoT)	<ul style="list-style-type: none"> • The department of central government responsible for, among other things, the development/enhancement and management of tourist attraction sites, most of these sites form a part of earmarked or designated PAs. The park management unit of the MOT will collaborate with various other agencies for the establishment and expansion of PAs as either nature reserves or other attraction.
National Water and Sewerage Authority (NAWASA) Parastatal/ Statutory Agency)	<ul style="list-style-type: none"> • The agency of central government mandated to control surveillance and monitor all sequestration of water from any and all terrestrial water sources and also to collect and dispose of sewerage wastes. NAWASA therefore has a critical interest in the sustainable management of the water source and must directly cooperate with all the

<p>Regional and local Centers of Excellence in support of sustainable management and conservation of the BD and Ecosystems services</p> <p>St. George's University (SGU)</p> <p>CEHI</p> <p>CREMES</p> <p>UWI</p> <p>Recreation Dive-Services Providers</p> <p>Non-Government Organization (NGOs)</p> <p>Community-Based Organizations (CBOs)</p>	<p>agencies within the MALFFIE and others in the appreciation of SFM, SFM/REDD+ and BD and CC mitigation practicing for sustainable use of landscapes and seascapes.</p> <ul style="list-style-type: none"> • Academic and technical services institutions with special competences that could enhance sustainable management and conservation of the biodiversity and ecosystems services, with the appropriate enabling support would be able to assist the ridge to reef project in meeting specific objectives. These institutions, as specialized bodies, will be able to provide support that government agencies are unable to generate; sufficient competency in collaboration of local operation management agencies with such centers of excellence (COE) can be beneficial to both; training for local operations agencies and opportunity for COE to enhance their mission and competency. Among the institutions identified are: • SGU has some experience in monitor/measurements of land based sources of pollution • CEHI has competences and experiences in environmental monitor and measurement. • CREMES (Barbados) has experience in environmental measurement and monitoring. • UWI has experience in M/M also these institutions, having special skills competencies and knowledge can therefore collaborate with the local operations agencies notably, hand use, fisher's provision/MPA, NAWASA for satisfying certain specific objectives. • The association of dive-services providers together with independent dive services operations are expected to collaborate with the MPA coordinating authority, the fisheries division for the purpose of negotiating and adopting best management practices (BMP) in the utilization of coral reef habitats and sea spaces. • Professional non-profit bodies equipped with skills and experience for engaging local area, commonly groups and persons for the purpose of facilitating collaboration between Government agencies for funding agencies and these local area groups in order to apply the co-management approach for community-based INRM. • Organized groups of persons dedicating to promoting the interest of communities such as farmers or fishers or landowners/farmers or commercial services or goods suppliers such group will collaborate with NGOs and Government agencies for enhancing SLM, SFM/REDD+ BD and CC mitigation measures. Examples being the Grenada chamber of Industry and Commerce in its
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	support for the “outing “ of the use of GHG (Green House Gases); and concessionary loans for alternative energy sources such as solar panels.
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SECTION VI: LEGAL CONTEXT

170. This Project Document shall be the instrument referred to as such in Article of the Standard Basic Assistance Agreement (SBAA) between the Government of Grenada and the UNDP signed by the parties. The host country implementing agency shall, for the purpose of the SBAA, refer to the government cooperating agency described in that Agreement.

171. The UNDP Resident Representative in Grenada is authorized to effect in writing the following types of revision to this Project Document, provided that he/she has verified the agreement thereto by the UNDP-GEF Unit and is assured that the other signatories to the Project Document have no objection to the proposed changes: a) revision of, or addition to, any of the annexes in the Project Document; b) revisions which do not involve significant changes in the immediate objectives, outputs or activities of the project, but are caused by the rearrangement of the inputs already agreed to by cost increases due to inflation; c) mandatory annual revisions which re-phase the delivery of agreed project inputs or increased expert or other costs due to inflation or take into account agency expenditure flexibility; and d) inclusion of additional annexes and attachments only as set out here in this Project Document.

Annexes

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Annex 1. Additional Information on Biodiversity within the Project Area (by: S. Aucoin)

1. PROJECT OVERVIEW

Project “*Implementing a ‘Ridge to Reef’ Approach to Protecting Biodiversity and Ecosystem Functions within and around Protected Areas in Grenada*” (hereafter ‘ridge-to-reef project’) focuses on 22 documented sites of conservation interest and concern across Grenada and Carriacou (see *Project Identification Form—PIF*). The 22 sites cover a total area of ~16300 ha (163 km²), comprising ~3400 ha of land (~10 % of all land nationwide—344 km²) and ~12800 ha of coastal marine environment (bordering >25 % of the national coastline) (see Table 1).

Table 1: Total areal extent of ridge-to-reef project sites by current classification

Current classification ¹	Terrestrial area (ha)	Marine area (ha)	Total area (ha)
Designated protected area	2001	498	2499
Proposed/pending designation	237	752	989
Undesignated protected area	45	-	45
Proposed protected area	1160	11590	12750
Total area of 22 sites	3443	12840	16283

1. See below for description of classification/status

Classification/status of sites are summarized as follows:

Designated protected areas are officially protected sites—legally established with an approved management plan and/or actively managed.

Proposed/pending areas are sites that are currently under active initiatives to becoming established (e.g., within parliamentary process and/or have draft management plans).

Undesignated protected areas are sites where management activities have been put in place and are treated as designated protected areas, but have no true legal establishment (i.e., unofficial/not legislated).

Proposed protected areas are recognized priority areas of conservation interest planned by the ridge-to-reef project, as well as emphasized by seminal country reports *Plan and Policy for a System of National Parks and Protected Areas* (Huber and Vincent 1988) and *Grenada Protected Area System Plan* (Turner 2009).

The following Table 2 profiles the current classification/status at each of the 22 ridge-to-reef project sites and indicates their areal extent. Corresponding maps 1, 2, and 3 identify ridge-to-reef site locations (with their existing borders or projected boundaries) showing land classes and habitat types within and around project sites.

Annex 1: Additional Information on biodiversity within the project area (by: S. Aucoin)

Table 2: Ridge-to-reef project site profiles

Official name / current designation / site status	Land (ha)	Sea (ha)	Total area (ha)	Source
Protected Area legally designated/established, approved management plan, actively managed				
Perseverance Protected Area ¹	113	-	113	Management plan
Grand Etang Forest Reserve	~1600	-	~1600	Management plan
Annandale Forest Reserve	236	-	236	Management plan
High North Forest Reserve	52	-	52	GPASP ²
Moliniere-Beausejour Marine Protected Area	-	60	60	Management plan
Woburn Clarks Court Bay Marine Protected Area	-	438	438 ⁴	Management plan
Pearls	-	-	To be determined	GPASP ²
Proposed/pending designation active initiatives, draft management plan, in parliamentary process				
Beausejour Protected Area	60	-	60	Management Plan
Sandy Island/Oyster Bed Marine Protected Area	50 ³	737	787	Management plan
Mt. Hartman National Park and Protected Area ⁵	62	-	62	GPASP ² , PIF ⁷
Levera Pond Protected Area	65	15	80 ⁶	Management Plan
Undesignated protected area existing management activities, but no management plan; lacks legislative designation				
Morne Gazo	25	-	25	GPASP ²
Richmond Hill	8	-	8	GPASP ² , PIF ⁷
Grand Bras	4	-	4	GPASP ² , PIF ⁷
Mt. Moritz	8	-	8	GPASP ² , PIF ⁷
Proposed protected area priority area of interest established; projected initiatives				
Mt. St. Catherine	1000	-	1000	GPASP ² , PIF ⁷
High North addition	-	160	160	GPASP ²
Levera marine area addition	25 ⁸	725	750	GPASP ² , PIF ⁷
Moliniere-Beausejour marine area addition	-	240	240	PIF ⁷
White Island marine area	130 ⁹	1970	2100	GPASP ² , PIF ⁷
Grand Anse marine area	-	1500	1500	GPASP ² , PIF ⁷
Southeast Coast marine area	5 ¹⁰	6995	7000	GPASP ² , PIF ⁷

1. Revised name: Perseverance Protected Area and Dove Sanctuary (unofficial)
2. Grenada Protected Area System Plan (Turner 2009)
3. Includes southeast mainland areas of mangroves, Mabouya and Sandy islands
4. Excludes Hog and Calivigny islands; includes yacht mooring areas
5. Revised name: Mt. Hartman National Park and Dove Sanctuary (unofficial)
6. Includes Sugar Loaf Island and area between Sugar Loaf Island and Levera Beach
7. *Ridge-to-Reef Project Identification Form*
8. Includes Green and Sandy islands
9. Includes White, Saline, Frigate, and Bird islands
10. Glover Island

2. MARINE AREAS

Annex 1: Additional Information on biodiversity within the project area (by: S. Aucoin)

Knowledge of the areal extent and distribution of ecosystems is essential in the implementation of ‘ridge-to-reef’ approaches to conservation (Douvere and Ehler 2009, Baldwin and Mahon 2011). Available information on ecosystems critical for conservation (coral reefs, seagrass beds, mangroves) for marine project sites is summarized in Table 3. Percentage shown indicates the estimated proportion of these ecosystems present at each ridge-to-reef marine project site (i.e., within existing site borders or projected site boundaries) in relation to total nationwide extent (see Maps 1 and 2). In summary, the ~12800 ha of coastal marine environment covered by the ridge-to-reef project (see Table 1, Maps 1 and 2) includes: 34 % of the estimated total coral reef area, 51 % of the estimated seagrass area, and 67 % of the estimated mangrove area nationwide.

Table 3: Areal extent of marine ecosystems critical for conservation in Grenada in relation to ridge-to-reef project sites

Estimated area from available GIS data						
GRENADA	Reef Area 3052 ha¹	%	Seagrass 894 ha¹	%	Mangrove 172 ha²	%
Moliniere-Beausejour MPA	7	0.2	0	-	0.1	0.05
Moliniere-Beausejour addition	77	3	0	-	n/a	-
Woburn Clarks Court Bay MPA	77	3	127	14	9	5
Levera Pond & Levera addition	172	6	0	-	37	22
Grand Anse	177	6	134	15	0.4	0.2
Southeast Coast	954	31	226	25	79	46
Project area for Grenada	1464 ha	49 %	487 ha	54 %	126 ha	73 %

CARRIACOU	Reef Area 2043 ha¹	%	Seagrass 407 ha³	%	Mangrove 112 ha^{1,4}	%
Sandy Island/Oyster Bed MPA	22	1	80	20	34	30
White Island	268	13	93	23	9	8
High North addition	n/a	n/a	n/a	n/a	21	20
Project area for Carriacou	290 ha	14 %	173 ha	43 %	64 ha⁴	58 %

Grenada + Carriacou	Reef Area 5095 ha¹	%	Seagrass 1301 ha³	%	Mangrove 284 ha⁵	%
Ridge-to-reef project area covered nationwide	1754 ha	34	660 ha	51	190 ha	67 %

n/a: not applicable

1. GIS data from the Land Use Division of the Ministry of Agriculture, Lands, Forestry and Fisheries (Grenada) and crossed referenced with other available sources (e.g., Reefbase 2013)
2. Data from Helmer *et al.* (2008), circa 2001
3. Seagrass data from the Land Use Division of the Ministry of Agriculture, Lands, Forestry and Fisheries (Grenada) and crossed references with other available sources (e.g., UNEP-WCMC 2005) and includes data obtained from the Sandy Island/Oyster Bed Marine Protected Area Management Plan (i.e., from classification maps)
4. Available data on mangrove cover on Carriacou are more than likely overestimations (see Section 2.2.2)
5. Sum of mangrove data for Carriacou (from the Land Use Division of the Ministry of Agriculture, Lands, Forestry and Fisheries) and Grenada (from Helmer *et al.* 2008)

2.1 Coral reefs

2.1.1 Historical and present context

Annex 1: Additional Information on biodiversity within the project area (by: S. Aucoin)

Coral cover across Caribbean reefs has declined by an average of 80 % since the mid-1970s (i.e., a reduction from about 55 % hard-coral cover to less than 10 % during the last 40 years) (Gartner *et al.* 2003, Jackson *et al.* 2012; see Figure 1). Concerted impacts to the marine environment from multiple human activities (Hughes and Connell 1999, Crain *et al.* 2008) along with Caribbean-wide declines in carbonate production threaten future coral reef growth (Perry 2013).

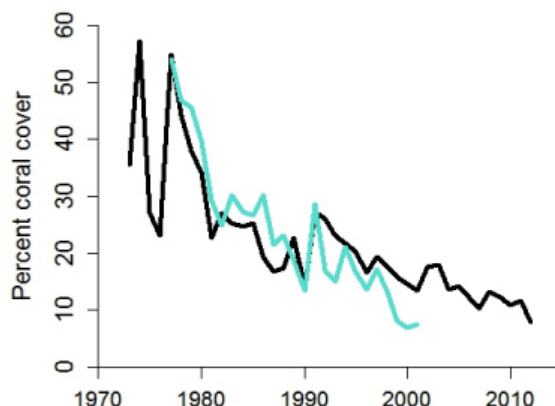


Fig. 1: Decline in percent live coral cover in Caribbean coral reefs from 1973 to present. Black line represents compiled data based on yearly averages weighted by the area surveyed per study; blue line represents data adapted from Gardner *et al.* 2003 (in Jackson *et al.* 2012).

2.1.2 State and extent of coral reefs in Grenada

The Lesser Antilles (including Grenada) has been identified as the global region with the 2nd highest proportion of reefs considered in critical stages (i.e., showing a recent 50-90 % coral decline and with a number of reefs likely to be effectively lost during the next 20 years) (see Wilkinson 2008). Virtually all coral reefs and adjacent marine areas of the Lesser Antilles are classified as being at significant risk from human activities (Bryant *et al.* 1998, Roberts *et al.* 2002, Bouchon *et al.* 2008), with Grenada placing in the highest risk quartile from current threat analyses conducted on 27 countries and territories considered most vulnerable (Burke *et al.* 2011).

From the assessment by Burke and Maidens (2004), Table 4 shows the *Reefs at Risk Index* for Grenada (i.e., proportional scale of threat across all reefs) in relation to (1) fishing pressure—unsustainable harvesting of fish and invertebrates, (2) coastal development—runoff from coastal construction, sewage discharge, and impacts from unsustainable tourism, (2) watershed-based pollution—erosion and nutrient fertilizer runoff from agriculture delivered by rivers to coastal waters, (4) marine-based pollution and damage—solid waste and contaminants from gas installations or shipping, and physical damage from anchors and ships.

Table 4: Ranked threats to reefs in Grenada showing proportional scale (%) of threats across reefs; *Reef Threat Index* indicating the cumulative rating (%) of reef threats in the country (adapted from Burke and Maidens 2004)

Annex 1: Additional Information on biodiversity within the project area (by: S. Aucoin)

Individual threat	Low	Medium	High
Fishing pressure	0	37	63
Coastal development	15	22	63
Watershed-based pollution	43	27	30
Marine-based pollution and damage	76	14	9

All threats together	Low	Medium	High	Very high
Reef Threat Index¹	0	20	40	40

1. The index is rated *very high* where three or four of the individual threats are high

Large-scale mapping data and analyses used to produce current reef estimates remain too coarse to measure explicit coral reef structures or coral cover (Palandro *et al.* 2008). Past and current estimates of reef areas for Grenada and Carriacou vary (Table 5) and the available data does not identify the proportion of live coral and/or healthy contiguous reef habitat. Note that indicating *reef area* (as is often done) instead of coral cover can be misleading. For example, many large reef areas indicated for Grenada (notably on the southeast side of the island; see Map 1) do not have any major reef structures (e.g., reef crests), but instead are comprised mostly of fleshy algal pavements or dense stands of algae (e.g., *Sargassum* spp.) that overlie carbonate foundations (presumably from ancient *Acropora* spp. accretion) (Adey and Burke 1976). Taking this general *reef area* characterization into account, 60 % of the estimated *reef area* occurs in Grenada and 40 % in Carriacou.

Table 5: General estimates¹ of coral reef areas nationwide

Total reef area ¹ (km ²)	Source
51	UNEP-WCMC, WorldFish Centre, WRI and TNC (2010) IMaRS-USF and IRD (2005) IMaRS-USF and IRD (2005)
160	Burke and Myers 2004
150	Spalding <i>et al.</i> 2001

1. Note that estimates do not necessarily differentiate between live/dead corals or rocky bottom substrates (e.g., coral rubble, bedrock)

The actual proportion of live coral cover across reefs in Grenada is largely unknown and higher resolution surveys of reef areas are needed. Spalding *et al.* (2001) indicated that even though there are fringing and patch reefs across all coasts of Grenada also highlighted that “the total area of reef is not great”, presumably referring to contiguous reef habitat or live coral cover. The majority of Grenada’s shallow reef environment is overgrowing with algae (Anderson *et al.* 2012). Deeper more offshore reefs have been noted as being relatively healthier, with algal growth said to be mostly seasonal (Creary 2008).

Anderson *et al.* (2012) further report that existing coral reef habitat in Grenada’s nearshore waters is comprised mostly of low-density stands of branching corals: *Agaricia* spp. and *Porites* spp. (notably in the southwest). There are some relatively significant stands of *Acropora* sp. to the

Annex 1: Additional Information on biodiversity within the project area (by: S. Aucoin)

north (despite hurricane damage in the recent past) and large bank barrier reefs off the eastern coast of Carriacou provide relatively better reef habitat than that found off mainland Grenada (GoG 2001, Bouchon *et al.* 2008; pers. comm. 2013, D. Winsborrow—local sport diver).

Systematic reef surveys have only been conducted off the southwest coast of Grenada (Table 6), where the majority of established coral dive sites occur (Bouchon *et al.* 2008). Low values of coral cover in relation to algae are similar to many reported findings from across the Caribbean (see Figure 1).

Table 6: Summary of reef cover surveys across a number of locations in the Grand Anse reef system (southwest Grenada)

Survey year	2006-2007 ¹	2007 ²	2008 ³	2010 ³
Number of survey locations	9	6	5	5
Live hard coral (%)	24 - 38	10	17	15
Fleshy algae (%)	37 - 53	42	46	53

1. Bouchon *et al.* 2008

2. Creary 2008

3. Anderson *et al.* 2012 (only data from point line transects are shown)

The Fourth National Report of Grenada to the Secretariat on the Convention on Biological Diversity (2009) states that coral reef surrounding Grenada is estimated at 12.5 km² (no further information or reference provided). A coral reef area of 12.5 km² would result by applying an estimate of 25 % live coral cover to the total reef area estimated for Grenada (i.e., 51 km², see Table 5). A 15 % live coral cover (from data in Table 6) applied to the total reef area estimated (51 km²) would yield an estimate of ~8 km² of live coral reef cover nationwide.

2.1.3 Reef biodiversity and species of conservation concern

Caribbean reefs likely contain about 30000 described species (Reaka-Kudla 2005). In an inventory of 5 major taxonomic groups within the Caribbean, 12046 marine species were directly identified, with 1441 species from these groups occurring in the Lesser Antilles (Miloslavich *et al.* 2010). Table 7 summarizes species numbers within these major groups identified for the Lesser Antilles (excluding crustaceans—except amphipods; and excluding fish—see Section 2.1.3.2).

Only hard corals, reef-associated fish and sea turtles are examined in this section. Many other important coastal species of conservation concern (e.g., bottlenose dolphins and other cetaceans) and/or reef-associated species (e.g., Queen conch, spiny lobster, tube sponges, etc.) are not included in this species assessment.

Table 7: Number of species identified in 5 major taxonomic groups in the Lesser Antilles

Annex 1: Additional Information on biodiversity within the project area (by: S. Aucoin)

(adapted from Miloslavich *et al.* 2010)

Major taxonomic group	Number of species
Hard corals	71
Sponges	126
Molluscs	1119
Echinoderms	79
Amphipods	46
Total species	1441

2.1.3.1 Coral species

Of the 71 *hard coral* species (order Scleractinia) known to occur in the Lesser Antilles (Miloslavich *et al.* 2010), 54 species from 10 family taxa are identified as occurring in Grenada (see Appendix 1; Anderson *et al.* 2012, Sealifebase 2013, IUCN 2013, UNEP-WCMC 2013). To simplify, only scleractinian corals are addressed in this report as they are considered the basic reef-forming/building corals (Humann and Deloach 2002). Information on *octocorals* (e.g., gorgonian sea fans), *hydrocorals* (e.g. *Millepora* fire corals) and other important reef invertebrate components in Grenada cannot be evaluated in this report because little information is available. Note that hydrocorals were included as hard coral cover in reef surveys identified in Table 6. Almost all of the hard coral species identified as occurring in Grenada have been assessed under the protocol of the IUCN Red List of Threatened Species, and 11 species are currently red-listed (Table 8; IUCN 2013).

Table 8: Conservation status of hard corals (i.e., reef-building) in Grenada

Species	Common name	IUCN status ¹
<i>Acropora cerviconis</i>	Staghorn coral	<i>Critically Endangered</i>
<i>Acropora palmata</i>	Elkhorn coral	
<i>Montastraea annularis</i>	Boulder star coral	<i>Endangered</i>
<i>Montastraea faveolata</i>	Mountainous star coral	
<i>Porites branneri</i>	Blue Crust Coral	<i>Near Threatened</i>
<i>Agaricia lamarcki</i>	Lamarck's sheet coral	<i>Vulnerable</i>
<i>Montastraea franksi</i>	Boulder star coral	
<i>Dichocoenia stokesii</i>	Elliptical star coral	
<i>Dendrogyra cylindrus</i>	Pillar coral	
<i>Mycetophyllia ferox</i>	Rough cactus coral	
<i>Oculina varicosa</i>	Large ivory coral	

1. IUCN Red List of Threatened Species (2013)

2.1.3.2 Reef-associated fish

Appendix 2 shows 317 reef-associated fish from 72 family taxa identified as occurring in Grenada (Fishbase 2013). Of these, 81 fish have been assessed under the protocol of the IUCN Red List of Threatened Species, and 23 species are currently red-listed (Table 9; IUCN 2013). Past annual surveys conducted at five reefs across the southwest coast (i.e., Grand Anse) showed that fish diversity indices were high and similar across sites, but that the density of most major fish groups

Annex 1: Additional Information on biodiversity within the project area (by: S. Aucoin)

examined decreased significantly from 2008 to 2010 (Anderson *et al.* 2012). Overfishing of reef fish in Grenada has been documented in the past (Jeffrey 2000) and remains a major threat largely unabated (see Table 4). Increasing exploitation of reef fisheries along with increasing tourism—one of the fastest growing economic sectors in the Eastern Caribbean, is more than likely affecting fish stocks adversely (Jeffrey 2000). Threats to reef fish populations are now compounded by invasive lionfish (*Pterois volitans*—known to significantly reduce recruitment of coral reef fishes; Albins and Hixon 2008). Lionfish were first reported in Grenada circa 2010 (Loughney 2013) and recent eradication projects have captured more than 50 individuals in one day in the Moliniere-Beausejour Marine Protected Area (pers. comm. 2013, P. Phillipson—Scubatech Dive Center, Grenada).

Table 9: Conservation status of reef-associated fish in Grenada

Species	Common name	IUCN status ¹
<i>Epinephelus itajara</i>	Atlantic goliath grouper	<i>Critically Endangered</i>
<i>Epinephelus striatus</i>	Nassau grouper	<i>Endangered</i>
<i>Albula vulpes</i>	Bonefish	<i>Near Threatened</i>
<i>Carcharhinus acronotus</i>	Blacknose shark	
<i>Carcharhinus falciformis</i>	Silky shark	
<i>Carcharhinus leucas</i>	Bull shark	
<i>Carcharhinus limbatus</i>	Blacktip shark	
<i>Negaprion brevirostris</i>	Lemon shark	
<i>Aetobatus narinari</i>	Spotted eagle ray	
<i>Scarus guacamaia</i>	Rainbow parrot fish	
<i>Dermatolepis inermis</i>	Marbled grouper	
<i>Mycteroperca bonaci</i>	Red grouper	
<i>Mycteroperca bonaci</i>	Black grouper	
<i>Mycteroperca venenosa</i>	Yellowfin grouper	
<i>Paralabrax dewegeri</i>	Vieja	
<i>Balistes vetula</i>	Queen triggerfish	<i>Vulnerable</i>
<i>Lachnolaimus maximus</i>	Hogfish	
<i>Lutjanus analis</i>	Mutton snapper	
<i>Lutjanus cyanopterus</i>	Cubera snapper	
<i>Megalops atlanticus</i>	Tarpon	
<i>Mycteroperca intestinalis</i>	Yellowmouth grouper	
<i>Hippocampus erectus</i>	Lined seahorse	

1. IUCN Red List of Threatened Species (2013)

2.1.3.3 Reef-associated turtles and turtle nesting

Of the four marine turtles known to frequent waters of Grenada, only hawksbill and green turtles occur in reefs and adjacent foraging habitats (e.g., seagrass beds and mangroves). Loggerhead turtles occur further offshore and leatherback turtles will come inshore during the nesting season (Grazette *et al.* 2007) but only to beaches near deep water and typically away from coral reefs.

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Sea turtle nesting occurs intermittently along northeastern beaches of Grenada and generally on most beaches around Carriacou. Beaches at four ridge-to-reef project sites have significant turtle nesting activity documented (Table 10) and appear to include the majority of recent sea turtle nesting sites (SWOT 2013). Nesting turtle populations in Grenada are under significant pressure from illegal harvesting of sea turtle eggs and a legal turtle fishery (Lloyd and King 2006, Grazette *et al.* 2007, Isaac 2010).

Table 10: Conservation status and nesting of sea turtles in Grenada¹

Species ¹	Common name	IUCN status ²	Site	Max. annual nesting frequency ³
<i>Dermochelys coriacea</i>	Leatherback turtle ⁴	Critically Endangered	Levera Pond & Levera addition	>1000
			High North additon	<500
			White Island	<100
			Sandy Island / Oyster Bed MPA	<25
<i>Eretmochelys imbricata</i>	Hawksbill turtle	Critically Endangered	High North addition	<100
			Levera Pond & Levera addition	<25
<i>Chelonia mydas</i>	Green turtle	Endangered	High North addition	<25

1. Note that IUCN red-listed *Endangered* loggerhead turtle (*Caretta caretta*) also occurs in national waters, but further offshore

2. IUCN Red List of Threatened Species (2013)

3. Maximum estimate of binned turtle clutches from data presented from 2006 to 2010 (SWOT 2013)

4. Both marine turtles are also associated with mangrove and seagrass habitats (see Sections 2.2.3 and 2.3.3)

2.2 Mangroves

2.2.1 Historical and present context

Mangroves are disappearing worldwide by 1-2 % per year, a rate greater than or equal to declines in adjacent coral reefs (Duke *et al.* 2007). Large-scale analyses across the Americas (including Grenada) indicate that at least 38 % of mangrove forest area has been lost over recent decades (Valiela 2001). More recent studies using improved spatial analyses now show that worldwide mangrove cover is even less than previously estimated (by at least 12 %; see Giri *et al.* 2011).

Impacts to mangrove forests come from direct human activities (Ellison and Farnsworth 1996, Farnsworth and Ellison 1997, Alongi 2002, Gillman *et al.* 2008) and indirect qualitative degradation, where other coastal vegetation and mangrove associates (e.g., *Acrostichum* spp.) replace typical, valuable, and functional true mangrove species with no change in vegetation cover to the initial mangrove area (see Dahdouh-Guebas *et al.* 2005, Ellison *et al.* 2005). The protection and restoration of mangroves are probably among the most important conservation priorities for Grenada (Helmer *et al.* 2008).

2.2.2 State and extent of mangroves in Grenada

Loss of mangroves in Grenada has occurred primarily because of clearing for construction and land conversion (e.g., the removal of mangroves for marinas and yachting activities; Thomas 2000; Moore 2004), followed by waste disposal (e.g., landfill garbage, asphalt manufacturing effluents;

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Rusk 2010) and firewood/charcoal production (FAO 2007, Rusk 2009, Spalding *et al.* 2010). Recent estimates of mangrove distribution over time for Grenada indicate an annual mangrove areal decline of 1.2 to 1.3 % occurring from 1980 and projected to 2005 (FAO 2007). However, with large unaccounted mangrove declines due to clearings around Levera Pond (in Grenada; Rusk 2009) and Tyrell Bay (in Carriacou; Moore 2004) the estimated annual mangrove decline over time is likely greater than currently specified.

The most reliable estimate of total mangrove area in Grenada (excluding Carriacou) is currently calculated at 172 ha (see Table 3 and Map 1; Helmer *et al.* 2008). Levera Pond remains the largest stand of mangrove forest and accounts roughly for 20 % of the estimated mangrove area on the island (~33 ha; Spalding *et al.* 1997, FAO 2007). Remaining mangroves in Grenada are located mainly along the northeastern and southwestern coasts spread out in pockets alongside fringing coastal forests. Available GIS data sourced from the Land Use Division of the Ministry of Agriculture, Lands, Forestry and Fisheries (Grenada), Spalding *et al.* (2010), and including mangrove cover estimated on Saline island (gleaned from GoogleEarth), yield a total areal estimate of 112 ha of mangroves for Carriacou (see Table 3 and Map 2). Nevertheless, this areal extent is based on large-scale classification analyses considered very coarse and does not take recent hurricane damage into account. It is more than likely that mangrove cover on Carriacou is much less than currently estimated (see Moore 2004a, 2004b).

2.2.3 Mangrove biodiversity and species of conservation concern

A total of 10 mangrove tree species from 4 genera are found in Atlantic Latin America and the Caribbean (Lacerda 1993). Five true mangrove tree species are present in the Lesser Antilles (Imbert *et al.* 2000), and all have been identified in the mangal flora of Grenada (Table 11; Tomlinson 1994, FAO 2007, Massó-Alemán *et al.* 2010). These are listed as ‘Least Concern’ under the protocol of the IUCN Red List of Threatened Species (IUCN 2013); however, it is important to note that at insular local scales (such as Grenada), these mangrove species and entire mangrove ecosystems are generally considered threatened (see Polidoro *et al.* 2010). Many plant species also occur associated with mangrove forests in the Caribbean, with flora varying from region to region and even from forest to forest in a given region (de Lacerda 1993). No systemic faunal or floral species assessments have been conducted in mangroves across Grenada.

Table 11: The five mangrove tree species identified as occurring in Grenada

Species	Common name	IUCN Status ¹
<i>Avicennia germinans</i>	Black mangrove	Least Concern ²
<i>Avicennia schaueriana</i>		
<i>Conocarpus erectus</i>	Silver-leaved buttonwood	
<i>Laguncularia racemosa</i>	White mangrove	
<i>Rhizophora mangle</i>	Red mangrove	

1. IUCN Red List of Threatened Species (2013)

2. Pertains to the global distribution range; note that the areal extent of mangroves in Grenada accounts for ~0.5 % of the total land area and ~3 % for Carriacou, thus warranting a greater local conservation concern

Mangrove fauna is large and diversified—hundreds of species of terrestrial and marine invertebrates, along with over 140 bird and 220 fish species identified, create a variety of dynamic and diverse assemblages across mangroves in the Americas (de Lacerda 1993). In nearby Trinidad,

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over 350 species of invertebrates (e.g., insects, crustaceans) and vertebrates (e.g., birds, reptiles) were recorded in just one mangrove forest (de Lacerda 2002).

Much of the fauna found in mangroves also occurs in other coastal habitats; for example, many typical coral reef fishes have been recorded to occur frequently in mangroves (Alvarez-Leon 1993) and *Critically Endangered* hawksbill turtles and *Endangered* green turtles are also known to feed along mangrove edges (Limpus and Limpus 2000, Guebert-Bartholo *et al.* 2011, Gaos *et al.* 2012).

Many species occupy mangroves during some stage of their life cycle or as part of their daily activities or migrations. Whether resident, transient or vagrant, 106 of the 222 bird species recorded in Grenada (Appendix 3) are known to occur/frequent mangrove forests or mangrove edges (Frost and Messiah 2003, Rusk 2008, BLI 2012, Ridgley *et al.* 2012, Avibase 2013, Cornell 2013; IUCN 2013). Of all the birds identified in Grenada and known to occur/frequent mangrove forests or mangrove edges (see Appendix 3), 3 species are of conservation concern and the scaly-breasted thrasher has a restricted range across the Lesser Antilles (out of 3 birds considered regional endemics known to occur in Grenada) (Table 12). Moore (2004) notes that without mangrove habitats in Carriacou it is unlikely that many waterbirds would remain on the island.

Table 12: The four birds of conservation concern known to occur/frequent mangroves in Grenada and/or mangrove habitat edges.

Species	Common name	IUCN Status ¹
<i>Calidris pussilla</i>	Semipalmated sandpiper	Near Threatened
<i>Fulica caribaea</i>	Caribbean coot	Near Threatened
<i>Dendrocygna arborea</i>	West Indian whistling-duck	Vulnerable
<i>Allenia fusca</i>	Scaly-breasted thrasher	Regional endemic ²

1. IUCN Red List of Threatened Species (2013)

2. IUCN status *Least Concern*; (i.e., restricted range); formerly known as *Margarops fuscus*

2.3 Seagrass

2.3.1 Historical and present context

Global seagrass cover has been reduced by at least 29 % (by ~51000 km²) over the past century, with rates of decline increasing nearly 8-fold from before 1940 through to 1990 (Waycott *et al.* 2009). Comparable to rates of decline reported for coral reefs and mangroves, seagrass loss has been estimated at 110 km² per year since 1980 (Orth *et al.* 2006, Waycott *et al.* 2009).

Threats to seagrasses worldwide are similar and widespread (Green and Short 2003, Short *et al.* 2011). In tropical regions, the major impacts by human activities responsible for seagrass loss include those affecting water quality or clarity (e.g., eutrophication leading to algal blooms) as a result of nutrient loading (e.g., fertilizers) and increased turbidity (e.g., sedimentation) from agricultural runoff and sewage disposal, upland clearing (e.g., erosion of watersheds due to deforestation), mechanical damage (e.g., dredging and deposition, boating activities), construction and coastal development (e.g., tourism), water pollution (e.g., leaching of pesticides, disposal of toxic wastes) and fisheries (e.g., trawling, aquaculture) (Short and Wyllie-Echeverria 1996, Green and Short 2003, Orth *et al.* 2006, Short *et al.* 2011). Insufficient data is available to provide a comprehensive assessment of Caribbean seagrasses (Green and Short 2003), and much less so for Grenada, but acknowledged general declines in the region have resulted from a combination of these impacts—also related to declines in coral cover (see Table 13; compare to Table 4).

Table 13: Percentage of global seagrass species affected by the top 4 major threat categories (adapted from Short *et al.* 2011).

Major threat category ¹	Percentage of affected species ²	Percentage of affected species at significant risk ³
Coastal development	93	21
Water quality	58	26
Mechanical damage	44	9
Fisheries	38	4
Sedimentation/siltation	36	12

1. Threat categories are not mutually exclusive (e.g., water quality can also be affected by coastal development)
2. 72 species assessed worldwide
3. Percent of affected seagrass species classified as either IUCN status *Threatened* or *Near Threatened*

2.3.2 State and extent of seagrass beds in Grenada

Nayer *et al.* (2009) indicate that seagrass beds are predominantly concentrated on the eastern and southeastern coasts of Grenada and around the eastern and southwest coasts of Carriacou, based on sea urchin harvesting sites (typically, shallow seagrass habitats). The lack of urchin harvesting sites on the western and northern coasts suggests that such habitat is not as common in these areas. Based on reports from the early 1980s, the Ramsar Convention on Wetland's country profile for Grenada also notes the presence of extensive seagrass beds off the eastern and southern coasts of Grenada and off western Carriacou (see Scott and Carbonell 1986).

Available estimates of seagrass areas in Grenada and Carriacou have been calculated to total ~1300 ha (see Table 3). Ridge-to-reef marine sites include ~50 % of this estimated area (see Maps 1 and 2). Nevertheless, one needs to take into account that this data, provided by UNEP-WCMC (2005), is best limited to large-scale analyses as it is reported to have substantial inaccuracies, poor spatial representation, and limited spatial resolution (Wabnitz 2008). More reliable and current estimates of seagrass cover are necessary for small island states such as Grenada, especially since seagrass distribution generally changes on the micro-scale level and over very short periods (Short *et al.* 2007). Note that optical remote sensing is now providing detailed high-temporal resolution for mapping seagrass areas with much greater confidence (Pu *et al.* 2010).

Despite few historical reports available that document the permanent loss of seagrass beds in the Caribbean, Green and Short (2003) report on the loss of seagrasses in Carriacou between 1969 and 1994 in their report *World Atlas of Seagrasses* (but provide no further detail). Recently, Moore (2004a) reported that sand mining near the Sandy Island/Oyster Bed Marine Protected Area, as well as land-reclamation activities resulting in cleared mangroves within Tyrell Bay, have created a permanent disturbance to surrounding seagrass beds. Removal of sand from beaches and coastal areas for use in the construction industry is widespread throughout the Caribbean, particular in the smaller island states (Green and Short 2003). Sand mining is now prohibited in Grenada (Singh 2010), but smaller scale removals still occur (Isaac 2010). GIS data obtained from the Land Use

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Division of the Ministry of Agriculture, Lands, Forestry and Fisheries indicated that sand mining activities occurred predominantly on the northeastern side of the island in the recent past (south of Levera on beaches between Conference Bay and Great River Bay—see Map 1) where extensive seagrass habitat is purported to occur (Nayer *et al.* 2009), significant areas of mangrove forests are found (Helmer *et al.* 2008) and *Critically Endangered* leatherback turtles have been known to nest (Dow and Eckert 2007).

2.3.3 Seagrass biodiversity and species of conservation concern

A total of 12 seagrass species from 5 genera are found in the tropical Atlantic (Short *et al.* 2007). Six of these seagrass species have been identified in nearshore waters of Grenada (Table 14), including the recent discovery of the potentially invasive seagrass *Halophia stipulacea* (Willette and Ambrose 2009).

Table 14: The five seagrass species identified as occurring in Grenada

Species	Common name	IUCN status ⁴
<i>Thalassia testudinum</i>	Turtlegrass ¹	Least Concern
<i>Syringodium filiforme</i>	Manatee grass ¹	
<i>Halodule wrightii</i>	Shoal grass ¹	
<i>Halophila decipiens</i>	Paddle grass	
<i>Halophila stipulacea</i>	Halophia seagrass ²	Vulnerable
<i>Halophila baillonii</i>	Cover grass ³	

1. Most common and dominant seagrasses

2. Introduced/invasive species, originally from Indian Ocean

3. Restricted range—includes Lesser Antilles, thus most probably occurring in Grenada (Littler and Littler 2000)

4. IUCN Red List of Threatened Species (2013)

The majority of seagrasses are listed as ‘Least Concern’ under the protocol of the IUCN Red List of Threatened Species (IUCN 2013); however, at insular local scales (as highlighted for mangroves—see Section 2.2.3) such ecosystems are generally considered threatened.

Of the 115 species assessed under IUCN protocol that occur in seagrass habitats worldwide, there is currently 31 species of conservation concern (27%); specifically, 9 species—*Critically Endangered*, 7 species—*Endangered*, and 15 species—*Vulnerable* (Short *et al.* 2011). Many other species found in seagrass habitats have not been assessed, and especially so across the Caribbean. It is important to note that both *Critically Engangered* hawksbill turtles and *Endangered* green turtles will forage in seagrass habitats, with green turtles feeding directly upon seagrasses in Grenada.

Seagrass habitats have consistently shown to have important levels of biodiversity, with comparisons to adjacent coral reefs often showing similar to significantly higher levels of diversity (Hemminga and Duarte 2000). Despite this high diversity and the importance of associated species (e.g., sea turtles), there are few detailed studies of species associated with seagrass beds in the Caribbean (Heck 1977, Weinstein and Heck Jr. 1977, Nagerlkerken *et al.* 2001). Although some species appear to be primarily restricted to seagrass ecosystems (e.g., Queen conch, Stoner *et al.* 1996; various urchins, Valentine and Heck 1999) or dependent on seagrasses for at least part of their life cycle (e.g., spiny lobster, Acosta 1999), still many of the species that have been recorded have also been found in other ecosystems (e.g., coral reefs, mangroves) (Green and Short 2003).

3. LAND AREAS

3.1 Historical and present context

Forests in Grenada are primarily secondary growth as most of the original native forests were cleared during the plantation era. The decline of sugar cane cultivation, the banana industry, and other land-use shifts away from agriculture have caused forest cover in Grenada to increase significantly during the last half century (Table 15, Figure 2) (Helmer *et al.* 2008, FAO 2010a). During 1990-2005, Grenada is said to have gained 12.5 %¹ of its forest and woodland habitat (FAO 2006). Leipzig (1996) and FAO (2006) report that the state owns 69 % (4830 ha) of classified forests and woodlands in Grenada and that 31 % (2170 ha) is privately owned. However, with estimated increases in forested areas from abandoned agriculture and/or fallow land; especially after past hurricanes in the last 10 years, the proportion of privately owned forested areas and woodlands is expected to be much higher. Interestingly, Singh (2010) indicates that over 85 % of the land in Grenada is privately owned.

Table 15: Land-cover change from about 1945 (Beard 1949) to 2001 (Helmer *et al.* 2001).

Land-cover/forest class	1945 (ha)	2001 (ha)	Change ¹ (%)
Drought deciduous woodland, inactive agriculture, and all grassy areas ²	405	2397	+ 491
Drought deciduous or Semi-deciduous forest, and dry shrub woodland	1052	8584	+ 716
Seasonal evergreen, evergreen, and cloud forests ³	3946	7208	+ 83
Cultivated land ⁴	27661	9784	- 65
Urban or built-up land ⁵	202	3153	+ 1458

1. Percent change = [value for 1945] – [value for 2001] ÷ [value for 1945] x 100 %

2. Includes savannas and grazing areas

3. Includes rain forest, lower montane rain forest, montane thicket, elfin woodland, palm brake and secondary rain forest

4. Includes herbaceous agriculture, mixed and woody agriculture

5. Includes other uncultivated land (e.g., golf course, sparsely vegetated areas)

¹Defining total rate of habitat conversion as the [change in forest area] + [change in woodland area] – [net plantation expansion]

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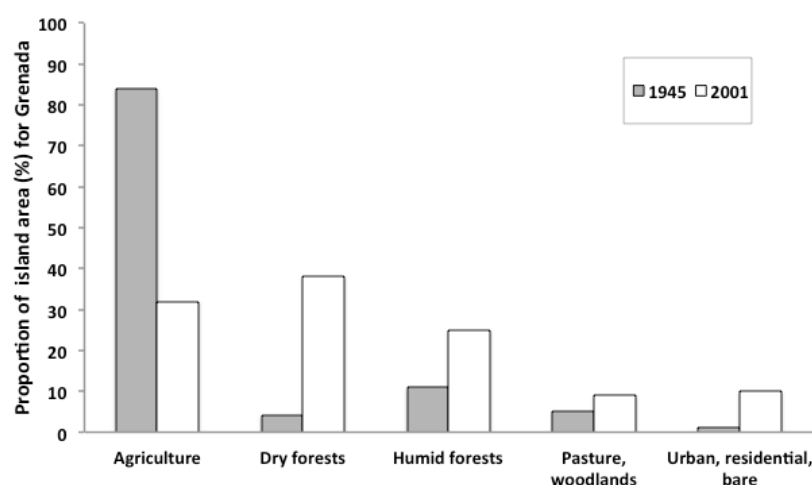


Fig. 2: Land-cover distributions in Grenada between 1945 and 2001 (adapted from Helmer *et al.* 2001)

3.2 State and extent of forest habitats in Grenada

3.2.1 Land cover and forest formations

Available information on land-cover and forest class distributions for all ridge-to-reef terrestrial project sites is summarized in Table 16 (for mangroves—see Table 3). Areal proportions (%) in Table 16 represent the total area for each land class distributed at project sites (see Map 3). Table 17 profiles the different land classes at each project site.

Table 16: Areal extent of forest and land-cover classes for Grenada and Carriacou in relation to the ridge-to-reef project (all sites together).

Land classification for Grenada ¹ (ha)	Total area in Grenada (ha)	Total area in project	%
Drought deciduous open woodland	54	4.0	7.3
Deciduous, evergreen coastal, mixed forest or shrubland	2162	96.3	4.5
Semi-deciduous forest (includes semi-evergreen forest)	6422	136.9	2.1
Seasonal evergreen & evergreen forest	6347	1914.7	30.2
Sierra palm, transitional & tall cloud forest	663	563.0	84.9
Elfin & Sierra palm cloud forest	198	185.7	93.8
Nutmeg & mixed-woody agriculture)	8984	280.4	3.1
Coconut palm & mixed-woody agriculture	469	12.1	2.6
Pasture, hay, or inactive agriculture	2343	34.4	1.5
Emergent wetland	43	2.1	4.9
Water (permanent)	63	22.8	36.1
Rivers (length in km)	822 km	124.4 km	15.1
Low-density built-up land (rural/residential)	2439	5.5	0.2

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Land classification for Carriacou ² (ha)	Total area for Carriacou (ha)	Total area for project sites	%
Deciduous forest	295	54.3	18.4
Scrub and cactus	1189	127.3	10.7
Open scrub and cactus	632	1.1	0.2
Pasture and grazing with fruit trees	318	0.5	0.2
Open & controlled grazing	405	8.8	6.2
Rivers (length in km)	83 km	2.0 km	2.3

1. Data from Helmer *et al.* (2008), circa 2001
2. Data from the Land Use Division of the Ministry of Agriculture, Lands, Forestry and Fisheries (Grenada), provided by The Nature Conservancy

Table 17: Areal extent of land-cover and forest class for reef-to-ridge project sites

Land class and area for Grenada ¹ (ha)	Perseverance	Beausejour	Mt. Hartman	Grand Etang	Amandale	Mt. St. Catherine	Levera ²	Richmond Hill	Mt. Morritz	Morne Gazo	Grand Bras	Pearls
Drought deciduous open woodland	-	-	4.0	-	-	-	-	-	-	-	-	-
Deciduous, evergreen coastal, mixed forest or shrubland	14.9	15.6	49.9	-	-	-	11.2	4.2	-	-	-	0.5
Semi-deciduous forest includes semi-evergreen forest	65.2	38.9	3.3	-	-	-	14.0	3.9	8.9	0.5	2.3	-
Seasonal evergreen & evergreen forest	4.5	0.4	-	1174.0	189.5	533.5	-	-	-	12.7	-	0.1
Sierra palm, transitional & tall cloud forest	-	-	-	348.0	23.0	192.2	-	-	-	-	-	-
Elfin & Sierra palm cloud forest	-	-	-	39.5	2.6	143.6	-	-	-	-	-	-
Nutmeg & mixed-woody agriculture	3.4	0.2	3.0	111.6	26.8	121.1	-	-	-	12.4	1.6	0.3
Coconut palm & mixed-woody agriculture	-	-	-	-	-	-	4.5	-	-	-	-	7.6
Pasture, hay, or inactive agriculture	14.6	2.9	7.1	3.5	0.3	1.6	2.4	-	-	0.1	0.5	1.4
Emergent wetland	0.7	-	-	-	-	-	1.4	-	-	-	-	-
Low-density built-up land (rural/residential)	2.2	-	0.2	2.2	-	-	0.1	-	-	-	-	-
Water (permanent)	-	-	-	10.3	-	-	12.4	-	-	-	-	-
Rivers (km) ³	2.0 km	19.0	-	64.1	8.2	29.3	0.9	-	-	0.4	-	-

Land class and area for Carriacou ¹ (ha)	High North	High North addition	Sandy Island/Oyster bed
Deciduous forest	9.3	45	-
Scrub and cactus	42.5	82.4	2.4
Open scrub and cactus	-	0.3	0.9
Pasture and grazing with fruit trees	-	-	0.5
Open & controlled grazing	-	8.8	-
Coconut palm	-	-	-
Rivers (km) ³	0.1 km	1.9	-

1. Data from Helmer *et al.* (2008), circa 2001
2. Includes both proposed Levera Pond Protected Area and Levera marine area addition (see Map 2)
3. Data from the Land Use Division of the Ministry of Agriculture, Lands, Forestry and Fisheries (Grenada), provided by The Nature Conservancy; note river measurements are in kilometers

Table 18: General areal extent of forest class and land cover for Carriacou

Land class and area for Carriacou ¹	Total areal extent (ha)
Deciduous forest	1869.8
Semi-deciduous forest	580.7
Evergreen and seasonal evergreen forest	19.6
Agriculture – cultivated land	185.3
Agriculture – woody land	18.5

1. Data from FAO (2010a), circa 2001

Table 18 likely provides more reliable land cover data for forest classes in Carriacou than those estimated in Table 17. Note that land classes for Carriacou used in Table 18 are also similar to parameters used for land classes in Grenada (Helmer *et al.* 2008), and thus would facilitate more complete nationwide analyses of forest types. Unfortunately, detailed data was not obtained and respective land cover analyses could not follow (e.g., identifying land-cover proportions and mapping forest types at project sites).

3.2.2 Land use and forestry

FAO (2010a, 2010b) reports a total forest area of ~17000 ha in Grenada, which corresponds with information presented on forest cover for Grenada and Carriacou in Table 16. As reported by FAO (2010a, 2010b), primary designated functions of forests in Grenada are presented in Table 19.

Table 19: Primary designated function of forested areas in the country

Primary designated function of forests	%	Approx. area¹ (ha)
Timber production	1	170 - 210 ha
Protection of soil and water	3	510 - 560 ha
Conservation of biodiversity	14	2320 - 2380 ha
None or unknown	82	13900 - 13940 ha

1. Proportional to the ~17000 ha of forest cover reported for Grenada in FAO (2010a, 2010b).

Outside of land cover reported in Helmer *et al.* (2008), little information on land use in Grenada is available. Timber extraction/production is reported as harvests of 139 m³ for 1990, 2000, and 2005 (FAO (2010a) and no data exists concerning wood-fuel removals (i.e., firewood, charcoal production).

A phasing out of timber production from natural forests is reported to have begun in the 1990s (Leipzig 1996), with reforestation initiatives increasing over the last 10 years (e.g., 15000 seedlings produced in 2009; GoG 2009). Forest extractions for non-timber forest products (e.g., baskets and other handicrafts) have been reported as using primarily screw pine (*Pandanus utilis*) and bamboo (*Bambusa vulgaris*) (GoG 2000), but no further information on these types of increasing forest extractions are available.

The Fourth National Report of Grenada to the Secretariat on the Convention on Biological Diversity (2009) indicates main threats to forest biodiversity in Grenada as the clearing of land for agricultural production, animal grazing, infrastructure, housing settlement and commercial activities, invasive and pest species, and natural disasters (e.g., hurricanes and fire), but provide no further data.

FAO (2010a) provides some information on the above noted threats and reports the following (starting from 2004):

- that hurricanes and tropical storms have impacted ~90 % of forests in Grenada
- a total of 10 forest fires have affected 5 ha of forested land

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- mealybug pests have affected 500 ha of forested land (stemming from 38-90 ha of Blue mahoe reportedly destroyed and/or felled after mealy bugs were first recorded in 1994—Kairo *et al.* 2000, Sagarra and Peterkin 1999)
- that invasive bamboo is increasing rapidly in area (but no data is available to quantify the extent)

3.3 Forest biodiversity and species of conservation concern

Ridge-to-reef project sites include much of the critical habitat important for Grenadian wildlife and, most notably include much of the habitat range for all IUCN red-listed species of concern in Grenada. Table 16 and 17 highlight the diverse forest habitats and land areas of the project. The terrestrial ridge-to-reef project sites in Grenada (see Table 17) currently comprise 7 of the 9 areas highlighted nationwide for priority biodiversity conservation within reported Caribbean biodiversity hotspots—defined as areas of high levels of endemism and threat (Anadon-Irizarry 2012).

3.3.1 Flora

Beard (1949) reports a total of over 2000 species of flowering plants and 243 tree species distributed across the Lesser Antilles (cited in Lugo *et al.* 1981). IUCN (1998) reports that 1068 vascular plant species are encountered in Grenada. Excluding mangrove species assessments (see Table 11). There are 4 species currently red-listed (Table 20; IUCN 2013) from a total of 44 plants and trees assessed under the protocol of the IUCN Red List of Threatened Species (see Appendix 4).

Table 20: IUCN red-listed plants in Grenada

Species	Common name	IUCN status ¹
<i>Guaiaacum officinale</i>	Commoner Lignum Vitae	Endangered
<i>Melocactus broadwayi</i>	Turk's cap	Near Threatened
<i>Opuntia triacantha</i>	Big pine key prickly-pear	
<i>Dedrela odorata</i>	Spanish cedar	Vulnerable

1. IUCN Red List of Threatened Species (2013)

The majority of plants in Grenada have been described in Hawthorne *et al.* (2004). Endemic flora has been recorded (e.g., *Charianthus grenadensis*, *Maytenus grenadensis*, *Lonchocarpus broadwayi*, *Rhytidophyllum caribaeum*, *Cyathea elliottii*), but systemic surveys to provide a complete assessment is needed. Huber and Vincent (1988) report that overall floral diversity in Grenada is less than other islands in the Lesser Antilles, but habitat biodiversity indices calculated for Grenada remain one of the highest for the Lesser Antilles (Ricklefs and Lovette 1999, Henderson 2004).

3.3.2 Mammals (native and introduced species)

Similar to other islands of the Lesser Antilles, the land mammal fauna of Grenada is typically depauperate (Allen 1911). The land mammal fauna known to be present on the island (i.e., excluding known extinctions/extirpations) is comprised of 21 species of which none are endemic and more than half are bats (Appendix 5) (Nowak 1994, Genoways 1998, MacPhee *et al.* 2000, IUCN 2013). The majority of mammals are listed as 'Least Concern' under the protocol of the IUCN Red List of Threatened Species (IUCN 2013) (see Appendix 5); however, it is important to

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note that at insular local scales (such as small islands like Grenada), some populations of species are naturally small, thus warrant extended protection.

3.3.3 Reptiles and Amphibians (native and introduced species)

The current Grenadian herpetofauna is comprised of 4 amphibian species (1 endemic) and 14-18 reptiles (i.e., 4 species are strongly suspected extirpated, and no true wild population of the red-footed tortoise or Morocoy occurs) (see Appendix 6) (Germano *et al.* 2003, Henderson 2004, Powell and Henderson 2005, Henderson and Berg 2011, Powell and Henderson 2012). Few species of Grenadian herpetofauna have been assessed under the protocol of the IUCN Red List of Threatened Species, but 3 species are currently red-listed (Table 21) (IUCN 2013).

Table 21: IUCN red-listed terrestrial herpetofauna of Grenada (see Table 10 for sea turtles)

Species	Common name	IUCN status ⁴
<i>Pristimantis euphonides</i>	Grenada frog ¹	Endangered
<i>Typhlops tasymicris</i>	Grenada bank blindsnake ²	
<i>Sphaerodactylus kirbyi</i>	Grenadines sphaero gecko ³	Vulnerable

1. Endemic; species also commonly referred to as *highland piping frog*

2. Suspected as extirpated in Grenada—only recent records from Union Island, St. Vincent and the Grenadines (Rogriguez *et al.* 2011)

3. Native in Carriacou, not expected to occur naturally in Grenada

4. IUCN Red List of Threatened Species (2013)

Important critical habitat for IUCN red-listed herpetofauna of Grenada is provided by Levera (potential presence of the *Endangered* bank blindsnake), High North and H. North addition (*Vulnerable* Grenadines sphaero gecko), and Grand Etang and Mt. St. Catherine provide species-specific habitat for the *Endangered* Grenada frog. Grand Etang and Mt. St. Catherine are of particular importance as they provide sufficient area for the larger of the land mammal species (see Appendix 5) and many IUCN red-listed birds (see Appendix 2) (Huber and Vincent 1988).

3.3.4 Birds (natives, migrants and vagrants)

The avifauna of Grenada is known to be primarily West Indian but with still a strong South American influence. A total of 222 species have been recorded nationwide (see Appendix 3; Frost and Messiah 2003, Rusk 2008, BLI 2012, Ridgley *et al.* 2012, Avibase 2013, Cornell 2013; IUCN 2013), with 35 species considered resident landbirds (Rusk 2009). A total of 5 birds are red-listed (Table 22), with the majority of species listed as ‘Least Concern’ under the protocol of the IUCN Red List of Threatened Species (IUCN 2013).

Table 22: IUCN red-listed birds in Grenada

Species	Common name	IUCN Status ¹
<i>Leptotila wellsi</i>	Grenada dove	Critically Endangered
<i>Calidris pusilla</i>	Semipalmated sandpiper	
<i>Fulica caribaea</i>	Caribbean coot	Near Threatened
<i>Tryngites subruficollis</i>	Buff-breasted sandpiper	
<i>Dendrocygna arborea</i>	West Indian whistling-duck	Vulnerable

1. IUCN Red List of Threatened Species (2013)

Along with regional endemics (see Appendix 3), of particular conservation importance is the national bird and endemic, the Grenada dove (*Leptotila wellsi*)—with a current population between 130-140 individuals (pers. comm. 2013, B. Rusk—Forestry Division). Three of the five

identified *Important Birding Areas* (IBA) that provide dry forest habitat and directly support the population of Grenada doves are sites included in the ridge-to-reef project (Perseverance, Beausejour, Mt. Hartman) (Rusk 2009). The largest of all 6 identified IBAs is also included in the ridge to reef project (i.e., the Grand Etang and Annandale Forest Reserves).

3.3.5 Other

Islands in the Lesser Antilles, with the exception of Trinidad and Tobago (see Phillip *et al.* 2013; 66 brackish/freshwater fish reported) typically have few freshwater fish (Briggs 1984). Generally, freshwater fish assemblages of the Lesser Antilles are characterized by semi-marine mountain mullets (Mugilidae) and gobies (Gobiidae), with the only *true* freshwater fish being the introduced poeciliids or guppies (i.e., *Lebistes reticulatus*, *Poecilia vivipara*) and cichlids (e.g., *Oreochromis* spp.) (Myers 1938). No systemic surveys for freshwater fish species in Grenada have been conducted, and existing data in the literature is mostly misleading and/or inadequately substantiated (e.g., see referenced material for Grenadian freshwater fish in Fishbase 2013).

Several types of aquatic environments are present in Grenada. Steeply flowing watercourses drain from the mountains, with many small streams exhibiting periods of intermittent flow and some larger rivers flowing slowly across narrow coastal lowlands forming marshes (prior to entering the sea). Some marine/brackish fish, such as the rare marbled swamp eel or *tête chien* (*Synbranchus marmoratus*) and common snooks (e.g., *Centropomus* spp.) are known to reside in such coastal aquatic environments in Grenada, but species distribution is not documented.

Freshwater macroinvertebrate faunas of the islands of the Lesser Antilles are also typically sparse (Bass 2003a). A total of 101 species of freshwater macroinvertebrates (including terrestrial species with aquatic life stages) from 12 taxonomic groups have been identified in Grenada (see list in Bass 2004), but still very little information is available and more studies are needed. It is likely that more studies would record many more additional species (Bass 2003b, 2004).

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4. ECONOMIC VALUATION OF ECOSYSTEMS AND PROTECTED AREAS

The concept of ecosystem services has become an organizing principle in international conservation practice and policy. Recent comprehensive reviews have reported on an increasing number of valuation applications and methods used in assessing the value of ecosystem services and biodiversity (Atkinson *et al.* 2012, Ferraro *et al.* 2012). This can provide economic incentive and ultimately help leverage sustainable financing for protecting critical ecosystems and livelihoods. Outside of one valuation study focusing on past and potential revenue generation in relation to Grenadian protected areas (e.g., implementation of user fee programs projected to generate over US\$1400000 yearly) (Sector 2006), no further assessments have been conducted.

It is necessary to highlight that the following valuation data must be taken in circumspect until studies specific to Grenada are conducted. Note that any given site must be assessed in its specific context, and the values presented in this report (including extrapolations by Sector 2006; see Tables 23 and 25) are to be used indicatively, and primarily to facilitate further policy thinking/action on economic valuing of ecosystems in Grenada.

4.1 Marine ecosystems

The value of Caribbean coral reefs, seagrass beds, coastal mangroves and associated habitats in relation to ecosystem processes has long been recognized as providing important goods and services both individually and through functional linkages (e.g., coastal defense, sediment production, primary production, fisheries, the maintenance of high species diversity, etc.) (Moberg and Folke 1999, Moberg and Ronnback 2003, Harborne *et al.* 2006). More recently, their value has been further highlighted in relation to greenhouse emission reductions and CO₂ sequestering in countering climate change (Nellemann *et al.* 2009, McLeod *et al.* 2011) (Table 23).

Table 23: Monetary values in relation to coastal ecosystem services (including provisioning services, regulating services, cultural and social services) and reported values on carbon stocks

Ecosystem	Estimated monetary value (\$US/ha/year) ¹	Source
Coral reefs	\$15 – \$1195500 \$1100	TEEB 2013 Sector 2006
Mangroves & salt marshes	\$1995 – \$215350 \$5590 ²	TEEB 2013 Sector 2006
Seagrasses	no monetary estimates available	-
Other coastal systems (e.g., shallows, rocky shores, estuaries)	\$250 – \$79600	TEEB 2013

Carbon stock	Below-ground C values (tonnes of C/ha/year) ³	Above-ground C values (tonnes of C/ha) ⁴
Mangroves	0.20 – 9.5	145.3 (average)
Salt marshes	0.18 – 17.3	0.6 – 8.1
Seagrasses	0.45 – 1.9	0.000001 – 0.0055

1. Provisioning, regulating, cultural and social services provided by ecosystems—see de Groot *et al.* (2002) for classifications, descriptions and valuation of ecosystem functions, goods, and services
2. Does not include values for salt marshes
3. Data from McLeod *et al.* 2011
4. Data from Hutchison *et al.* 2013 (mangroves), Chmura 2013 (salt marshes), Fourqurean *et al.* 2012 (seagrasses)

The purpose of valuation is to make the value of each ecosystem explicit, rather than to put a monetary value on nature. Despite the fact that seagrass beds provide a wide range of ecosystem services, including coastal protection, erosion control, maintenance of fisheries, water purification, and carbon sequestration among others, no estimates of monetary values for most of these services are available (see Barbier *et al.* 2011)(Table 23). Nevertheless, in terms of fisheries valuation and economic contribution, ~12700 ha of seagrass degradation has been equated with fishery production losses valued over US\$220000 (in Australia; McArthur and Boland 2006). Queen conch, spiny lobster, sea urchin, as well as sea turtle yields are directly linked to seagrass beds (see Section 2.3.3) and represent important sectors in the Grenadian fishery (total fish exports ~US\$3900000 reported for 2009; GoP 2011). In 2004, yields of conch, lobster and turtles generated US\$262000 (referenced in Sector 2006) and limited sets of catch statistics indicate a significant seagrass urchin fishery ongoing today (Pena *et al.* 2009). In terms of valuing coastal protection, even low-canopy and low-biomass seagrass beds coastal provide significant protection from coastal erosion (Christianen *et al.* 2013). Coastal erosion in Grenada has been reported as high as 3.6 m/year¹ in the past (specifically, Grand Anse and Levera; Gajraj 1988), thus further highlighting the importance of seagrass ecosystem services in Grenada.

4.2 Forest ecosystems

Among timber production, general agroforestry and non-timber forest products (i.e., direct use values), some of the other benefits delivered by forests via ecological function (i.e., indirect use values/regulating services) provide carbon storage, safeguard watersheds and soils, enable water and nutrient cycling, increase soil fertility and other associated benefits such as the enhancement of agricultural productivity (Cavatassi 2004, Ferraro *et al.* 2012). Valuation studies that quantify ecosystem services for tropical forests are few (Cavendish 2002, Bernard *et al.* 2009, Ferraro *et al.* 2012). No monetary estimations in relation to forest ecosystem services could be provided as for coastal ecosystems—see Table 23. Nevertheless, the relative importance of direct-use and indirect-use value components for tropical forests (typical of Grenada) is summarized in Table 24.

4.2.1 Forests and watersheds

The safeguarding of watersheds is a major priority for Grenada (Geoghegan *et al.* 2003, CEHI 2007, Peters 2010). Forest ecosystems provide a range of watershed services, including hydrological regulation, flood control, groundwater recharge, water quality enhancement, and soil conservation (Sharachandra 2009), which is of particular importance for Grenada because rainfall is highly seasonal, locally limited (e.g., Carriacou), and important agrarian landscapes downstream (e.g., nutmeg, cacao) are affected by soil-hydrological processes from upstream forests (see Bonell and Bruijnzeel 2004). No current data is available in relation to watershed processes in Grenada (e.g., peak and low-flow levels, groundwater recharge rates, water quality, erosion rates) (but see Ternan *et al.* 1987, 1989), hence no estimates of monetary values for the aforementioned ecosystem services are currently possible. Further, few studies with sufficient original data are available, presenting a major technical challenge for valuation studies or payment for these types of ecosystem services (Ternan *et al.* 1989, Locatelli and Vignola 2009). However, in terms of broader economic valuation, water supply revenue in Grenada was over US\$3880000 (1 % of GDP) (in 2004; from Sector 2006).

¹Gajraj (1988) does not provide further detail on purported erosion rate

Table 24: Ranked economic values by forest type (adapted from SCBD 2001)

Direct-use value	Mangrove	Montane ¹	Moist broadleaf ²	Semi-deciduous
Timber	x	x	✓✓	✓✓
Fuelwood/charcoal	✓	x	x	✓
NTFPs ²	✓	x	✓	✓
Genetic information	x	✓	✓	✓
Recreation/tourism	x	✓	✓	✓
Research/education	✓	✓	✓	✓
Cultural	x	✓	✓	✓

Indirect-use value				
<i>Watershed services</i>				
<input type="checkbox"/> Soil conservation	✓	✓✓	✓✓	✓
<input type="checkbox"/> Water supply	✓	✓	✓	✓
<input type="checkbox"/> Water quality	✓	✓	✓	✓
<input type="checkbox"/> Flood/storm protection	✓	x	x	x
<input type="checkbox"/> Fisheries protection	✓	✓	✓	✓
<i>Global climate</i>				
<input type="checkbox"/> Carbon storage	✓	✓	✓	✓
<input type="checkbox"/> Carbon fixing	✓	x	x	x
<i>Biodiversity</i>	✓	✓✓	✓✓	✓

✓ benefit, x no effect

1. Associated to *Sierra palm*, *transitional & tall cloud forest* and *Elfin & Sierra palm cloud forest*—see Table 16
2. Associated to *Seasonal evergreen & evergreen forests*
3. Non-timber forest products

The main focus for watershed management activity in Grenada is within the interior mountain range, and especially at the Grand Etang/Annandale Forest Reserve and Mount St. Catherine project sites (see Map 1) (Geoghegan *et al.* 2003). Surface water (e.g., watershed catchment basins) provides the majority of the island's potable water (~90 %), with groundwater use increasing during the dry season (Geoghegan *et al.* 2003). The largest of all watersheds is by far Great River (Ternan 1989—Watershed 29), which feeds the island's major natural water storage reservoir at Grand Etang. Grand Etang and Annadale supply potable water to the capital city of St. George's and the surrounding area (where the majority of the island's population is established) and provide the estimated 85 % of all non-domestic water, which is consumed in St. George Parish (Geoghegan *et al.* 2003, Sector 2006).

Severe watershed soil erosion has not appeared to be an island-wide issue in the past, particularly because much of the agriculture in Grenada is based on tree crops (Ahmad 1977, GoG 2009). However, high-suspended sediment concentrations in excess of 1000 mg/L have been recorded in rivers of the Beausejour watershed during rainstorms (ridge-to-reef project watershed focal area) (see Ternan 1989—Watershed 11). Under such circumstances, this translates to an estimated rainstorm discharge that includes 150 kg of soil leaving the watershed every minute (Ternan *et al.* 1989). While 1000 mg/L suspended sediment concentration may not be an absolute indicator of accelerated erosion in Grenada, high sediment concentrations discharged into the sea following rainstorms markedly affect water clarity. Coral reefs south of St. George's are degrading due in part to this reduced water clarity and sediment deposition (Ternan *et al.* 1989, pers. comm. 2013, R. Baldeo—Fisheries Division).

4.2.1 Forest carbon storage

Evaluating contributions of forest ecosystems to climate change mitigation requires well-calibrated models with quantified baseline carbon stocks, which is not currently accessible for many countries including Grenada (see Keith *et al.* 2010). However, biome-average approaches are often used in the tropics to estimate national-level forest carbon stocks and are still widely accepted (Gibbs *et al.* 2007). This approach is fairly generalized (i.e., with a high degree of uncertainty), but nonetheless is noted to work better for smaller areas than larger ones (and thus reasonably suited for Grenada within the current scope of the ridge-to-reef project).

Carbon stock estimates (including above- and below-ground carbon stores) calculated for ridge-to-reef project sites are presented in Table 25, and correspond to carbon stores indicated in the project identification form (PIF—see component 1).

Table 25: Forest carbon stocks for ridge-to-reef project sites in Grenada and Carriacou (all sites together)

GRENADA¹

Biome classification	Biome estimates of carbon stock ² (tonnes of C/ha)	Forest area at project sites (ha)	Carbon stock estimates ³ at project sites (tonnes of C/ha)
Tropical dry forest	47–126	237.2 ⁴	15900 – 42626
Tropical equatorial forest	193 – 200	748.7 ⁵	144499 – 149740
Tropical seasonal forest	128 – 140	2195.1 ⁶	280972 – 307314
Mangrove forest	145 ⁷	126 ⁸	18270
Total estimated tonnes of C at project sites in Grenada			459641 – 517950

CARRIACOU⁹

Tropical dry forest ⁸	193 – 200	182 ¹⁰	35126 – 36400
Mangrove forest	145 ⁷	64 ¹¹	9280
Total estimated tonnes of C at project sites in Carriacou			44406 – 45680

1. Land-classification data from Helmer *et al.* (2008), circa 2001
2. Biome-average forest biomass carbon stock estimates from review by Gibbs *et al.* (2007), and includes estimates from guidelines by the Intergovernmental Panel on Climate Change (IPCC 2006)
3. Includes estimates of above- and below-ground carbon stocks
4. From Table 16: *Drought deciduous open woodland* (4.0 ha) + *Deciduous, evergreen coastal, mixed forest/shrubland* (197.4 ha) + *Semi-deciduous forest* (136.9 ha)
5. *Sierra palm, transitional & tall cloud forest* (563 ha) + *Elfin & Sierra palm cloud forest* (185.7 ha)
6. *Seasonal evergreen & evergreen forest* (1914.7 ha) + *Nutmeg & mixed-woody agriculture* (280.4 ha)
7. From Table 23: average value for mangrove carbon; only includes above-ground carbon stock
8. Includes mangroves within and bordering marine project sites
9. GIS land-classification data from the Land Use Division of the Ministry of Agriculture, Lands, Forestry and Fisheries
10. From Table 16: *Deciduous forest* (54.3 ha) + *scrub and cactus* (127.3 ha)
11. Available data on mangrove cover on Carriacou are more than likely overestimations (see Section 2.2.2)

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5. SUMMARY INFORMATION ON SOCIO-ECONOMIC CONDITIONS

5.1 Background

In 2008¹, Grenada had one of the highest unemployment rates in the Caribbean (25 %), where citizens in the 15-24 year-class accounted for almost half of all unemployed, and female unemployment was nearly twice that of male unemployment (CPA 2010). Further, an estimated 37.7 % of the population resided below the poverty line (<US\$2205/year, CPA 2010; GDP per capita 2008—US\$8094, 2013—US\$8586, Bisset and Francis 2012) and the majority of citizens in rural areas were living in poverty (IFAD 2013) (Table 26).

Table 26: Summary of socio-economic data¹ and available indicators (for 2008—unless otherwise noted; focus on poverty) (adapted from CPA 2010)

		Population distribution	Percent distribution (%)	Registered employers ²	Employability ranking ³	Population distribution living in poverty	Percent distribution living in poverty (%)	Parishioners living in poverty (%)
Grenada (parish)	St. George	36289	33.1	392	2	11893	10.8	32.8
	St. Andrew	29413	26.8	204	5	13195	12.0	44.9
	St. David	12334	11.2	68	7	3637	3.3	29.5
	St. Patrick	11280	10.3	76	6	6392	5.8	56.7
	St. John	9486	8.6	72	4	3478	3.2	36.7
	St. Mark	4310	3.9	35	3	2347	2.1	54.5
	Carriacou	6650	6.1	88	1	437	0.4	6.6
Total population		109762	-	-	-	41379	37.7	-

1. Poverty line in 2008: <US\$2205/year (CPA 2010)

2. Data for 2011 (pers. comm. 2013, R. Jacobs—Statistical Division, Grenada)

3. Data for 2011; Ranking produced with a rudimentary index calculation of employability: [registered employers]÷[population] and does not include any other variable (e.g., education level)

Table 27 shows the percent distribution of employed citizens by employment sector. Analyses of consumption quintiles (see CPA 2010) indicate that lower incomes are strongly correlated with the *Agriculture & Fishing* and *Construction* sectors, whereas higher incomes are correlated with the *Education/Social Security* sector (CPA 2010). No other clear correlations were apparent between levels of income and other employment sectors.

¹ The National Census Report for Grenada (compendium for 2011) is pending and available information is currently limited

Annex 1: Additional Information on biodiversity within the project area (by: S. Aucoin)

Table 27:Population frequency distribution by employment sector in 2008 (focus on poverty)
(adapted from CPA 2010)

Employed (pop. %)	Agriculture & Fishing	Manufacturing	Construction	Wholesale & Retail	Hotel & Restaurant	Transportation	Services	Admin./Social Security	Education/Social Work	Unknown
Living below the poverty line (%)	11.9	0.7	23.5	2.4	3.2	3.5	30.0	0.7	4.3	19.9
Living above the poverty line ¹ (%)	7.5	3.2	18.2	6.1	2.7	3.1	35.1	0.9	8.4	14.5

1. Population frequency distribution by consumption quintile in CPA (2010)

Table 28:Demographics and poverty index of local communities at project sites in 2011
(Grenada only) (adapted from data provided by the Statistical Division, Grenada)

Project site ¹	No. of villages in the vicinity of project site	Total population	Male:female	Poverty index ²
Grand Anse	8	5355	0.97	31
Grand Bras	5	4544	1.05	43
Grand Etang & Annandale	30	8151	1.01	34
Levera Pond & addition	4	1703	1.07	60
Molinier-Beausejour & addition	6	3469	0.97	27
Morne Gazo	5	765	0.88	27
Mt. Hartman	1	422	0.71	33
Mt. Moritz	3	1750	1.09	29
Mt. St. Catherine	14	4458	1.00	55
Pearls	4	2695	1.13	50
Perseverance & Beausejour	3	532	0.95	33
Richmond Hill	4	771	1.05	15
Southeast Coast	15	5512	0.98	29
Woburn Clarks Court Bay	5	1969	0.97	18

- Note that information is site specific as some of the same villages are repeated at different project sites due to proximity (see Appendix 7); any multiplicity of data is removed in tallied totals (Section 5.2, Appendix 7)
- As poor citizens of Grenada are more likely to use wood-based materials than any other type of material in home construction (from CPA 2010), available data on the use of *wood*, *plywood*, and *makeshift* materials of homes (from 2011) were used as a proxy to calculate a basic poverty index for each project site: $[\text{no. of homes made of wood} + \text{plywood} + \text{makeshift materials}] \div [\text{total no. of homes}] \times 100\%$

5.2 Socio-economic conditions of local communities at project sites

A total of 96 local communities (pop. 38643) are found in the vicinity of project sites (Grenada sites only) (Table 28). Few data on socio-economic conditions or information on key demographics of local communities at project sites are currently available (Isaac 2010, Blackman 2013). Some data provided by the Statistical Division is presented in Appendix 7. This data is from the pending National Census Report for Grenada (compendium for 2011), which will provide more complete information upon publication.

No information on local community livelihoods at project sites could be assessed since relevant census information was being compiled at the writing of this report (pers. comm. 2013, R. Jacobs—Statistical Division, Grenada). Nonetheless, some accessible data provided preliminary information on the degree of poverty at the local communities around project sites (Table 28) and background information presented (Section 5.1) can provide some insight on general socio-economic conditions.

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Annex 2: Additional Information on Fisheries

I. Stocks

1. A highly multispecies of migratory large pelagics targeting:
 - (i) *Oceanic Bill fishes* (Marlins, Sailfishes etc.) and;
 - (ii) *Tunas* (Yellow fins, King-fishes and Dolphin fish etc.)
 - Seasonal catches for the smaller vessels, 8-10 meters but mostly year-round for vessels 11-17 metres.
 - The Fishing area: 10-40 miles off shore.
 - Approximate contribution to national production (1978-2012): 25-75% of total landings.
2. A highly multispecies fishery targeting coastal Dolphin fish, King fishes (mainly wahoo), Skip Jacks, Blackfin tunas, Frigate Tunas, Bullet Tunas, Atlantic Bonitas (*Sarda sarda*).
 - Mostly seasonal annual fishing recruitment that is highly responsive to the North Equatorial current and Orinoco current flows and the biodiversity it brings with it.
 - Fishing area: 5-10 miles offshore and on the island shelf edge.

The close-to-shore stock of coastal pelagics

 - A multi-species close-to-shore, Beach seine fishery (significant) for mainly big-eye and round scads of the carangidae sp. with Balahoo, Sprats, Anchovies, Herrings Atlantic Bonitas and Rainbow Runners.
 - This fishery is not seasonal since gross abundance is constant, with various species in highs and lows with time.
 - Fishing area: close-to-shore bays, 5-50 meters offshore and fishing is conducted under a Territorial Use Rights System(TURF).
 - Approximate contribution to national production(1978-2012): 10-70% of total landings.
3. A demersal fishery that is the most multispecies stock-based fishery, for mainly groupers, snappers, grunts and other red-fish/rock species. This fishery is coral reef-based and supports the subsistence fishery in a significant way.

NB: The category of unclassified landings in the table following, refers to the landings that were inconvenient to record(note that this category decreased between 1988 and 2008 due to keener data collection practices). The four (4) categories given however reflect the variability of catch abundance even more than any market preference or fishing effort applied by fishers. Overall, the unclassified stock/catch reflect landings of the demersals more so than any other species/stock.

Annex 2: Additional Information on Fisheries

- This is a seasonal fishery because of the life-cycle characteristics of Snappers, groupers types and grunts which *fatten-up* (build body mass) then; *build eggs* (roe) then; *take hole* (ecological refuge to lay the eggs and protect hatchlings) then; roam about *lean-an-meagre* (aggressive feeding). These fish are also responsive to the biodiversity and salinity and water quality of the ocean currents and Orinoco green water. The catchability/vulnerability to fishing pressure of this stock, depends on the tides/and currents. Pot-fishing has become less popular than before but efficiencies of other gear/methods have increased vulnerability of the stock.
 - Fishing area: close-to-shore, 500 meters unto the island shelf edge 5-8 miles offshore and on traditional mounds/of aggregation points on the offshore (*Seche*). The *seche* also attracts migrant oceanic species.
 - Approximate contribution to national production (1978-2012): 5-10% of total landings.
4. The Shellfish fishery that involves free divers and SCUBA divers who target species such as SpinY lobsters, Conch (Lambi), Turtles, Topshells and other sea-snails etc. These fishers also target whitemussel-eggs (since 2001 this species stock has been under strict controls but the stock is recovering from the collapse in 2000/2001) ;and fishers target Seamount (gracilaria seaweeds).

This fishery is seasonal mainly because of an annual law-based *close season* restriction for growth/size of specimens in the catch and for recruitment over fishing (egg-laying).

The Fishing area: 1-5 miles offshore.

Approximate contribution to national production (1978-2012): 3-5% by weight but 10-20% by money value.

II: ISSUES AND KEY POINTS TO NOTE

1. The Grenada Fishery is chiefly pelagic and ocean-based. The ocean fisheries target mainly the mobile species/of regional or international shared stock and hence stocks that can use ecological refuges such as spaces beyond the ocean shelf (deep) to escape fishing pressure; stocks that have reduced vulnerabilities due to bad sea-weather conditions that restrict fishers' access to them.
 - The oceanics and coastal pelagic –migrate
 - The demersals/rock fish – go to life-cycle refuges.
2. For the stocks (mainly rock-fish/demersals) that are more vulnerable to a subsistence and rural population and dive services providers, having easier access to the closer-shore reef fish and pelagic fish, there are distinct threats:
 - Threats due to improving efficiencies of gear and methods available to subsistence fishers;
 - Threats of high demand for juvenile “scads”, as bait, for the oceanic pelagic fishery.
 - Threat of high demand for larger “scads”, as bait, for the oceanic pelagic fishery; making less scad fishless available to the rural population.
 - Threats of high demand for the roe of species such as white sea eggs.
 - Threats such as spear fishing pressure on the close-to-shore reefs.
 - Threats of over use of traditional dive sites that are highly accessible because of convenient depth of reef.
3. The engagement of such a large segment of Grenada fishers with the offshore fishery allows for less pressure on the closer-shore reef species, and stocks.

Even as rural fishers on the east coast of Grenada would opportunity to access the more extended deep sea coral reefs in the area, yet constant adverse sea weather conditions due to the prevailing impact of the North-East trade winds make demersal fishing risky and unprofitable, for most of the year. On the other hand, on the west coast there is considerably less shelf and rock fish stocks except for the shelf edge and on banks/mounds on the offshore where fishing is more productive.
4. Engagement (of fishers) with the fish stocks, depends on subsistence needs, access to fishing grounds and in the case of commercial fishing, private profitability.
5. Dive services providers facilitate tourist by using the reef Ecology/environment, an eco-asset, as a tourist product. Although as a non-consumptive use of stocks and habitat, the practices used by dive services providers have had adverse impacts that an MPA program is attempting to control on the one hand and to exploit opportunity for on the other. The yachting industry (significant) also has impacts on the coral reefs, as eco-assets, especially, but not only, among the out islands of the south Grenadines.

Table 1: Recorded fish production Grenada

	1978		1988		1998		2008	
Category of fish stock	Tonnes	% of catch	Tonnes	% of catch	Tonnes	% of catch	Tonnes	% of catch
1. Oceanic pelagics Bill fishers, Tunas	1171.2	62.6	812.5	40.6	1346.9	73.6	1779.2	74.5
2. Coastal pelagics and Dolphins Kingfishes smaller Tunas Beach seine/close to shore pelagics Carangidae sp. Sears	468.9	25.0	343.2	17.2	180.1	9.7	84.9	3.6
3. Demersal fish Snappers, Groupers grunts	93.7	5.0	227.0	11.4	103.7	5.6	508.3	21.3
4. Shell fish lobsters	28.6	1.5	46.4	2.3	60.8	3.3	14.2	0.6
5. Unclassified fish(mainly demersals)	109.9	5.9	570.9	28.5	154.4	8.3	21.3	0.9
TOTAL	1872.2	100	2000	100	1853.9	100	2386.9	100

SAFETY AT SEA CAPTAINS' TRAINING COURSE

THURSDAY Oct. 18th 2007

**MELVILLE STREET FISH
MARKET COMPLEX**

by

Roland A. Baldeo
Technologist, Fisheries Division

Fishing Industry

- No. of Boats 700
- No. of Fishermen 3,500
- No of Fish Vendors 70
- No. of Fresh Fish Exporters 3
- No. of Fish Trading Vessels 5

FISHERIES RESOURCES IN GRENADA

- SMALL AND LARGE OCEANIC PELAGIC;
- COASTAL PELAGICS;
- DEEPSLOPE AND REEF DEMERSAL;
- LOBSTER, CONCH, TURTLE.

Trolling Vessel



Trolling Vessel



- No. of Vessels: 175
- Length: 16 – 24 FT
- Hull - wood
- Power: 60 – 85 hp OBM
- Distance: 10-50 nm
- Crew : 2 men
- Safety Items: VHF, Flares, Compass, Life Jacket, First Aid Kit; GPS; Flashlight

Type I Longliner



Type I Longliner



- No. of Vessels in Fishery – 210
- Length - 14 – 21 FT
- Engine - 25 – 40 HP
- Distance - 5 - 15 miles
- Crew: 2 men
- Mandatory Safety Items - VHF Radio, Compass, Life Jacket, Distress Flares, First Aid Kit



Type II Longliner

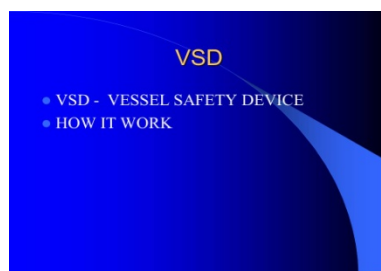
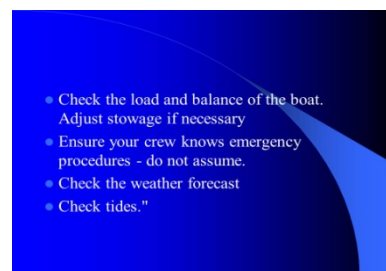
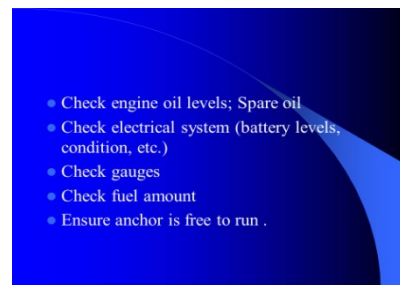
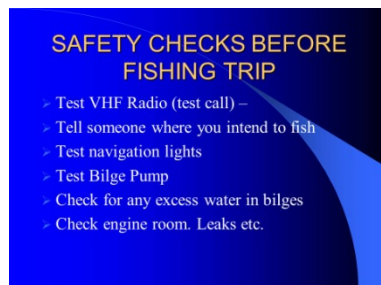
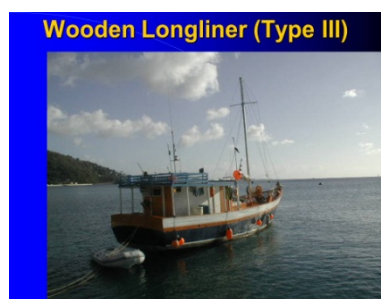
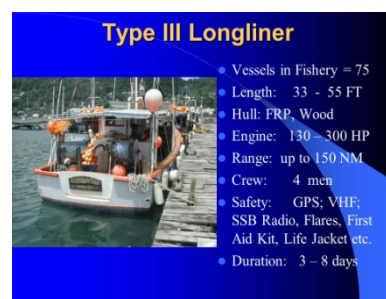


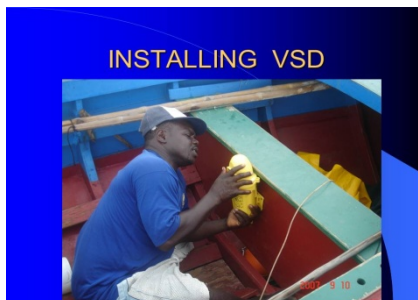
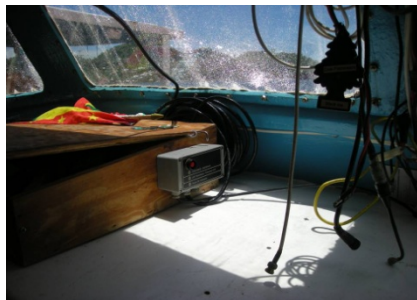
Type II Longliner



- No. of vessels in fishery - 210
- Length - 21 – 28 FT
- Hull - FRP
- Engine: - 2 x 40 -75 hp
- Range: 10 – 50 NM
- Crew: 3 men
- Safety: VHF Radio, GPS, Life Jacket etc.

Annex 2: Additional Information on Fisheres





MAIN CAUSES OF DISTRESS FOR THE PAST 25 YEARS

FACTORS	PERCENTAGE	DEATHS
• ENGINE FAILURE.	34 %	9
• DISCHARGED BATTERIES	12 %	3
• INSUFFICIENT FUEL.	12 %	4
• DISORIENTATION.	5 %	4
• COLLISION	8 %	2
• ROUGH SEAS	15 %	11
• UNKNOWN	14%	17

MANDATORY SAFETY ITEMS – SAFETY AT SEA REGULATIONS

- VHF MARINE RADIO
- GPS
- COMPASS
- FLASHLIGHT
- LIFE JACKET
- DAY AND NIGHT DISTRESS FLARES
- ENGINE REPAIR TOOLS
- FIRST AID KIT
- WATER AND SPARE DRY FOODSTUFF



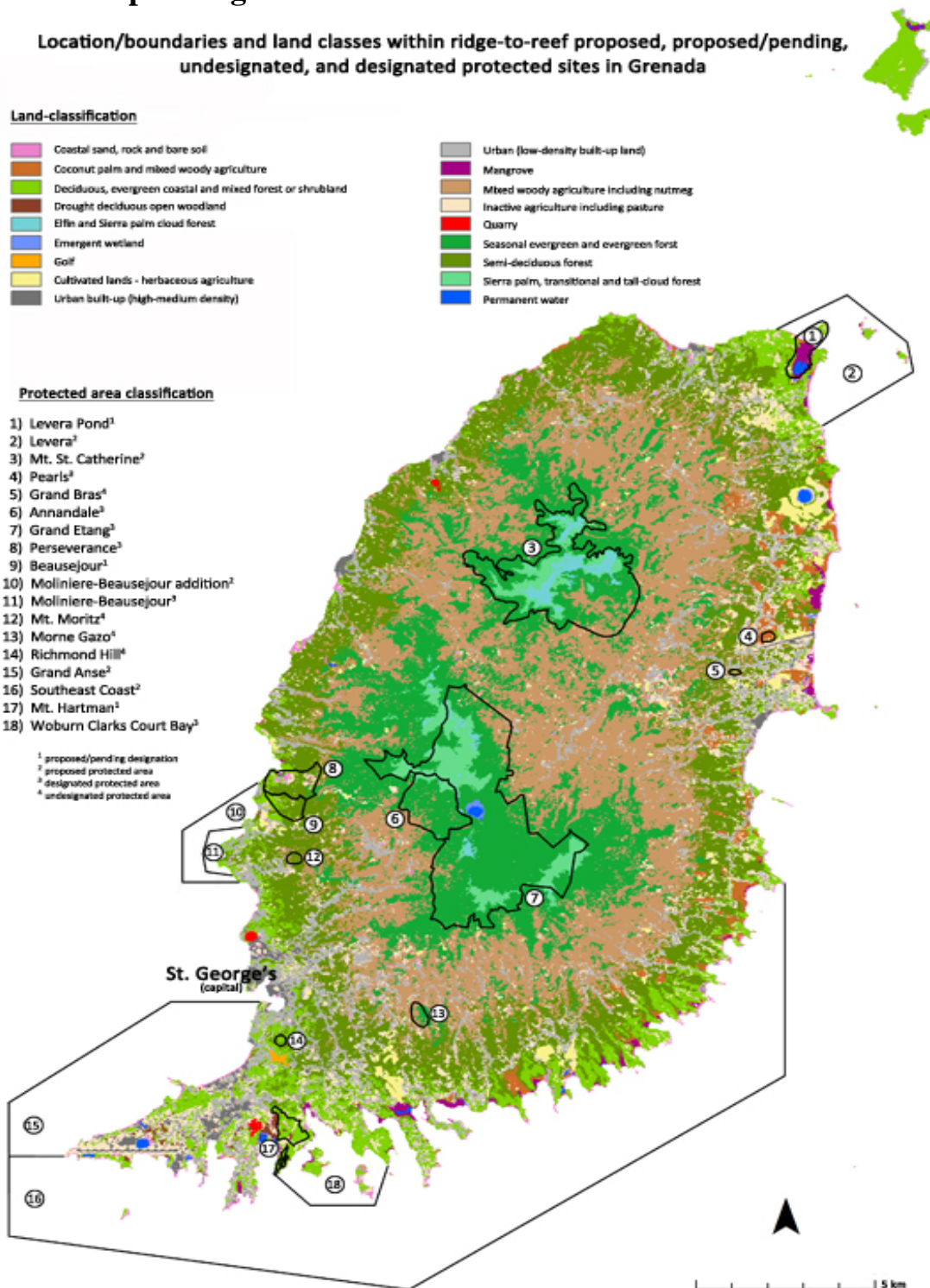


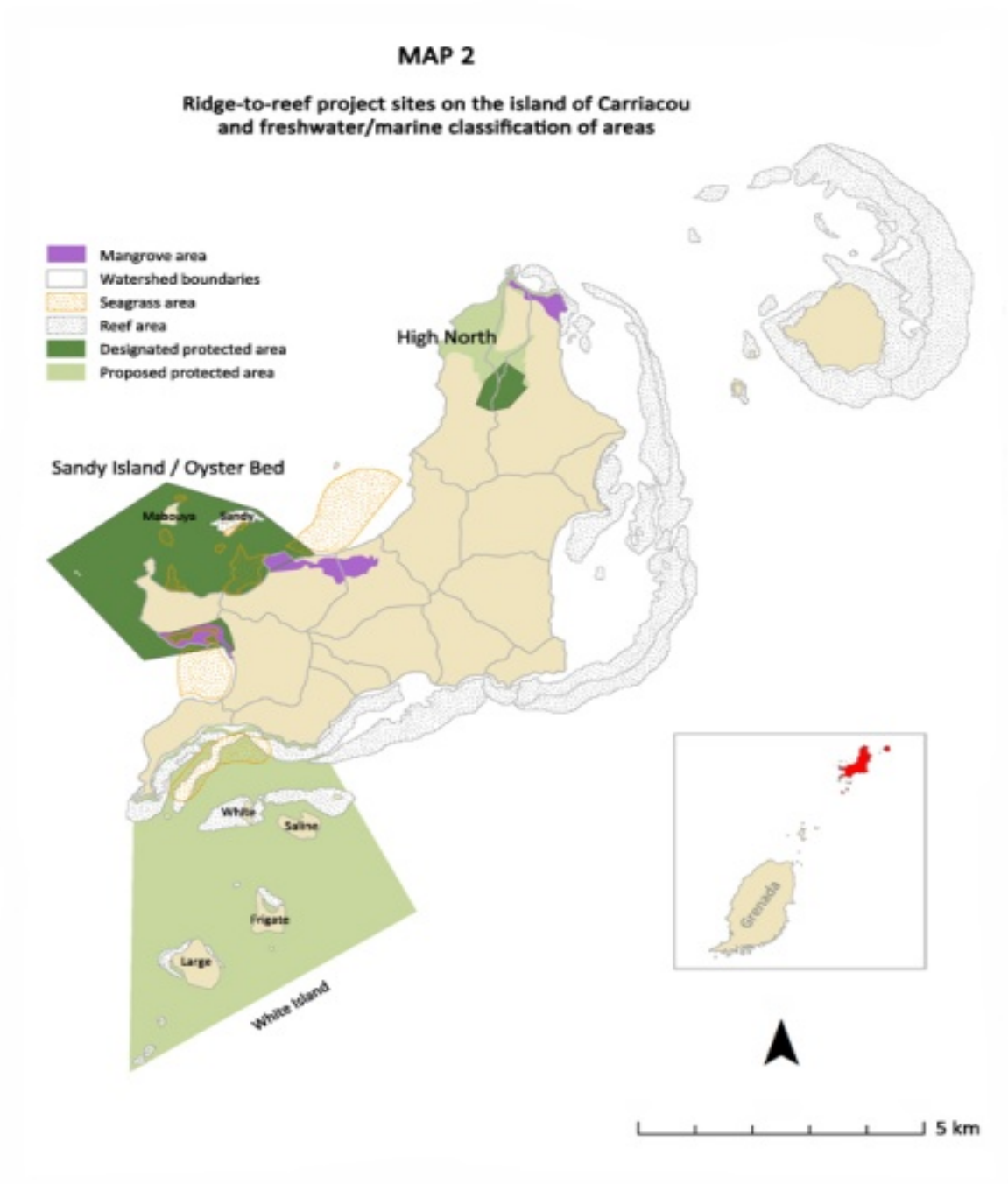
Annex 2: Additional Information on Fisheries

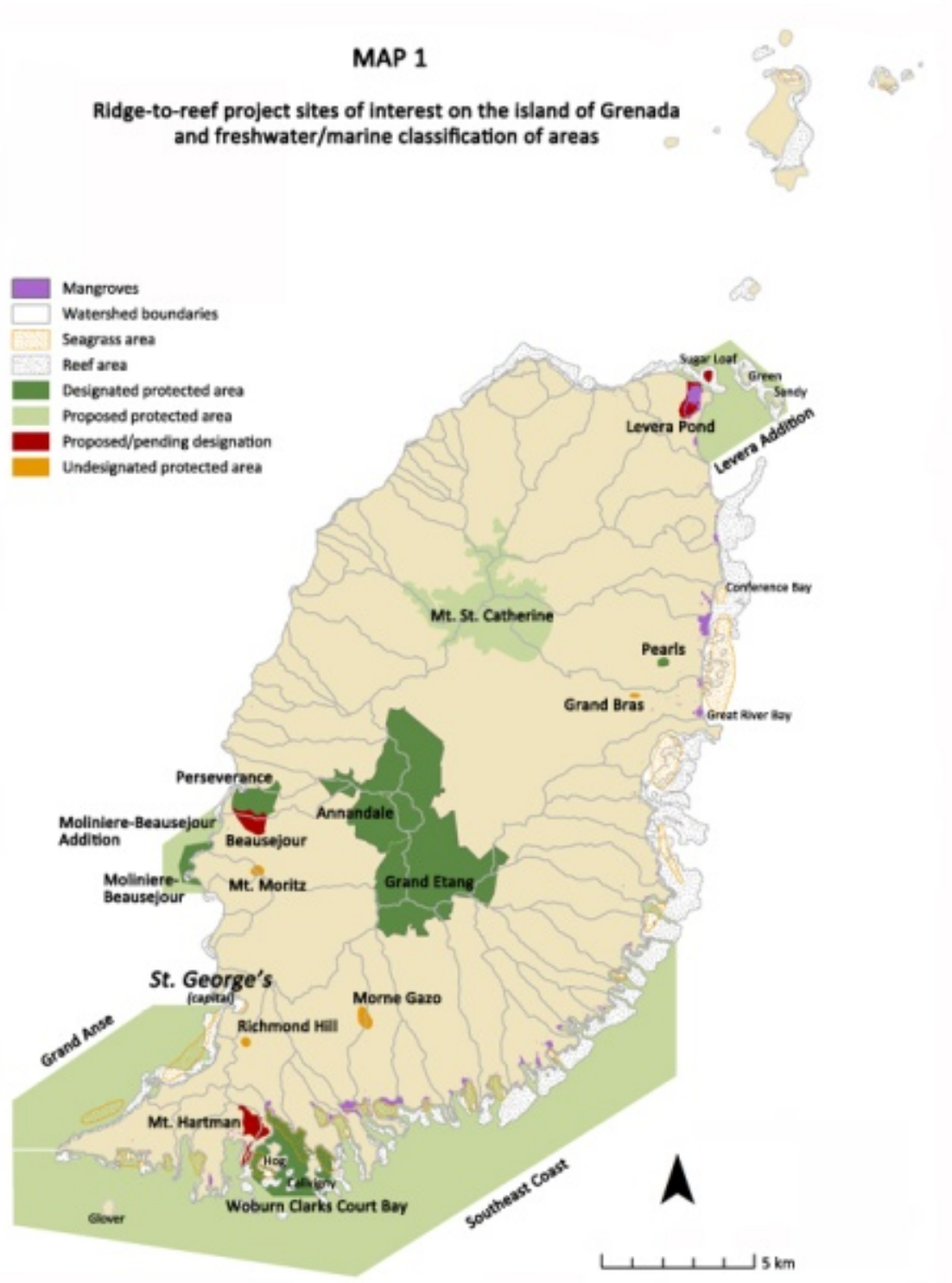


Annex 3: Maps & Figures

MAP 3







Annex 4: Information on PAs within the Project Area

1. PROTECTED AREA SYSTEM AND MANAGEMENT EFFECTIVENESS

1.1 Context and background

The basis for the establishment and management of a comprehensive National Protected Area System in Grenada are largely provided in reports *Plan and Policy for a System of National Parks and Protected Areas* (Huber and Vincent 1988), *Review of the Policy, Legal, and Institutional Frameworks for Protected Areas Management in Grenada* (Gardner 2006) and notably so in the recently approved *Grenada Protected Area System Plan* (Turner 2009). These reports reveal the major issues and impediments still largely relevant today (and reiterated through the proposed ridge-to-reef project), while indicating the necessary steps to address the challenges in legislation and institutional organization that have affected Grenada's efforts to establish a centralized protected area system and efficiently manage existing/future protected areas.

In summary, the main obstacle in enabling a centralized/single-act legislative protected area system required to efficiently manage existing/future protected areas, resides in implementing the number of legislative and strategic tools currently available. Existing protected area legislation in Grenada is well defined and offers significant powers through (1) the *1949 Forest, Soil and Water Conservation Act*, (2) the *1986 Grenada Fisheries Act* and its accompanying *Fisheries (Marine Protected Areas Regulations) Regulations 2001*, (3) the *1990 National Heritage Protection Act*, and (4) the *1991 National Parks and Protected Areas Act* (see Turner 2009). The latter, which has yet to be implemented, would require the appointment of a Director of National Parks, the necessary staff for the administration of a centralized national parks system (detailed in Turner 2009), the establishment of the *National Park Advisory Council*⁴ (see Section 1.3.1) and the *National Parks Development Fund*², where revenue generated by protected areas (e.g., fees, licenses) would flow directly into the *Fund* instead of the government's consolidated revenue (see framework provided in Sector 2006). Further, under this *Act* the government can acquire land for protected area designation through purchase, lease, exchange or donation.

The implementation of the *1991 National Parks and Protected Areas Act*, alongside the present *1949 Forest, Soil and Water Conservation Act 1986*, the *Grenada Fisheries Act* and *Fisheries Regulations 2001 (Marine Protected Areas)*, currently ensures the legislative tools necessary to manage a National Protected Area System; however, said issues of legislative conflict/overlap and confounded policy directions would still remain (see Gardner 2006, Turner 2009). Nonetheless, solving issues of overlapping legislation associated with protected area management would be facilitated by the implementation of the existing *Draft Protected Area, Forestry and Wildlife Act*⁵ (Cirelli 2003) and with assistance provided through the *OECS Protected Areas and Associated Livelihoods Project* (OPAAL); specifically, the report on *OECS Policy on Protected Areas Systems and Model Protected Areas System Act* (Knetchte and Nichols 2007) as suggested by the Grenada Protected Area System Plan (Turner 2009). Although these issues have long been recognized and many initiatives have been undertaken, more pressing demands (e.g., education, housing, unemployment, natural disasters) have been placed on government resources (Turner 2009).

⁴ Project identification Form (PIF) expected **Output 1.1**: Institutional Framework for PA System Management

⁵ PIF expected **Output 1.2**: Legal / Regulatory Framework for Protected Areas

1.2 Government budgets in relation to managing protected areas

Terrestrial and marine protected area programs, including provisioning/permitting of tourism & recreation opportunities and protection of natural/cultural resources are provided by (1) the *Ministry of Agriculture, Lands, Forestry, Fisheries & Environment* (MALFFE) through the *Forestry and National Parks Department* and *Fisheries Division* and, (2) the *Ministry of Tourism, Civil Aviation & Culture* (MTCAC) and its statutory *Grenada Board of Tourism*. Total budget allocations for all governmental programs within these ministries in 2013 (including recurrent and capital expenditure) accounted for just below 6 % of the total country budget (MALFFE: ~US\$11,840,000; MTCAC: ~US\$12,460,000—GoG 2013). It is likely that these budget allocations include external grant support, but this could not be confirmed at the writing of this report.

The ridge-to-reef Project Identification Form (PIF) has projected that MALFFE will spend an estimated US\$6,130,000 to coordinate its environmental policy, laws and programs, and that an estimated US\$10,030,000 will be directed towards protected area management and related conservation activities (during the 5-year period of the proposed project). The latter amount is indicated to include US\$2,250,000 through the *Forestry and National Parks Department*, US\$4,630,000 through the *Fisheries Division*, and US\$2,166,667 through the *Ministry of Tourism, Civil Aviation & Culture* (MTCAC), but no further information is available.

Gardner (2006) reported that budget projections and financial needs for site-level management of protected areas in Grenada are rarely if ever documented in any detail, and that no model of financial planning for protected areas management exists. Generally, past annual government financial commitments to its officially designated protected areas and other recognized protected areas⁶ totals some US\$1,500,000 to US\$1,800,000 (~US\$1,500,000 identified for the 2008 fiscal year—Turner 2009; ~US\$1,800,000 annually, reported by the ridge-to-reef Project Identification Form—PIF). In 2008, the total budget of above-said government providers to overall protected area programs was approximately US\$1,300,000 with contract services and support (outside of government, but sourced by government) providing an additional ~US\$185,000 (Turner 2009). At the writing of this report, current budget information was not yet released by the newly elected government (incumbent since March 2013). Details on present financial commitments remain pending.

Turner (2009) further reported that the *Department of Forestry & National Parks'* annual budget was ~US\$750,000 (including capital), that the Ministry of Tourism's (MTCAC) annual budget for 14 tourism sites, including the visitor complex at the *Grand Etang Forest Reserve* was estimated at ~US\$426,000 (including a ~US\$26,000 cooperative contract at one site), and that the *Grenada Board of Tourism* (which provides permits to vendors) further provides ~US\$150,000 for the maintenance of some beaches, including *Grand Anse*, as well as occasionally funds tourism initiatives. The *Fisheries Division's* annual budget towards managing protected areas is not known.

1.3 Protected area site-level governance framework

Turner (2009) reports that present institutional structures in both the *Department of Forestry & National Parks* and the *Fisheries Division* has been workable at the level of management responsibility in the recent past; however, as protected areas have now begun to increase and continue to progress (primary aims of the ridge-to-reef project and other existing parallel initiatives—see Byrne 2006, Sector 2006, MacLeod 2007, Turner 2009), it is critical that steps outlined in existing key documents (see section 1.1), which aim to implement a protected area system, are now undertaken to begin providing the basic

⁶ Actively managed, but not officially designated (e.g., Levera, Richmond Hill, etc.)(see Turner 2009)

Annex 4: Information on PAs within the project area (S. Aucoin)

framework and tools necessary for effective protected area management in Grenada (which will ultimately facilitate country obligations under the *Grenada Declaration*—see PoWPA 2012⁷).

Gardner (2006) reported that 24 government institutions/agencies and 8 non-governmental organizations (NGOs) have various functions in relation to environmental management in Grenada (refer to Appendix 6 in Gardner 2006). Of these, one non-governmental organization (the *Carriacou Environmental Committee*) and the mentioned government providers (see Section 1.2) have the primary responsibility of carrying out daily operations at protected areas in Grenada. Staffing among government providers (Section 1.2) is reported at approximately 80 full-time employees or rather full-time equivalents⁸ (Turner 2009); however, several positions at this time are vacant due to retired staff, and respective posts will unlikely be filled in the near future (pers. communication 2013, A. Fonteau—Chief Forestry Officer). Turner (2009) provides the most recent study on protected area management in Grenada, and since then government allotments of human resources and support funding have been reduced (pers. communication 2013, M. Turner).

1.3.1 Department of Forestry and National Parks

Turner (2009) reported that the *Department of Forestry and National Parks* had up to 16 full-time equivalents³ dedicated to Department objectives (in the recent past), including administrative management of terrestrial protected areas and reserves (*Perseverance, Grand Etang&Annandale*) and related forest initiatives, as well as up to 24 field staff providing forest ranger and foreman duties. However, in terms of present-day permanent staffing focused directly on servicing terrestrial protected areas, the range of involvement for permanent staff is currently said to vary between 1 to 7 employees, along with a constantly varying number of temporary fieldworkers, determined by seasonal programs largely built up on *ad hoc* bases (pers. communication 2013, A. Fonteau—Chief Forestry Officer).

In Carriacou, one forest officer and the equivalent of two field staff provide forest management for the *High North Forest Reserve* and other crown lands (and report to the *Ministry of Carriacou and Petite Martinique Affairs*) (Turner 2009).

Legislation administered by the *Department of Forestry and National Parks* calls for the establishment of the *National Park Advisory Council*¹ (mandated under the *1991 National Parks and Protected Areas Act* as yet implemented—see Section 1.1) to counsel government on issues other than day-to-day management of Grenada's national parks and terrestrial protected areas (Turner 2009).

1.3.2 Fisheries Division

The Fisheries Division has 1 full-time employee dedicated to marine protected areas. Although initiatives on providing marine park wardens are in progress (McConney *et al.* 2010), there is no field staff at present to directly support management of existing marine protected areas (*Woburn Clarks Court Bay, Moliniere-Beausejour, Sandy Island/Oyster Bed*). Nonetheless, other *Division* staff (9 permanent, 1 temporary) will provide support on a need-by-need basis (pers. communication 2013, R. Baldeo—Marine Protected Area Coordinator).

Legislation administered by the *Fisheries Division* calls for a co-management agreement between the

⁷ Submitted to the *Secretariat of the Convention on Biological Diversity* on the 04/13/2012

⁸ Full-time equivalent equates to one person for one year of employment—see Turner (2009)

*National MPA Management Committee*⁹ (mandated under the *Fisheries Regulations 2001* to manage all MPAs nationally, and in the case of Carriacou in collaboration with the *Ministry of Carriacou and Petite Martinique Affairs*) and locally established *MPA Co-Management Boards* (see McConney *et al.* 2010; Jeffrey *et al.* 2012) to assist in fulfilling on-site marine protected area responsibilities (in the case of Carriacou, currently facilitated by the *Carriacou Environmental Committee*) (Jeffrey *et al.* 2012).

1.3.3 Ministry of Tourism, Civil Aviation & Culture

Turner (2009) reports that 3 full-time equivalents are dedicated to the administrative management of tourism and heritage sites/protected areas, and that up to 37 field staff are provided at 14 tourism sites, including staff for the visitor complex at the *Grand Etang Forest Reserve*. Field staff includes booth attendants, interpreters, laborers, cleaners and security personnel providing management services and five staff under contract for security (Turner 2009).

2. SUMMARY OF MAIN BARRIERS TO IMPROVED MANAGEMENT AND PROTECTED AREA DEVELOPMENT

The barriers to sustainable environmental and land management in Grenada are well documented in the report *Capacity Building and Mainstreaming of Sustainable Land Management in Grenada* (GoG 2007) and correspond with barriers to improved environmental and protected area management faced today. Recapitulated in part from this report (GoG 2007), and further emphasized in the recent *National Environmental Summary* (Singh 2010), the barriers that impede effective environmental and protected area management in Grenada are summarized as follows:

2.1 Institutional and policy

As detailed in Section 1.1, there is no comprehensive system for protected areas or a central coordinating authority in Grenada (nor is there one with respect to physical planning/land development—see Section 2.4) that would harmonize roles, responsibilities and resources for effective administration/management. There is a marked lack of coordination between current agencies with responsibilities related to environmental administration/management (including protected area management). In some cases there is an overlap in agency jurisdiction or no clear authority for actions taken (e.g., regulation of development in mangroves and coastal wetlands in the region of Tyrell Bay and Sandy Island/Oyster Bed Marine Protected Area). Further challenges persist with respect to commitments and administrative backing within and across agencies, including internal buy-in and employee engagement from the different agencies with responsibilities to sectors dependent on environmental resources.

There are 45 Acts said to govern protection and management of Grenada's environment and natural resources (BSAP 2000, Singh 2010), often cited as impeding clear policy direction and management. However, the fact remains that the main barrier to effective protected area management, specifically the "*operationalization [sic] of the protected area system*" as outlined in the ridge-to-reef Project Identification Form (PIF) or from other key documents directed at protected area management in Grenada (Sector 2006, Turner 2009) has been political resolve. Indeed, legislative tools are in place (refer to Section 1.1), and work would be well guided (wholly or in part) by frameworks provided by an approved

⁹ The Grenada Fisheries (Marine Protected Areas) Order, 2001 (SRO No 77 of 2001) regulations section (4) provides for a Management Committee for MPA. This Committee which was appointed by Cabinet in 2010 has the legal responsibility for the management of all MPAs in the tri-island state.

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protected area system plan (Turner 2009), as well as by a number of approved protected area management plans and recent management strategy reports (e.g., Annandale & Grand Etang–Turner 2007; Levera–GoG 2009; Perseverance/Beausejour–Rusk 2010; Moliniere/Beausejour–GoG 2010, Baldeo *et al.* 2012; Sandy Island/Oyster Bed–Barriteau *et al.* 2007).

At a minimum, two key factors required for effective management of protected areas in Grenada lie in the establishment of the *National Parks Advisory Council* (mandated by the 1991 *National Parks and Protected Areas Act*, yet to be implemented) and the *Management Committee* for marine reserves (or their equivalent under revised legislation) (see Turner 2009). This *National Parks Advisory Council* and the *Management Committee* could be implemented without substantial cost and would greatly assist in ensuring public support for protected areas. Their establishment is one of the primary objectives of the reef-to-ridge project and key to an eventual protected area system. This, in concert with the establishment of sites that are already treated as designated protected areas (e.g., Mt. St. Catherine) but have yet to be legislatively recognized should incur minimal cost as much of the groundwork has already been conducted (as indicated in Turner 2009).

2.2 Economic and financial

In general, current agencies/institutions have been previously assessed as having insufficient financial resources to effectively perform mandates, as well as inadequate human and technical capacity. Research and monitoring programs are minimal because of limited investment. The Ministry of Agriculture, Lands, Forestry, Fisheries & Environment (MALFFE) through the Forestry and National Parks Department does have relevant outreach programs, but these do not extend beyond crop/livestock production and control of infractions within forest reserve areas on account of resource limitations. Stakeholders such as farmers and fishers, where the poorest often rely exclusively on resources near protected areas and/or vulnerable areas for their livelihoods, are unable to take required conservation measures either because they cannot afford them or have no options.

Reports have indicated the economic contribution that protected areas make to the Grenadian economy (Sector 2006–*Sustainable Finance Plan for Grenada's Protected Areas System*) and further provide frameworks to establish financial management plans for greater revenue generation (see Sector 2006, Turner 2009, Turner 2007 for Grand Etang & Annandale); however, related government initiatives have not yet ensued effectively.

Resource capacity has yet to have been adequately evaluated at either institutional and individual levels, and relatively little in state investments appears to be directed to building capacity across agencies and personnel accountable for environmental resource and protected area management (as well as towards collaborating community groups and associations).

2.3 Technology, knowledge and insufficient capacity

Limited investment in technology, management training and environmental education occurs. While there has been commended efforts by the Fisheries Division and the Department of Forestry and National Parks (e.g., soil conservation), the appropriate technologies to systematically monitor, assess, manage and mitigate environmental degradation are lacking, and insufficient private sector participation in implementation of best practices is said to occur. Besides lacking technological programs and equipment, capacities within state, non-state agencies and stakeholders need to be strengthened to ensure sustainability of technological applications.

Major protected areas initiatives mostly tend to be results of external arrangements and not from national planning processes. Protected area implementation initiatives and management have for the most part

remained project-driven in Grenada, lacking a systematic process of protected area program planning, evaluation, and reporting (Gardner 2006). Under previous project-driven initiatives, personnel from various state and non-state agencies, community-based organizations, farmers and other stakeholders have been exposed to technological applications that are of relevance to sustainable environmental and protected area management; these have ranged from demonstrations of land management techniques to application of information technology to facilitate decision-making. However, once projects come to an end the status quo resumes with little continuity of the initiative. A key barrier in many cases is the lack in effort to institutionalize these initiatives into the business plans of agencies and organizations from a human resource development perspective. Personnel who may have benefited from capacity building themselves are often not sufficiently empowered to become resource providers, and there is generally little attempt at creating the environment that warrants active demand of skills attained in real world applications.

The relatively high turnover rate of skilled technical personnel in government agencies is of further concern. Once personnel obtain valued skill sets they tend to seek alternative more lucrative employment, in many cases within the private sector. A general perception is that the mandate for human resource capacity building in technical areas lies with the state. As a result, expertise that may reside in the private sector is often overlooked as a potential ally in building overall national human resource capacities for environmental management. There are generally only weak attempts to solicit active engagement of private sector partners in human resource development.

National level planning is also challenging because access to information on past and existing land resources and environmental conditions is lacking or difficult to access. The Land Use Division within the Ministry of Agriculture, Lands, Forestry, Fisheries & Environment (MALFFE) manages the spatial information system and services; however, much of the data still needs archiving, some datasets need to be revised (e.g., coral reef areas, seagrass distribution) and others updated (e.g., land classifications). All staff with geographic information systems (GIS) responsibilities should be provided with further training to facilitate data access, management, integration, analysis, standards and communication. Among the other agencies that generate and utilize spatial information products (e.g., Physical Planning Unit, Cadastral Surveys Unit), information used are sometimes different, with data at times being incompatible with other systems in use rendering dissemination of information difficult. An environmental resources information system based on spatial information systems technology that is accessible to technical and policy level professionals has been repeatedly identified as a pressing need. Such a system would greatly enhance harmonized and coordinated planning efforts by all agencies concerned with land development, environmental and protected area management.

2.4 Land acquisition and protected area development

Lack of a land registry limits the availability and access to information on state land assets, which hinders planning processes in relation to potential land allocations for protected areas. Grenadians have clear transferable property rights for land, with the exception of crown lands and coastal areas. However, adjacent lands in coastal areas are considered prime real estate, and these areas in development continue despite consequent degradation to environmental quality. Land markets are not influenced by environmental factors, including natural hazard risk exposure. Further, the land tax pricing system is not risk-based and does not discourage investment into highly vulnerable areas.

The majority of all land in Grenada is privately owned (85 %—Singh 2010), with a pricing system controlled by market factors. This renders the acquisition of private lands for protected area development potentially costly without clear co-management mechanisms (but see Section 1.1 referring to the as yet implemented *1991 National Parks and Protected Areas Act*, where mechanisms do exist to acquire land for protected area designation). Unfortunately, some existing policies can also be used to formalize the

Annex 4: Information on PAs within the project area (S. Aucoin)

use of vulnerable and ecologically important areas (e.g., tourism development, land claims through squatting), and where other policies/regulations meet aims of sustainable land management they are often not enforced. In general land management planning processes in Grenada tend to be sector driven and do not sufficiently take into consideration principles of ecosystem services (water, soil productivity, biodiversity, buffers to natural hazards, etc.).

A *National Physical Development Plan* provides the framework for land zoning and development planning, but policy initiatives are relatively new and full implementation has not yet been achieved. Current programs of physical planning need to identify and classify all existing and pending/projected terrestrial/marine protected area programs to facilitate protected area planning processes and accelerate their implementation. The national land use policy has yet to be finalized and implemented, thus unplanned development, expansion of residential activities into vulnerable and ecologically important areas (e.g., steep watersheds, riverine borders, encroachment in critical wildlife/habitat areas) persists. This is of particular relevance in the ridge-to-reef approach of the project focal area of Beausejour (along watershed catchments stemming from Annandale & Grand Etang Forest Reserves, stretching to Perseverance/Beausejour and through to Moliniere/Beausejour Marine Protected Area and Grand Anse—ridge-to-reef projected marine protected area).

3. CAPACITY BUILDING AND TRAINING NEEDS

Turner (2009) reports that current governmental staff has a long history of protected area management (notably for forest reserves and tourism sites), but that their needs have been severely challenged due to other government priorities. Recruitment of protected area staff, retention of staff, and required training need to be emphasized priorities for efficient protected area management and notably so for the implementation of the *1991 National Parks and Protected Areas Act* (see organizational structure proposed for the protected area system in Turner 2009) and the *Draft Protected Area, Forestry and Wildlife Act* (Cirelli 2003). The subsequent establishment of the supportive *National Park Advisory Council* (for national parks and terrestrial protected areas) as well as the *National MPA Management Committee* and *MPA Co-Management Boards* (for marine protected areas) will also require opportunities for training of their respective members in legislation, policy, and best practice techniques for protected area management (Turner 2009).

Training and assessment needs have previously been identified as part of the capacity building component of the *OECS Protected Areas and Associated Livelihoods Project* (OPAAL) (see Parsram 2007). The assessment recommended training listed as follows, which was reiterated in the approved *National Protected Area System Plan* (Turner 2009). This applies wholly to reef-to-ridge project objectives, aside from supplementary training needed with regards to biophysical survey methodologies, data collecting and analyses, and fire prevention & erosion control management techniques (concerning the ridge-to-reef Beausejour watershed focal area).

Training needs identified at the protected area level

- tour guiding skills
- project development
- business management
- environmental education
- customer service training
- site operations and management
- product development and marketing
- communication and negotiation skills

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- cooperation/collaboration partnerships
- organizational management and leadership
- protected areas planning methods and management plan development

Training needs identified at the protected area system level

- fundraising
- communications
- project management
- networking techniques
- participatory processes
- protected areas financing
- identifying and building partnerships
- community outreach and management
- organizational management and leadership
- protected areas systems and network planning
- education and awareness strategy/methods/tools
- integrated conservation and development planning
- planning methods and management plan development
- protected areas regulation protection and enforcement
- tourism/associated livelihoods strategic planning operations

The Nature Conservancy in association with Grenada's National Implementation Support Program also prepared a capacity development plan that identified and prioritized goals, objectives and actions to guide identified strategic directions on protected area management, ranging from protected area designation to public awareness (MacLeod 2007). The plan was based on a management effectiveness assessment and identified integrated management, government policy, human resource capacity and sustainable financing (Turner 2009).

The capacity development plan further addressed 13 strategies with a comprehensive action plan identifying objectives, performance indicators and responsibility. Its capacity building assessment also identified livelihood-training needs for those wishing to provide commercial recreation services in protected areas. The needs included:

- marketing
- tour guiding
- communications
- health and safety
- customer service
- strategic planning
- product development
- business management
- environmental education
- cooperation and collaboration
- financial resources management
- negotiation and conflict resolution
- project development and management
- organization management and leadership

To assist capacity development, formal educational partnerships need to be established with educational institutions and outside park agencies to facilitate capacity development and training. Further, the

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opportunities and financial support should be afforded to governmental staff for professional development. The delivery of ridge-to-reef project objectives, including the protected area system and subsequent management depends on the collaborative effort of government, non-government organizations, the private sector and individuals (Turner 2009).

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Annex 5: Stakeholder Participation Plan for Implementation

Objectives of the stakeholder participation plan

The formulation of a stakeholder participation plan had the following objectives:

To ensure full knowledge by those involved concerning the progress and obstacles in project development and to take advantage of the experience and skills of the participants to enhance project activities (1) to clearly identify the basic roles and responsibilities of the main participation in this project; identify the key instances in the project cycle where stakeholders involvement can occur. The ultimate purpose of the stakeholder participation plan will be the long-term sustainability of the project achievements based on transparency and the effective participation of key stakeholders.

During the PPG phase the inception workshop participants visited the Beausejour watershed to get sense of the scope of issues exemplifying the ridge of reef perspective of landscape to seascape environmental impacts.

Participation Mechanism

Three key phases for stakeholders' participation have been identified for the implementation phase of the ridge to reef project: planning, implementation and evaluation. Project planning will include annual meetings with key PA stakeholders (including members of the steering committee) during which annual assessments will be made and goals will be set for each component of the project. These annual planning meetings will also serve to specific activities that are to be funded through each co financing source.

It is envisaged that, according to UNDP procedures and practices that the project must be managed by a practices board or project steering committee constituted by UNDP and senior services providers as an external project management body and since UNDP will treat project implementation as a partnership and allow the local executing agency Ministry of Agriculture, Lands, Forestry, Fisheries and Environment to adopt a management mechanisms one not inconsistent with that of UNDP, then this local executing agency may set up a local steering committee to advise the project board through the local executing agency. This local steering committee may be set up constituting of representatives of MALFFE (chair), Ministry of Finance/Planning, Ministry of Tourism, IAGDO and CBOs representative. The project evaluation will occur annually with the participation of key stakeholders at the end of each year and before defining the annual work plan for the following year of project implementation. There will also be mid-term and final evaluation that will be carried out as part of the project cycle. Since the evaluation process will be an independent exercise, opportunity will be given for all stakeholders to express their views; concerns and assessing whether the projects outcomes were being achieved and if required suggest a change in the course of action.

It is therefore important that the views of the local steering committee be communicated to the project board/steering committee as a formatted documented response to questions and that such documentation be transparently communicated. Such a mechanism will allow for meaningful and focused periodic evaluations by both project management and stakeholders.

Summary of Stakeholders Roles in Project Implementation

Stakeholders	Projects Implementation Role
Ministry of Agriculture Lands, Forestry, Fisheries, and Environment (MLFFE)	The department of central government designated as executing agency for the implementation of the project on the local level and as agency of government with “command and control: over various technical divisions expected to deliver services essential to the delivery of the project. The divisions and their roles include the following:-
Forestry and National Parks Department(FNPD)	<ul style="list-style-type: none"> • The Forest and National Parks Department is the authority that is responsible for management and conservation of forest ecosystems that include. Landscape vegetation and wildlife and with a special focus on ecosystems services. The FNPD is expected to administer SLM, SFM REDD+, BD and CC mitigation. Principles and practices in collaboration with various other experience of government by design various activities of the project will involve the FNPD in co-management engagements with local area groups and NGOs, CBOs.
Land Use Division(LUD)	<ul style="list-style-type: none"> • The agency responsible for tracking the status and trends with regards to vegetative coverage, land uses and audit of water within the water source on all landscapes. The LUD will be charged with responsibilities for collaborating with other agencies of government for the application of SLM, SFM/RDD+, And CC mitigation principles and practices in collaboration with local area groups, NGOs/CBOs, in INRM exercises.
Agricultural Extension Division (AED)	<ul style="list-style-type: none"> • The agency within the Ministry of Agriculture charged with the responsibility for liaison with farmers for promotion of sustainable use of lands for production and for marketing of farmers’ production, the AED will exercise key roles in mobilizing and animating farmers for applying SLM, SFM/REDD+, BD and CC mitigation practices in the content of mixed farming and INRM practices.
Agronomy and Veterinary Division (A/VD)	<ul style="list-style-type: none"> • The agencies responsible for promoting efficiency in animal and plant production systems and for animal health and security. The A/VD will be charged with the task of promoting INRM through SLM, BD and CC mitigation practices.
Marketing and National Importing Board (MNIB)	<ul style="list-style-type: none"> • The MNIB is a para-statal/Statutory agency of government mandated to facilitate marketing of farmers’ production and for enhancing value-added for farm products. The MNIB will be expected to collaborate with various agencies within the Ministry Agriculture for promoting sustainable agricultural production especially with respect to the pilot project at Beausejour watershed.
Fisheries Division (FD)	<ul style="list-style-type: none"> • The agency responsible for the sustainable management and development of fish stocks habitat and sea space in

Annex 5: Institutions participating in project's implementation

<p>Ministry of Tourism (MoT)</p> <p>National Water and Sewerage Authority (NAWASA) Parastatal/ Statutory Agency)</p> <p>Regional and local Centres of Excellence in support of sustainable management and conservation of the BD and Ecosystems services</p> <p>St. Georges' University (SGU)</p> <p>CEHI</p>	<p>the context of the marine environment that was traditionally utilized as a common property resource within an open access/ free entry regime. The FD will be charged with the task of leading in the process of establishment of MPAs in collaboration with various sea users in a highly contested common property zone. The FD will then have to collaborate with the community of dive services providers yachtsmen and fishers among others; they will also have to collaborate closely with land users and land management authorities together with local area groups in order to ensure SLM, SFM/REDD⁺, BD and CC mitigation and INRM practices are applied for minimizing adverse impacts form landscapes to seascapes.</p> <ul style="list-style-type: none"> • The department of central government responsible for, among other things, the development/enhancement and management of tourist attraction sites, most of these sites form a part of earmarked or designated PAs. The park management unit of the MOT will collaborate with various other agencies for the establishment and expansion of PAs as either nature reserves or other attraction. • The agency of central government mandated to control surveillance and monitor all sequestration of water from any and all terrestrial water sources and also to collect and dispose of sewerage wastes. NAWASA therefore has a critical interest in the sustainable management of the water source and must directly cooperate with all the agencies within the MALFFIE and others in the appreciation of SFM, SFM/REDD⁺ and BD and CC mitigation practicing for sustainable use of landscapes and seascapes. • Academic and technical services institutions with special competences that could enhance sustainable management and conservation of the biodiversity and ecosystems services, with the appropriate enabling support would be able to assist the ridge to reef project in meeting specific objectives. These institutions as specialized bodies would be able to provide enabling that the agencies of government are not able to generate sufficient competency in collaboration of local operation management agencies with such centres of excellence (COE) can be beneficial to both; training for local operations agencies and opportunity for COE to enhance their mission and competency. Among the institution identified are: • SGU has some experience in monitor/measurements of land based sources of pollution • CEHI has competences and experiences in environmental monitor and measurement.
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Annex 5: Institutions participating in project's implementation

CREMES	<ul style="list-style-type: none"> • CREMES (Barbados) has experience in environmental measurement and monitoring. • UWI has experience in M/M also these institutions, having special skills competencies and knowledge can therefore collaborate with the local operations agencies notably, hand use, fisher's provision/MPA, NAWASA for satisfying certain specific objectives. • The association of dive-services providers together with independent dive services operations are expected to collaborate with the MPA coordinating authority, the fisheries division for the purpose of negotiating and adopting best management practices (BMP) in the utilization of coral reef habitats and sea spaces. • The professional non-profit bodies equipped with skills and experience for engaging local area commonly groups and persons for the purpose of facilitating collaboration between Government agencies for funding agencies and these local area groups in order to apply the co-management approach for community-based INRM. • Organized groups of persons dedicating to promoting the interest of communities such as farmers or fishers or landowners/farmers or commercial services or goods suppliers such group will collaborate with NGOs and Government agencies for enhancing SLM, SFM/REDD+ BD and CC mitigation measures. Examples being the Grenada chamber of Industry and Commerce in its support for the "outing " of the use of GHG(Green House Gases); and concessionary loans for alternative energy sources such as solar panels.
UWI	
Recreation Dive-Services Providers	
Non-Government Organization (NGOs)	
Community-Based Organizations	

This Grenada Ridge to Reef project will be using the technical services of baseline recurrent programs while not having a technical support unit of its own. By design, the GEF core funding together with committed support of grant-aid agencies will act as incremental support to the baseline initiatives for the purpose of implementing activities in support of conservation and management of the BD and ecosystems functions within and around PA that would be enhanced and expanded.

Annex 6: SWOT Risk Matrix for GEF Ridge to Reef Project Implementation

Ranking: Weakness/ threats (A) as negatives (-1 to 5) Strengths/ Opportunities (B) as positives (+1 to +5)

Total Level of Risk: Sum of (A/2 + B/2); Low Risk (3.8-5.0); Medium Risk (1.9-3.7); High Risk (1.0-1.8)

RISK LEVEL FOR ASPECTS OF PROJECT INVESTMENT	STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
1. Institutional Enhancement and Enabling Framework.	An institutional framework exists and can accommodate GEF enhancement. [+4]	The limited institutional capacity ,now existing, is a reflection of limited resources available to Government. [-3]	GEF initiative will provide support to alleviate current weaknesses in Governments delivery systems. +5	Government's inability to adapt to changing economic conditions e.g. retooling staff that now exists. [-2]
2. Legal and Regulatory Enhancements and Enabling Framework.	A body of law and administration exists and coupled with new law and regulations can accommodate INRM.	Insufficiency in existing law and regulations reflecting limited capacity for enforcement of INRM measures.	Enhancements to law and regulations are inexpensive to enact/promulgate but can satisfy Grenada's International Obligations.	Persistent Government Apprehensions about enactments that obligate to costly institutional provisions.
3. Capacity Building Support Initiative	A level of capacity exists and GEF initiatives are designed to enhance further.	Limited Resource Support,,limits management capacity.	GEF support coupled with existing capacity expected to provide synergies.	Support for the application of policy instruments, proved to be insufficient. Mt. St. Catherine co-management initiative might fail.
4. Expansion in the Protected Areas System.	Experience in Sites management exists and with felt need for further development.	Larger sites are more remote to the local public while closer smaller sites lack attractiveness.	GEF initiatives provides for the programmatic approach to PAs development and management.	Sustainable financing remains weak. Mt. St. Catherine issues remain unresolved.
5. Institutionalization of the PAs System	Government current policy promotes PAs as instruments for INRM and GEF initiatives are designed to support.	Sustainable financing for a fuller PAs systems is highly challenging for Gov't.	The GEF initiatives promotes the systemic approach to financing and management.	MPAs and TPAs, as space-based management, is insufficiently sold for its benefits to local area people.
6. Applications of INRM Principles and Practices.	Both Government and GEF promote INRM.	Currently stakeholders having limited accustomedness for INRM and Comanagement.	The GEF initiative allows for the multi-focal; multi-agency and comanagement approach to INRM.	CBOs/ NGOs and Competent Authorities are constrained in accommodating collaboration and comanagement.
7. Engagement with Local Area Stakeholders.	Both Government and GEF promote engagements with local area persons as first step in comanagement.	Building accustomedness to INRM and co-management is a time-consuming and extended process.	GEF initiative is designed to promote cost-effectiveness and multi-stakeholder co-management.	Key Local area stakeholder do not recognize sufficient prospects for private profitability in participation.
8. Applications of Science Based and TEK/LA Based Knowledge.	There is a willingness to accommodate TEK and science-based knowledge and	Optimizing benefits from farmers' use of both science based and TEK is a skillful	The GEF initiative has 'designed-in' mini-projects that are geared towards	There is limited uptake and participation by local area persons.

Annex 6: Risk Matix

RISK LEVEL FOR ASPECTS OF PROJECT INVESTMENT	STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
	vice versa.	process.	cooperation.	
9. Application of Science.		That must show private profitability/	Existing practices considered by farmers as having private profitability but needing support.	If farmers and landowners conclude that their private profitability is compromised rather than enhanced.
10. Applications of Specific INRM. SFM/REDD+ (Terrestrial)	Farmers/ Landowners strength of interest in private profitability from participation in the GEF initiative.	Skill in demonstrating private profitability from community activity is challenging for resource persons.	The GEF initiatives is designed to demonstrate SFM/ SLM practices that can generate private profitability.	Insufficient designed-in and implement demonstrations of SFM/ SLM practices generating private profitability.
11. SLM and LD	Farmers/ Landowners strength of interest in private profitability from GEF initiative.	Skill in demonstrating private profitability while using community activities is challenging.	The GEF initiative can, with support, demonstrate how SLM/ LD practices can enhancing farmers and landowners' profitability.	Insufficient demonstrations of private profitability.
12.SLM in the marine	Marine services providers and local area person's strength of interest in using the marine as ecoassets.	The MPA and TPA is by nature space restrictive to traditional resource users.	Opportunity to further demonstrate how access to and use controls can yield benefit.	Contest in the use of PAs are not sufficiently managed.
13. Coupling of Vested Interests: Sustainable Agricultural Production . (Terrestrial)	Strong felt need by farmers for generating agricultural value-added in both production and marketing	Demonstrations of INRM to small-scale farmers are challenging.	GEF initiative is designed to show BMP for agriculture value-added.	Insufficient demonstrations of private profit from community activities.
14. Coupling Vested Interests: Sustainably Rangeland Management (Terrestrial)	Strong interest by animal farmers in testing community initiatives that control grazing that is unsustainable.	Farmers as individuals accustomed to free grazing and seeing low individual profitability from individual restraints.	The GEF initiative is designed to help farmers to make and enforce by rule- making ,community-based restraints not possible as individuals.	Low prospects of private profitability with low uptake by individuals and community.
15. Coupling Vested Interest: SFM/REDD⁺ in agro-forestry. (Terrestrial)	Strong interest by farmers and landowners for improving the value-added from improving the integrity of lands by Agro-forestry.	Farmers profit from Agri-forest is a long-term investment while the profit for landowners is even lower.	The GEF initiative can demonstrate low long-term investments can yield twin benefits of INRM and profitable livelihoods.	Low prospects of private profitability; low individual and community uptake of INRM principles and practices.
16. Enterprise Development and Management at 3 MPA Communities.	MPAs/ TPAs resource use having prospects for entrepreneurial livelihoods.	The scope for enhancement and development of livelihoods from the resource base depends on many external factors.	The GEF initiative can help local area livelihoods persons to cooperate for INRM.	Individualism in context with collectivism inn local area persons is mismanaged.

Annex 6: Risk Matix

RISK LEVEL FOR ASPECTS OF PROJECT INVESTMENT	STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
17. Enterprise Development and Management at 3 TPA Communities.	Already existing vested interests involved in livelihoods from the resource base around PAs.	Scope for utilization of the resource base for livelihoods depends on many external factors.	The GEF initiative can help local area livelihoods persons to cooperate for INRM.	Individualism in contest with collectivism in local area persons is mismanaged.

Annex 7: Terms of Reference for Key Project Staff

The following are the indicative terms of references (TOR) for the project implementation staff. The project implementation unit (PIU) will be staffed by a full-time project coordinator and project administrator/financial officer supported by a secretary all of whom will be nationally recruited positions. The TOR of the personnel in the PIU will be framed so as to be compatible with UNDPSCO and standard procedures and practices. Furthermore during the inception exercises (IWD) for the implementation of the FSP the TORs for the specific consultants and subcontractors will be fully discussed, and for those consultancies to be undertaken during the first six months of the project, full TORs will be drafted and selection and hiring procedures will be defined.

Project Coordination (PC)

The UNDP county office (for Barbados and Eastern Caribbean) will hire the PC to carry out the duties detailed below and to provide further technical assistance as required by the project team to fulfill the objectives of the project. The PC will be responsible for ensuring that the project meets its obligations to the GEF and UNDP with particular regard to management aspects for the project, including the supervision of staff, strong as stakeholder liaison, for implementation of activities and for reporting. The PC will support and coordinate the activities of all partners, staff and consultants and they relate to the implementation of the project. The PC will report to the UNDP project officer and will be responsible for the following tasks.

Tasks:

- Prepare detailed work plan and budget under the guidance of the SC and UNDP;
- Make recommendations for modifications to the project budget and, where relevant, submit proposals for budget revisions to the SC, and UNDP;
- Facilitate project planning and decision-making sessions;
- Organize the contracting of consultants and experts for the project, including preparing ToRs for all technical assistance required, preparation of an action plan for each consultant and expert, supervising their work, and reporting to the UNDP Project Officer;
- Provide technical guidance and oversight for all project activities;
- Oversee the progress of the project components conducted by local and international experts, consultants, and cooperating partners;
- Coordinate and oversee the preparation of all outputs of the project;
- Foster, establish, and maintain links with other related national and international programs and national projects, including information dissemination through media such as web page actualization etc.
- Organize SC meetings at least once every semester as well as annual and final review meetings as required by UNDP, and act as the secretary of the SC;
- Coordinate and report the work of all stakeholders under the guidance of the UNDP;
- Prepare PIRs/APRs in the language required by the GEF and the UNDP's CO and attend annual review meetings;
- Ensure that all relevant information is made available in a timely fashion to UNDP regarding activities carried out nationally, including private and public sector available, which impact the project;

- Prepare and submit quarterly progress and financial reports to UNDP as required, following all UNDP quality management system and internal administrative process;
- Coordinate and participate in M&E exercises to appraise project success and make recommendations for modification to the project.
- Prepare and submit technical concepts and requirements about the project requested by UNDP, the GoG, or other external entities;
- Perform other duties related to the projects in order to achieve its strategic objectives;
- Ensure the project utilized best practices and experiences from similar projects;
- Previous experience working with a GEF-supported project is considered an asset.

Project Administration/Finance Assistant

The Project Administrator/Finance Assistant is responsible for the financial and administrative management of the project activities and assists in the in the preparation of quarterly and annual work plans and progress reports of review and monitoring by UNDP. The Project Administrator/Finance Assistant will have the following responsibilities:

- Responsible for providing general financial and administrative support to the project;
- Take own initiative and perform daily work in compliance with annual work schedules;
- Assist project management in performing budget cycle: planning, preparation, revisions, and budget execution;
- Provide assistance to partner agencies involved in project activities, performing and monitoring financial aspects to ensure compliance with budgeted costs in line with UNDP policies and procedures;
- Monitor project expenditures, ensuring that no expenditure is incurred before it has been authorized;
- Assist project team in drafting quarterly and yearly project reports concerning financial issues;
- Ensure the UNDP procurement rules are followed during procurement activities that are carried out by the project and maintain responsibility for the inventory of the project assets;
- Perform preparatory work for mandatory and general budget revisions, annual physical inventory and auditing, and assist external evaluators in fulfilling their mission;
- Prepare all outputs in accordance with the UNDP administrative and financial office guidance;
- Ensure the project utilizes the available financial resources in an efficient and transparent manner;
- Ensure that all project financial activities are carried out on schedule and within budget to achieve the project outputs;
- Perform all other financial related duties, upon request.

Qualifications and skills

- At least an Associate's Degree or equivalent work experience and competency in finance, business sciences, or related fields;
- Experience in administrative work, preferably in an international organization or related to project implementation;
- A demonstrated ability in the financial management of development projects and in liaising and cooperating with government officials, NFOs, etc.;
- Self-motivated and ability to work under the pressure;
- Team-oriented, possesses a positive attitude, and works well with others;
- Flexible and willing to travel as required;

- Excellent interpersonal skills;
- Excellent verbal and writing communication skills in Spanish and English;
- Good knowledge of Word, Outlook, Excel, and internet browsers is required;
- Previous experience working with a GEF-supported project is considered an asset.

Secretary

This position provides support to the PC for the day-to-day management of the project and secretarial or assistance functions. The Project Secretary will have the following responsibilities:

- Assist the PC in all project implementation activities;
- Make logistical arrangements for the organization of meetings, consultation processes, and media;
- Ensure the project utilizes the available final resources in an efficient and transparent manner;
- Ensure that all project activities are carried out on schedule and within budget to achieve the project outputs;
- Solve all scientific and administrative issues that might arise during the project;
- Development of SFM/SLM plans for two (2) watershed and provide technical support of r SFM/SLM plan implementation.

Outputs:

- Detailed work plans indicating dates for deliverables and budget;
- Documents required by the control management system of UNDP;
- ToRs and action plan of the staff and monitoring reports;
- List of names of potential advisors and collaborators and potential institutional links with other related national and international programs and national projects;
- Quarterly reports and financial reports on the consultant's activities, all stakeholders' work, and progress of the project to be presented to UNDP (in the format specified by UNDP);
- A final report that summarizes the work carried out by consultants and stakeholders during the period of the project, as well as the status of the project outputs at the end of the project;
- Minutes of meetings and/or consultation process;
- Yearly PIRs/APRs;
- Adaptive management of project
- SFM/SLM plans for (1) watershed: Beausejour watershed
- Development plans for up to 15 municipalities in the southeastern region incorporating SFM/REDD+ and SLM principles and their implementing measures
- Field visits to PAs to provide technical support for the piloting of the gate and concession fees system and monitoring reports.

All documents are to be submitted to the UNDP Project Officer and MS Word and in hard copy.

Qualifications (indicative):

- A graduate academic degree in areas relevant to the project (e.g. SFM, SLM, CC mitigation, and BD conservation);
- Minimum 5 years of experience in project management with at least 3 years of experience in at least two areas relevant to the project (e.g. SFM, SLM, CC mitigation, and BD conservation);
- Experience facilitating consultative processes, preferably in the field of natural resource management;

- Proven ability to promote cooperation between and negotiate with a range of stakeholders, and to organize and coordinate multi-disciplinary teams;
- Strong leadership and team-building skills;
- Self-motivated and ability to work under the pressure;
- Demonstrable ability to organize, facilitate, and mediate technical teams to achieve stated project objectives;
- Familiarity with logical frameworks and strategic planning;
- Strong computer skills;
- Flexible and willing to travel as requires;
- Excellent communication and writing skills in English
- Provide secretarial support
- Draft agreements for entities related to the project, in accordance with instructions by the Contracts Office at UNDP;
- Draft correspondence related to assigned project areas; provide clarification, follow up, and responses to requests for information;
- Assume overall responsibility for administrative matters of a more general nature, such as registry and maintenance of project files;
- Provide support to the PC and project staff in the coordination and organization of planes activities and their timely implementation;
- Assist the PC in liaising with key stakeholders from the GoG counterpart, co-financing agencies, civil society, and NGOs, as required;
- Ensure the proper use and care of the instruments and equipment used on the project;
- Ensure the project utilizes the available administrative resources in an efficient and transparent manner;
- Ensure that all project administrative activities are carried out on schedule and within budget to achieve the project outputs;
- Resolve all administrative and support issues that might arise during the project;
- Provide assistance in all logistical arrangements concerning project implementation;
- Perform all other administrative duties, upon request.

Qualifications and Skill:

- Demonstrated experience in administrative work, preferably in an international organization or related to project implementation;
- Self-motivated and ability to work under the pressure;
- Team-oriented, possesses a positive attitude, and works well with other;
- Flexible and willing to travel as required;
- Excellent interpersonal skills;
- Excellent verbal and writing communication skills in Spanish and English;
- Good knowledge of Word, Outlook, Excel, and Internet Browsers is required;
- Previous experience working with a GEF-supported project is considered as asset.

Information Technology Technician (ITT)

The information technology technician provides support to the PC for generating and maintaining the database on various key aspects regarding tracking performance of the project. The ITT will have the following responsibilities:

- Maintain a database on all key activities of the project.
- Support the PC for all data and records requirements.

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Annex 9: Co-financing Commitment Letters

Ref. No.
In replying the above
Number and date of this
letter should be quoted.



MINISTRY OF TOURISM,
CIVIL AVIATION AND CULTURE
MINISTERIAL COMPLEX
BOTANICAL GARDENS
ST. GEORGE'S
GRENADA, W.I.

February 12, 2014

Adriana Dinu
UNDP/GEF Officer-in-Charge and Deputy Executive Coordinator
United Nations Development Programme
304 East 45th Street, 9th Floor
New York, NY 10017
UNITED STATES OF AMERICA

Dear Ms. Dinu,

RE: Expression of Commitment to Co-finance GEF/UNDP Project 5069 Implementing a "Ridge to Reef" Approach to Protecting Biodiversity and Ecosystem Functions Within and Around Protected Areas in Grenada

This letter serves to express the commitment of the Ministry of Tourism, Civil Aviation and Culture to co-finance activities of the project in Grenada titled, *Implementing a "Ridge to Reef" Approach to Protecting Biodiversity and Ecosystem Functions Within and Around Protected Areas in Grenada*.

Our Ministry is extremely pleased with this intervention due to its direct contribution to enhancing the enabling environment for protected areas management at the national level. The overarching strategic focus on expansion of the protected area system, and improvement of the infrastructure at selected sites is vitally importance in strengthening the tourism product. Equally significant is the intervention's thrust to support the sustainable financing of protected areas, which is extremely critical within the context of current economic challenges.


The Ministry of Tourism, Civil Aviation and Culture therefore unreservedly supports this initiative through provision of technical, organizational and financial assistance to the following project components:

- Formal establishment of the National Parks Advisory Council;
- Finalization of the legal and regulatory framework for protected area management;
- Expansion of the Protected Area System;
- Conservation and sustainable use of natural resources at the community level.

We therefore allocate a total of US\$ 2,166,667 in-kind services to project implementation.

We anticipate a successful project that will improve national capacities for wise management of our national parks and protected areas, while stimulating the income generating potential of our communities.

Yours Sincerely,


.....
Sibyl Alexander (Ms.)
PERMANENT SECRETARY

Fax: (473) 440-0443 • Tel.: (473) 440-0366-8 • E-mail: tourism@gov.gd / mot@spiceisle.com

Annex 9: Co-financing Letters

Ref. No.
In replying the above
Number and date of this
letter should be quoted.



MINISTRY OF AGRICULTURE,
LANDS, FORESTRY, FISHERIES
AND THE ENVIRONMENT
MINISTERIAL COMPLEX
BOTANICAL GARDENS
ST. GEORGE'S
GRENADA, W.I.

January 31, 2014

Ms. Adriana Dinu
UNDP/GEF Officer-in-Charge
And Deputy executive Coordinator
United Nations Development Programme
304 East 45th Street, 9th Floor
New York, NY 10017
USA

Dear Ms. Dinu,

Re: Expression of Commitment to Co-finance GEF/UNDP Project 5069 Implementing a “Ridge to Reef” Approach to Protecting Biodiversity and Ecosystem Functions Within and Around Protected Areas in Grenada

This letter serves to express the commitment of the Ministry of Agriculture, Lands, Forestry, Fisheries and the Environment to co-finance activities of the project in Grenada titled, Implementing a “Ridge to Reef” Approach to Protecting Biodiversity and Ecosystem Functions Within and Around Protected Areas in Grenada.

The Ministry is extremely pleased with this intervention due to its direct contribution to the expansion and improved management of protected areas at the national level. Specifically, the project is expected to contribute significantly to attainment of the conservation targets of the Grenada Declaration, and the action programmes of key multilateral environmental agreements to which our country is signatory.

In addition, the project’s focus on sustainable forests and land management is of paramount importance cognizant of the detrimental impacts from Hurricanes Ivan and Emily, and the invaluable services provided by these resources in supporting socioeconomic growth and development, and human health and wellbeing. Equally commendable is the intervention’s thrust on sustainable livelihood creation, especially within the context of current economic challenges experienced at the global and national levels.

My Ministry endorses this initiative which is consistent with our strategic focus for enhanced ecosystem management, diversification of the agriculture sub-sectors and livelihood creation. The Ministry with responsibility for Agriculture therefore fully supports implementation of the project through provision of technical, organizational and financial assistance valued at US\$ 13,010,155.

Phone: (473) 440-2708/3386/3078

Facsimile: agriculture@gov.gd.

Fax: (473) 440-4191

Annex 9: Co-financing Letters

The co-financing resources are allocated as follows:

- Environment Division US\$ 6,130,525 will be provided through synergistic activities under the Integrated Climate Change Adaptation Strategies (ICCAS) project funded by the BMU and Government of Grenada. Specifically US\$ 3,259,167 through UNDP component and US\$ 2,871,358 from the GIZ component.
- Forestry and National Parks Division, US\$ 2,250,000.
- Fisheries Division, US\$ 4,629,630.

Co-financing resources will be provided in-kind with an assigned annual budgetary allocation from each of the above technical Divisions.

We anticipate a successful project that will enhance national capacities for wise management of environmental resources, while strengthening communities' income generating potential.

Yours respectfully,



MARILYN AUSTIN-CADORE (Mrs.)

PERMANENT SECRETARY

***with responsibility for* FORESTRY AND FISHERIES**

N.B. The US\$6,100,000 from GIZ/ ICAAS is a bilateral project between the Government of Grenada and the Government of Germany and provides no further signed letter of commitment at this time since this assistance is based on a bi-lateral agreement already signed.



United Nations Development Programme *Empowered lives.
Resilient nations.*

29 May 2014

Dear Ms. Dinu,

Re: Expression of Commitment to Co-finance GEF/UNDP Project 5069 Implementing a “Ridge to Reef” Approach to Protecting Biodiversity and Ecosystem Functions Within and Around Protected Areas in Grenada

This letter serves to express the commitment of UNDP Barbados and the OECS to co-finance activities of the project in Grenada entitled, implementing a “Ridge to Reef” Approach to Protecting Biodiversity and Ecosystem Functions Within and Around Protected Areas in Grenada

UNDP Barbados and the OECS therefore fully supports implementation of the project through provision of technical, organizational and financial assistance valued at US\$250,000.

The co-financing resources are allocated as follows:

- US\$ 100,000 Sustainable Land Management, EU
- US\$ 50,000 Multidimensional Poverty Measures / Social Protection
- US\$ 100,000 through UNDP component for Programme on Integrated Climate Change Adaptation Strategies in Grenada (ICCAS)

Ms. Adriana Dinu
UNDP/GEF Executive Coordinator and Director a.i.
United Nations Development Programme
304 East 45th Street, 9th Floor
New York, NY 10017
USA

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Resilient nations.*

- 2 -

The co-financing resources derived from the aforementioned projects which are under execution during this project's implementation period. We anticipate the success of this project in synergy with our broader portfolio in Grenada that will enhance national capacities for wise management of environmental resources, while strengthening communities' income generating potential.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Stephen O'Malley', is written over the typed name and title.

Stephen O'Malley
Resident Representative

Annex 10: Capacity Development Scorecard

Annex 10: Capacity Development Scorecard

Project/Programme Name: Implementing a “Ridge to Reef” approach to protecting biodiversity and ecosystem functions within and around protected areas in Grenada.

Project/Programme Cycle Phase: 2014-2019

Date: January 29th, 2014

Capacity Result / Indicator	Staged Indicators	Rating	Score	Comments	Next Steps	Contribution to which Outcome
CR 1: Capacities for Engagement						
Indicator 1: Degree of legitimacy/ mandate of lead environmental organizations	Organizational responsibilities for environmental management are not clearly defined	0	3 (2.5)			Outcome 1: Protected Areas estate is expanded from 8 to 9 terrestrial PAs covering 2,931 Ha (increase of 1,000 Ha from baseline of 1,931) and from 3 to 7 marine PAs covering 13,180 Ha (increase of 11,400 Ha from baseline of 1,780 Ha).
	Organizational responsibilities for environmental management are identified	1				
	Authority and legitimacy of all lead organizations responsible for environmental management are partially recognized by stakeholders	2				
	Authority and legitimacy of all lead organizations responsible for environmental management recognized by stakeholders	3		The organizational responsibilities for SLM are generally well defined at the national level. Some clarity in the perceived role and responsibility of the Planning Development Authority is needed however.	Review and solidify the role of the PDA within the context of the Physical Development and Control Act 2002 and parent legislation, emerging SLM needs and the recommendation of the LMMS.	
Indicator 2: Existence of operational co-management mechanisms	No co-management mechanisms are in place	0	2			Outcome 1: Protected Areas estate is expanded from 8 to 9 terrestrial PAs covering 2,931 Ha (increase of 1,000 Ha from baseline of 1,931) and from 3 to 7 marine PAs covering 13,180 Ha (increase of 11,400 Ha from baseline of 1,780 Ha).
	Some co-management mechanisms are in place and operational	1				
	Some co-management mechanisms are formally established through agreements, MOUs, etc.	2		Co-management represents a key component of the governance framework for	Develop and implement co-management mechanisms for SFM, SLM and TPA	

Annex 10: Capacity Development Scorecard

Capacity Result / Indicator	Staged Indicators	Rating	Score	Comments	Next Steps	Contribution to which Outcome
				marine protected areas. Although co-management is identified as the governance model for SLM, SFM and terrestrial PA management, no formal mechanism are instituted.	management. Implement the institutional framework for protected areas as stipulated in the National Parks and Protected Areas Act and the Grenada Systems Plan for Protected Areas to allow for effective authority and legitimacy for TPA management.	
	Comprehensive co-management mechanisms are formally established and are operational/functional	3				
Indicator 3: Existence of cooperation with stakeholder groups	Identification of stakeholders and their participation/involvement in decision-making is poor	0	3	Very good involvement of stakeholders in policy and programme implementation. Insufficient engagement of communities in programme implementation.	Working in collaboration with civil society organization, strengthen capacities within the public sector for community participation and engagement in sustainable land, forest and protected area management.	Outcome 1: Protected Areas estate is expanded from 8 to 9 terrestrial PAs covering 2,931 Ha (increase of 1,000 Ha from baseline of 1,931) and from 3 to 7 marine PAs covering 13,180 Ha (increase of 11,400 Ha from baseline of 1,780 Ha).
	Stakeholders are identified but their participation in decision-making is limited	1				
	Stakeholders are identified and regular consultations mechanisms are established	2				
	Stakeholders are identified and they actively contribute to established participative decision-making processes	3				
Total score for CR1			8			

Annex 10: Capacity Development Scorecard

Capacity Result / Indicator	Staged Indicators	Rating	Score	Comments	Next Steps	Contribution to which Outcome
CR 2: Capacities to Generate, Access and Use Information and Knowledge						
Indicator 4: Degree of environmental awareness of stakeholders	Stakeholders are not aware about global environmental issues and their relevant possible solutions	0	3			Outcome 1: Protected Areas estate is expanded from 8 to 9 terrestrial PAs covering 2,931 Ha (increase of 1,000 Ha from baseline of 1,931) and from 3 to 7 marine PAs covering 13,180 Ha (increase of 11,400 Ha from baseline of 1,780 Ha).
	Stakeholders are aware about global environmental issues, but not about the possible solutions	1				
	Stakeholders are aware about global environmental issues and the possible solutions, but do not know how to participate	2				
	Stakeholders are aware about global environmental issues, and are actively participating in the implementation of related solutions	3		There is need for a more synergistic approach between the key agencies with respect to implementation of these solutions.	Implement the recommendations of the Land and Marine Strategy for enhancing inter-agency collaboration for environmental management.	
Indicator 5: Access and sharing of environmental information by stakeholders	The environmental information needs are not identified, and the information management infrastructure is inadequate	0	2			Outcome 1: Protected Areas estate is expanded from 8 to 9 terrestrial PAs covering 2,931 Ha (increase of 1,000 Ha from baseline of 1,931) and from 3 to 7 marine PAs covering 13,180 Ha (increase of 11,400 Ha from baseline of 1,780 Ha). Outcome 2: Climate resilient SLM technologies implemented by local communities in the 1,547 hectares of the Beausejour Watershed lead to improved habitat integrity in the Annadale Forest Reserve within the watershed and the surrounding landscape, as well as the two MPAs directly downstream.
	The environmental information needs are identified but the information management infrastructure is inadequate	1				
	The environmental information is partially available and shared among stakeholders, but is not covering all aspects and/or the information management infrastructure is limited	2		The Grenada Land Information System (GLIS) is the principal repository of land information at the national level. Inadequate application of datasets to inform land management planning. There are some mechanisms in	Develop and implement a protocol that facilitates the documentation of all land management related research in the GLIS. Augment capacity of land management officials to analyze data sets in the GLIS to generate information consistent with the	

Annex 10: Capacity Development Scorecard

Capacity Result / Indicator	Staged Indicators	Rating	Score	Comments	Next Steps	Contribution to which Outcome
				place for information sharing. For instance rainfall and stream flow data collected and analyzed by the Land Use Division in collaboration with the National Water and Sewerage Authority is stored in the Grenada Land Information System (GLIS) and sent to more than 20 agencies each month. Albeit this, information contain the GLIS although extensive is not adequately shared or utilized by stakeholders. Added to this there are a lot of gaps in existing environmental information particularly on status of environmental indicators and impact of interventions on ecosystem integrity.	<p>priorities of the aligned NAP, the National Forest Policy, NPDP and the LMMS.</p> <p>Develop a GIS forest data base in collaboration with the Land Use Division.</p>	
	Comprehensive environmental information is available and shared through an adequate information management infrastructure	3				
Indicator 6: Existence of environmental education programmes	No environmental education programmes are in place	0	1			Outcome 1: Protected Areas estate is expanded from 8 to 9 terrestrial PAs covering 2,931 Ha (increase of 1,000 Ha from baseline of 1,931)
	Environmental education programmes are partially developed and partially delivered	1		Environmental education is normally project led,	Develop and implement a long term public awareness and	

Annex 10: Capacity Development Scorecard

Capacity Result / Indicator	Staged Indicators	Rating	Score	Comments	Next Steps	Contribution to which Outcome
				and culminates generally on completion of the intervention. Some adhoc programming is led by individual agencies, but there is no comprehensive programme in place.	education campaign on land degradation and SLM building on the lessons learnt in the SLM Project. Develop and implement public awareness and education strategies on SFM and protected area management.	and from 3 to 7 marine PAs covering 13,180 Ha (increase of 11,400 Ha from baseline of 1,780 Ha). Outcome 2: Climate resilient SLM technologies implemented by local communities in the 1,547 hectares of the Beausejour Watershed lead to improved habitat integrity in the Annadale Forest Reserve within the watershed and the surrounding landscape, as well as the two MPAs directly downstream.
	Environmental education programmes are fully developed but partially delivered	2				
	Comprehensive environmental education programmes exist and are being delivered	3				
Indicator 7: Extent of the linkage between environmental research/science and policy development	No linkage exist between environmental policy development and science/research strategies and programmes	0				Outcome 1: Protected Areas estate is expanded from 8 to 9 terrestrial PAs covering 2,931 Ha (increase of 1,000 Ha from baseline of 1,931) and from 3 to 7 marine PAs covering 13,180 Ha (increase of 11,400 Ha from baseline of 1,780 Ha). Outcome 2: Climate resilient SLM technologies implemented by local communities in the 1,547 hectares of the Beausejour Watershed lead to improved habitat integrity in the Annadale Forest Reserve within the watershed and the surrounding landscape, as well as the two MPAs directly downstream.
	Research needs for environmental policy development are identified but are not translated into relevant research strategies and programmes	1	1	Research does not represent a major focus of environmental programming or policy development. Some limited research is undertaken however.	Articulate and implement a research and development strategy for SLM, SFM and protected area management. Strengthen linkages between research and policy development.	
	Relevant research strategies and programmes for environmental policy development exist but the research information is not responding fully to the policy research needs	2				
	Relevant research results are available for environmental policy development	3				
Indicator 8: Extent of	Traditional knowledge is ignored and not taken into account into	0	2			Outcome 1: Protected Areas estate is expanded from 8 to

Annex 10: Capacity Development Scorecard

Capacity Result / Indicator	Staged Indicators	Rating	Score	Comments	Next Steps	Contribution to which Outcome
inclusion/use of traditional knowledge in environmental decision-making	relevant participative decision-making processes					<p>9 terrestrial PAs covering 2,931 Ha (increase of 1,000 Ha from baseline of 1,931) and from 3 to 7 marine PAs covering 13,180 Ha (increase of 11,400 Ha from baseline of 1,780 Ha).</p> <p>Outcome 2: Climate resilient SLM technologies implemented by local communities in the 1,547 hectares of the Beausejour Watershed lead to improved habitat integrity in the Annadale Forest Reserve within the watershed and the surrounding landscape, as well as the two MPAs directly downstream.</p>
	Traditional knowledge is identified and recognized as important, but is not collected and used in relevant participative decision-making processes	1		Some collection of traditional knowledge (TK) is undertaken informally by technicians and environmental professionals, and formally through interventions funded by grant projects. A mechanism for systematic documentation and utilization of the TK in decision making is not instituted.	Develop and implement a protocol to guide the collection, analysis and application of traditional knowledge in SLM, SFM and protected area management.	
	Traditional knowledge is collected but is not used systematically into relevant participative decision-making processes	2				
	Traditional knowledge is collected, used and shared for effective participative decision-making processes	3				
Total score for CR2			9			
CR 3: Capacities for Strategy, Policy and Legislation Development						
Indicator 9: Extent of the environmental planning and strategy development process	The environmental planning and strategy development process is not coordinated, and does not produce adequate environmental plans and strategies	0	2			<p>Outcome 1: Protected Areas estate is expanded from 8 to 9 terrestrial PAs covering 2,931 Ha (increase of 1,000 Ha from baseline of 1,931) and from 3 to 7 marine PAs covering 13,180 Ha (increase of 11,400 Ha from baseline of 1,780 Ha).</p> <p>Outcome 2: Climate resilient</p>
	The environmental planning and strategy development process does produce adequate environmental plans and strategies but they are not implemented or used	1		Generally, there is a diversity of excellent strategic plans developed to guide environmental management.	Elaboration and implementation of a capacity development plan to address current deficiencies.	

Annex 10: Capacity Development Scorecard

Capacity Result / Indicator	Staged Indicators	Rating	Score	Comments	Next Steps	Contribution to which Outcome
				However implementation is severely limited due to a number of factors including inadequate leadership, human and financial capital and political will.		SLM technologies implemented by local communities in the 1,547 hectares of the Beausejour Watershed lead to improved habitat integrity in the Annadale Forest Reserve within the watershed and the surrounding landscape, as well as the two MPAs directly downstream.
	Adequate environmental plans and strategies are produced but there are only partially implemented because of funding constraints and/or other problems	2				
	The environmental planning and strategy development process is well coordinated by the lead environmental organizations and produces the required environmental plans and strategies; which are being implemented	3				
Indicator 10: Existence of an adequate environmental policy and regulatory frameworks	The environmental policy and regulatory frameworks are insufficient; they do not provide an enabling environment	0	1			Outcome 1: Protected Areas estate is expanded from 8 to 9 terrestrial PAs covering 2,931 Ha (increase of 1,000 Ha from baseline of 1,931) and from 3 to 7 marine PAs covering 13,180 Ha (increase of 11,400 Ha from baseline of 1,780 Ha). Outcome 2: Climate resilient SLM technologies implemented by local communities in the 1,547 hectares of the Beausejour Watershed lead to improved habitat integrity in the Annadale Forest Reserve within the watershed and the surrounding landscape, as well as the two MPAs
	Some relevant environmental policies and laws exist, but few are implemented and enforced	1		A plethora of laws and policies are instituted to govern environmental management. Albeit this, implementation and enforcement remain fundamental gaps as discussed above. Added to this, outdated laws, low public knowledge of the various legislation, and inadequate regulatory framework	Document the necessary and important data sets and information needed to inform development of a LUP. Document and disseminate the lessons learnt from developing the Carriacou LUP. Develop and implement a LUP for the State of Grenada.	

Annex 10: Capacity Development Scorecard

Capacity Result / Indicator	Staged Indicators	Rating	Score	Comments	Next Steps	Contribution to which Outcome
				constrained enforcement.	<p>Using participatory approaches, review the NPDP to include emerging physical development and SLM issues of relevance. Pursue the formal approval of the NPDP by Cabinet and mainstream in national development planning.</p> <p>Articulate development orders for LAPs for Sauteurs, the Greater Grenville Area and other planned areas.</p> <p>Review and update the Forest Policy to include obligations as set out in the UNCCD, UNFCCC, CITES and Ramsar Convention.</p> <p>Finalize and endorse an interagency collaboration mechanism for SLM.</p> <p>Implement the Systems Plan for Protected Areas (2009) and site specific management plans for protected areas.</p> <p>Align the NAP to the UNCCD 10-year Strategic Plan.</p>	directly downstream.

Annex 10: Capacity Development Scorecard

Capacity Result / Indicator	Staged Indicators	Rating	Score	Comments	Next Steps	Contribution to which Outcome
	Adequate environmental policy and legislation frameworks exist, but there are problems in implementing and enforcing them	2			Finalize and gazette the revised PPDC Act and related regulations.	
	Adequate policy and legislation frameworks are implemented and provide an adequate enabling environment; a compliance and enforcement mechanism is established and functions	3			<p>Complete the development and finalization of the Environmental Management Act with required SROs.</p> <p>Finalize the draft Protected Area, Forest and Wildlife legislation and SROs for enforcement.</p> <p>Complete the review of the MPA Regulations and commence enforcement. Train resource managers, rangers and select community stakeholders in enforcement of SFM, SLM and protected area legislation.</p> <p>Sensitive the general public of the SFM, SLM and protected area legislative and enforcement framework</p>	
Indicator 11: Adequacy of the environmental information available for decision-making	The availability of environmental information for decision-making is lacking	0	1			Outcome 1: Protected Areas estate is expanded from 8 to 9 terrestrial PAs covering 2,931 Ha (increase of 1,000 Ha from baseline of 1,931) and from 3 to 7 marine PAs
	Some environmental information exists, but it is not sufficient to support environmental decision-	1				

Annex 10: Capacity Development Scorecard

Capacity Result / Indicator	Staged Indicators	Rating	Score	Comments	Next Steps	Contribution to which Outcome
	making processes					<p>covering 13,180 Ha (increase of 11,400 Ha from baseline of 1,780 Ha).</p> <p>Outcome 2: Climate resilient SLM technologies implemented by local communities in the 1,547 hectares of the Beausejour Watershed lead to improved habitat integrity in the Annadale Forest Reserve within the watershed and the surrounding landscape, as well as the two MPAs directly downstream.</p>
	Relevant environmental information is made available to relevant decision-makers, but the process to update this information is not functioning properly	2		Refer to CR2 – Indicator 5	Refer to CR2 – Indicator 5	
	Political and administrative decision-makers obtain and use updated environmental information to make environmental decisions	3				
Total score for CR3			4			
CR 4: Capacities for Management and Implementation						
Indicator 12: Existence and mobilization of resources	The environmental organizations don't have adequate resources for their programmes and projects, and the requirements have not been assessed	0	2			<p>Outcome 1: Protected Areas estate is expanded from 8 to 9 terrestrial PAs covering 2,931 Ha (increase of 1,000 Ha from baseline of 1,931) and from 3 to 7 marine PAs covering 13,180 Ha (increase of 11,400 Ha from baseline of 1,780 Ha).</p> <p>Outcome 2: Climate resilient SLM technologies implemented by local communities in the 1,547 hectares of the Beausejour Watershed lead to improved habitat integrity in the Annadale Forest Reserve within the watershed and the surrounding landscape, as well as the two MPAs directly downstream.</p>
	The resource requirements are known but are not being addressed	1				
	The funding sources for these resource requirements are partially identified, and the resource requirements are partially addressed	2		Inadequate financial resources to support environmental programming represent a cross cutting issue affecting implementation rate. Although some resources are mobilized, lack of integrated financing strategies for environmental management limits	<p>Complete the IFS for implementation of the aligned NAP.</p> <p>Implement all outstanding Key Actions for Financial Arrangement prescribed under Section 5 of Grenada's Systems Plan for Protected Area (Part 2).</p>	

Annex 10: Capacity Development Scorecard

Capacity Result / Indicator	Staged Indicators	Rating	Score	Comments	Next Steps	Contribution to which Outcome
				capacity for resource mobilization.		
	Adequate resources are mobilized and available for the functioning of the lead environmental organizations	3				
Indicator 13: Availability of required technical skills and technology transfer	The necessary required skills and technology are not available and the needs are not identified	0	2			
	The required skills and technologies needs are identified as well as their sources	1				
	The required skills and technologies are obtained but their access depend on foreign sources	2		Although there is a national mechanism for enhancing skills and technologies, unsupportive national budget and a cease in government hiring seriously affects capacity building. To a large extent, upgrading technologies and short term expertise will depend on foreign sources.	Develop a capacity development strategy to augment technical skills within the resident organizations in harmony with the priorities for capacity development as outlined in the aligned NAP. Upgrade technical capacity of junior forestry officials through the Government Scholarship Programme and other similar regional training initiatives.	
	The required skills and technologies are available and there is a national-based mechanism for updating the required skills and for upgrading the technologies	3			Recruit additional professional staff to meet the needs of the revised National Forest Policy through a phased approach. Conduct short term capacity building training sessions to	

Annex 10: Capacity Development Scorecard

Capacity Result / Indicator	Staged Indicators	Rating	Score	Comments	Next Steps	Contribution to which Outcome
					<p>address the needs identified in Box 2.6 above.</p> <p>Upgrade the hardware and software within the Forestry Department to allow for effective delivery of administrative and field based functions.</p>	
Total score for CR4			4			
CR 5: Capacities to Monitor and Evaluate						
Indicator 14: Adequacy of the project/programme monitoring process	Irregular project monitoring is being done without an adequate monitoring framework detailing what and how to monitor the particular project or programme	0	0	Some monitoring occurs. For instance, officials from the Physical Planning Unit monitors land development activities to determine compliance. Similarly, rangers from the Forestry Division, and officials from the Land Use and Extension Division are actively involved in monitoring programmes and projects. Albeit this, these efforts are not adequately resource, and therefore not optimally effective.	<p>Develop and implement a strategic framework for monitoring and evaluation of key forest and protected area ecological, social and economic parameters.</p> <p>Finalize development of the Land Degradation Monitoring Network (LADMoN) to track the status and extent of land degradation within the state of Grenada.</p>	
	An adequate resourced monitoring	1				

Annex 10: Capacity Development Scorecard

Capacity Result / Indicator	Staged Indicators	Rating	Score	Comments	Next Steps	Contribution to which Outcome
	framework is in place but monitoring is irregularly conducted					
	Regular participative monitoring of results is being conducted, but this information is only partially used by the project/programme implementation team	2				
	Monitoring information is produced timely and accurately and is used by the implementation team to learn and possibly to change the course of action	3				
Indicator 15 – Adequacy of the project/programme evaluation process	None or ineffective evaluations are being conducted, with no adequate evaluation plan or the necessary resources	0	1	Evaluation constitutes a major limiting factor in environmental programme. It is normally viewed as an “add-on” in government funded programmes. It must be noted however, that externally funded project have built-in evaluations at the mid and final term stages of projects, the outputs of which would be with the lead implementing agency.		
	An adequate evaluation plan is in place, but evaluation activities are irregularly conducted	1				
	Evaluations are being conducted as per an adequate evaluation plan, but the evaluation results are only partially used by the project or programme implementation team	2				

Annex 10: Capacity Development Scorecard

Capacity Result / Indicator	Staged Indicators	Rating	Score	Comments	Next Steps	Contribution to which Outcome
	Effective evaluations are conducted timely and accurately and are used by the implementation team and the Agencies and GEF Staff to correct the course of action, if needed, and to learn for further activities.	3				
Total score for CR5			1			
Combined total score for CR1-CR5			26			
Combined total % for CR1-CR5			58%			

Annex 12: Tracking Tools Summary (full TT provided separately)

*Full Tracking Tool is annexed as an excel file.

Section One: Project General Information

1. Project Name: “Implementing a “Ridge to Reef” approach to protecting biodiversity and ecosystem functions within and around protected areas in Grenada”
2. Project Type (MSP or FSP): FSP
3. Project ID (GEF): 5069
4. Project ID (IA): 5087
5. Implementing Agency: UNDP
6. Country(ies): Grenada

Name of reviewers completing tracking tool and completion dates:

	Name	Title	Agency
Work Program Inclusion	Aden Forteau, Chief Forestry Officer & Anthony Jeremiah, Wildlife Officer - Forestry Department; Roland Baldeo, MPA Coordinator-Fisheries Division; Consultants, Dianne Roberts & Serge Aucoin	Environmental and Development Specialist	RECS - Roberts Environmental Consulting Solutions
Project Mid-term			
Final Evaluation/project completion			

7. Project duration: **Planned** 5 years **Actual** _____ years
8. Lead Project Executing Agency: Ministry of Agriculture, Lands, Forestry and Fisheries and the Environment
9. GEF Strategic Program: Improve Sustainability of Protected Area Systems
10. Project coverage in hectares:

Total Extent in hectares of protected areas targeted by the project by biome type (biogeographic province)	Foreseen at project start	Achievement at Mid-term Evaluation	Achievement at Final Evaluation
Tropical and subtropical moist broadleaf forests (tropical and subtropical, humid)	2664		
Tropical and subtropical dry broadleaf forests (tropical and subtropical, semi-humid)	96		
Mangroves	229		

Annex 12: Tracking Tools Summary

Large lakes	23		
Coral reefs	12277		
Total	15,266		

Section Two: World Bank/WWF Site-Level Management Effectiveness Tracking Tool for Protected Areas: Summary of METT scores per protected area¹⁰

Protected Areas	METT	% of 96
TPAs		
Perseverance	48	50
Beausejour (Proposed New)	31	32
Mt. Hartman	56	58
Levara Pond	59	61
Grand Etang and Annandale (reported as 1)	69	72
Mt. St. Catherine	46	48
Morne Gazo	48	50
MPAs		
Sandy Isle & Oyster	51	53
Molineare/Beausejour	51	53
Woburn Clarks	52	54
Grand Anse (Proposed New)	32	33
Southeast Coast (Proposed New)	33	34
Levera (Proposed New)	33	34
White Island (Proposed New)	32	33
Average of Existing PAs	53	56
Average of Proposed New PAs	32	34

Section Three: Financial Scorecard for the entire PA system, both Terrestrial and Marine PAs:

Total Score for PA System	70
Total Possible Score	220
Actual score as a percentage of the total possible score	31.80%

N.B. The low scores not only reflect the lack of capacity to manage PAs but also to properly measure and record data for the Tracking Tool itself, e.g. management effectiveness, # ha.

¹⁰ Based on

http://www.gefweb.org/uploadedFiles/Focal_Areas/Biodiversity/Biodiversity_GEF_SO_1_Tracking_Tool%20GEF-4.doc for criteria for assignation of scores

Annex 13. LETTER OF AGREEMENT

STANDARD LETTER OF AGREEMENT BETWEEN UNDP AND THE GOVERNMENT OF GRENADA FOR THE PROVISION OF SUPPORT SERVICES

1. Reference is made to consultations between officials of the Government of *Grenada* (hereinafter referred to as “the Government”) and officials of UNDP with respect to the provision of support services by the UNDP country office for nationally managed programmes and projects. UNDP and the Government hereby agree that the UNDP country office may provide such support services at the request of the Government through its institution designated in the relevant programme support document or project document, as described below.
2. The UNDP country office may provide support services for assistance with reporting requirements and direct payment. In providing such support services, the UNDP country office shall ensure that the capacity of the Government-designated institution is strengthened to enable it to carry out such activities directly. The costs incurred by the UNDP country office in providing such support services shall be recovered from the administrative budget of the office.
3. The UNDP country office may provide, at the request of the designated institution, the following support services for the activities of the programme/project:
 - (a) Identification and/or recruitment of project and programme personnel;
 - (b) Identification and facilitation of training activities;
 - (c) Procurement of goods and services;
4. The procurement of goods and services and the recruitment of project and programme personnel by the UNDP country office shall be in accordance with the UNDP regulations, rules, policies and procedures. Support services described in paragraph 3 above shall be detailed in an annex to the programme support document or project document, in the form provided in the Attachment hereto. If the requirements for support services by the country office change during the life of a programme or project, the annex to the programme support document or project document is revised with the mutual agreement of the UNDP resident representative and the designated institution.
5. The relevant provisions of the Standard Basic Assistance Agreement (the “SBAA”) between the Government of Grenada and UNDP signed by the parties on 30 January 1985, including the provisions on liability and privileges and immunities, shall apply to the provision of such support services. The Government shall retain overall responsibility for the nationally managed programme or project through its designated institution. The responsibility of the UNDP country office for the provision of the support

Annex 13: Letter of Agreement

services described herein shall be limited to the provision of such support services detailed in the annex to the programme support document or project document.

6. Any claim or dispute arising under or in connection with the provision of support services by the UNDP country office in accordance with this letter shall be handled pursuant to the relevant provisions of the SBAA.

7. The manner and method of cost-recovery by the UNDP country office in providing the support services described in paragraph 3 above shall be specified in the annex to the programme support document or project document.

8. The UNDP country office shall submit progress reports on the support services provided and shall report on the costs reimbursed in providing such services, as may be required.

9. Any modification of the present arrangements shall be effected by mutual written agreement of the parties hereto.

10. If you are in agreement with the provisions set forth above, please sign and return to this office two signed copies of this letter. Upon your signature, this letter shall constitute an agreement between your Government and UNDP on the terms and conditions for the provision of support services by the UNDP country office for nationally managed programmes and projects.

Yours sincerely,

Signed on behalf of UNDP
Mr. Stephen O'Malley
Resident Representative

For the Government of Grenada
Mr. Timothy Antoine
Permanent Secretary,
Ministry of Economic Development, Trade, Planning & Cooperatives.

[Date]
Attachment

DESCRIPTION OF UNDP COUNTRY OFFICE SUPPORT SERVICES

1. Reference is made to consultations between the Ministry of Sustainable Development, the institution designated by the Government of St. Kitts and Nevis and representatives of UNDP with respect to the provision of support services by the UNDP country office for the nationally managed project 00090420 **Conserving Biodiversity and reducing habitat degradation in Protected Areas and their Buffer Zones** (award 80909) “the Project”.
2. In accordance with the provisions of the letter of agreement signed on *Date of signature (LOA)* and the project document, the UNDP country office shall provide support services for the Project as described below.
3. Support services to be provided:

Support services* (insert description)	Schedule for the provision of the support services	Cost to UNDP of providing such support services (where appropriate)	Amount and method of reimbursement of UNDP (where appropriate)
1. Payments, disbursements and other financial transactions	During project implementation	Universal Price List	Support Services
2. Recruitment of staff, project personnel, and consultants	During project implementation	Universal Price List	Support Services
3. Procurement of services and equipment, and disposal/sale of equipment	During project implementation	Universal Price List	Support Services
4. Organization of training activities, conferences, and workshops, including fellowships	During project implementation	Universal Price List	Support Services
5. Travel authorizations, visa requests, ticketing, and travel arrangements	During project implementation	Universal Price List	Support Services
6. Shipment, custom clearance, vehicle registration, and accreditation	During project implementation	Universal Price List	Support Services

* UNDP direct project support services will be defined yearly, and for those executed during the period, direct project costs will be charged at the end of each year based on the UNDP Universal Pricelist (UPL) or the actual corresponding service cost.

4. Description of functions and responsibilities of the parties involved:

Annex 13: Letter of Agreement

As described in the Project Document (Management Arrangements), the project will be executed under national implementation modality (NIM), with execution by The Ministry of Sustainable Development following UNDP's Programme and Operations Policies and Procedures, per its role as implementing agency. Execution of the project will be subject to oversight by a Project Steering Committee (described in the Project Document). Day to day coordination will be carried out under the supervision of a Project Coordination Unit and corresponding staff.

As described in the Project Document, the functions of the Participants are the following:

The Ministry of Sustainable Development (MoSD) is the official project Executing Agency, responsible for the fulfilment of the project's results. In addition, the Government of the St. Kitts and Nevis has designated the MoSD as the official counterpart of UNDP in the country. Its main responsibilities related to the project are to:

- Lead the project implementation with the support of the Project Coordination Unit (PCU);
- Participate together with UNDP, in selecting the Project Coordinator;
- Designate a representative to act as a permanent liaison between UNDP, the Ministry of Foreign Affairs and the Project Coordinator, and to participate in the Project Steering Committee meetings, and others as required, to ensure that the necessary inputs are available to execute the project;
- Prove the technical and administrative capacity to develop the project;
- Monitor the project's work plan and progress;
- Provide the name and describe the functions of the person or persons authorized to deal with UNDP concerning the project's matters;
- Approve ToR for technical personnel and consultancies for project implementation;
- Participate in the selection process of the consultants and approve all hiring and payment request;
- Provide the name and describe the functions of the person or persons authorized to sign the project's budget and/or substantive revisions of the project.
- Coordinating the activities of all other project partners, and providing overall technical oversight of programs and outputs of project contractors and short-term consultants (with the support of the PCU).
- If necessary, to make a written request to UNDP for reports on the project;
- To approve the annual audit plan for the project and, in accordance with UNDP standards and procedures, to convene an information and consultation meeting prior to the audit;
- As required, to participate in tripartite meeting or in any follow-up or reorientation sessions.

The United Nations Development Programme (UNDP) is the world development network established by the United Nations with a mandate to promote development in countries and to connect them to the knowledge, experience and resources needed to help people achieve a better life. Its main responsibilities related to the project are to:

Annex 13: Letter of Agreement

- Designate a programme officer responsible for providing substantive and operational advice and to follow up and support the project's development activities;
- Advise the project on management decision making, as well as to guarantee quality assurance;
- Be part of the project's Steering Committee and other Committees or Groups considered part of the project structure;
- Administer the financial resources agreed in the budget / workplan and approved by the project's Steering Committee; monitor financial expenditures against project budgets / workplans; and oversee the provision of financial audits of the project;
- Oversee the recruitment and hiring of project staff, the selection and hiring of project contractors and consultants; and the appointment of independent financial auditors and evaluators;
- Co-organize and participate in the events carried out in the framework of the Project;
- Use national and international contact networks to assist the project's activities and establish synergies between projects in common areas and/or in other areas that would be of assistance when discussing and analysing the project;
- Provide Support in the development and instrumentation of the project's gender strategy.
- Ensure that all project activities, including procurement and financial services, are carried out in strict compliance with the procedures of the UNDP / GEF.

UNDP Environmental and Social Screening Template (December 2012)

QUESTION 1:

Has a combined environmental and social assessment/review that covers the proposed project already been completed by implementing partners or donor(s)?

Select answer below and follow instructions:

☒ → NO: Continue to Question 2 (do not fill out Table 1.1)

☐ → YES: No further environmental and social review is required if the existing documentation meets UNDP's quality assurance standards, and environmental and social management recommendations are integrated into the project. Therefore, you should undertake the following steps to complete the screening process:

1. Use Table 1.1 below to assess existing documentation. (It is recommended that this assessment be undertaken jointly by the Project Developer and other relevant Focal Points in the office or Bureau).
2. Ensure that the Project Document incorporates the recommendations made in the implementing partner's environmental and social review.
3. Summarize the relevant information contained in the implementing partner's environmental and social review in Annex A.2 of this Screening Template, selecting Category 1.
4. Submit Annex A to the PAC, along with other relevant documentation.

Note: Further guidance on the use of national systems for environmental and social assessment can be found in the UNDP ESSP Annex B.

TABLE 1.1: CHECKLIST FOR APPRAISING QUALITY ASSURANCE OF EXISTING ENVIRONMENTAL AND SOCIAL ASSESSMENT	Yes/No
1. Does the assessment/review meet its terms of reference, both procedurally and substantively?	N/A
2. Does the assessment/review provide a satisfactory assessment of the proposed project?	N/A
3. Does the assessment/review contain the information required for decision-making?	N/A
4. Does the assessment/review describe specific environmental and social management measures (e.g. mitigation, monitoring, advocacy, and capacity development measures)?	N/A
5. Does the assessment/review identify capacity needs of the institutions responsible for implementing environmental and social management issues?	N/A
6. Was the assessment/review developed through a consultative process with strong stakeholder engagement, including the view of men and women?	N/A
7. Does the assessment/review assess the adequacy of the cost of and financing arrangements for environmental and social management issues?	N/A

Table 1.1 (continued) For any “no” answers, describe below how the issue has been or will be resolved (e.g. amendments made or supplemental review conducted).

QUESTION 2:

Do all outputs and activities described in the Project Document fall within the following categories?

- ☐ Procurement (in which case UNDP's [Procurement Ethics](#) and [Environmental Procurement Guide](#) need to be complied with)
- ☐ Report preparation
 - ☐ Training
 - ☐ Event/workshop/meeting/conference (refer to [Green Meeting Guide](#))
 - ☐ Communication and dissemination of results

Select answer below and follow instructions:

- ☒ **NO** → Continue to Question 3
- ☐ **YES** → No further environmental and social review required. Complete Annex A.2, selecting Category 1, and submit the completed template (Annex A) to the PAC.

QUESTION 3:

Does the proposed project include activities and outputs that support *upstream* planning processes that potentially pose environmental and social impacts or are vulnerable to environmental and social change (refer to Table 3.1 for examples)? (Note that *upstream* planning processes can occur at global, regional, national, local and sectoral levels)

Select the appropriate answer and follow instructions:

☐ **NO** → Continue to Question 4.

☐ **YES** → Conduct the following steps to complete the screening process:

1. Adjust the project design as needed to incorporate UNDP support to the country(ies), to ensure that environmental and social issues are appropriately considered during the upstream planning process. Refer to Section 7 of this Guidance for elaboration of environmental and social mainstreaming services, tools, guidance and approaches that may be used.
2. Summarize environmental and social mainstreaming support in Annex A.2, Section C of the Screening Template and select "Category 2".
3. If the proposed project ONLY includes upstream planning processes then screening is complete, and you should submit the completed Environmental and Social Screening Template (Annex A) to the PAC. If downstream implementation activities are also included in the project then continue to Question 4.

TABLE 3.1	EXAMPLES OF UPSTREAM PLANNING PROCESSES WITH POTENTIAL DOWNSTREAM ENVIRONMENTAL AND SOCIAL IMPACTS	Check appropriate box(es) below
1.	Support for the elaboration or revision of global-level strategies, policies, plans, and programmes. <i>For example, capacity development and support related to international negotiations and agreements. Other examples might include a global water governance project or a global MDG project.</i>	N/A
2.	Support for the elaboration or revision of regional-level strategies, policies and plans, and programmes. <i>For example, capacity development and support related to transboundary programmes and planning (river basin management, migration, international waters, energy development and access, climate change adaptation etc.).</i>	N/A
3.	Support for the elaboration or revision of national-level strategies, policies, plans and programmes. <i>For example, capacity development and support related to national development policies, plans, strategies and budgets, MDG-based plans and strategies (e.g. PRS/PRSPs, NAMAs), sector plans.</i>	X
4.	Support for the elaboration or revision of sub-national/local-level strategies, policies, plans and programmes. <i>For example, capacity development and support for district and local level development plans and regulatory frameworks, urban plans, land use development plans, sector plans, provincial development plans, provision of services, investment funds, technical guidelines and methods, stakeholder engagement.</i>	X

QUESTION 4:

Does the proposed project include the implementation of *downstream* activities that potentially pose environmental and social impacts or are vulnerable to environmental and social change?

To answer this question, you should first complete Table 4.1 by selecting appropriate answers. If you answer “No” or “Not Applicable” to all questions in Table 4.1 then the answer to Question 4 is “NO.” If you answer “Yes” to any questions in Table 4.1 (even one “Yes” can indicate a significant issue that needs to be addressed through further review and management) then the answer to Question 4 is “YES”:

☐ **NO** → No further environmental and social review and management required for downstream activities. Complete Annex A.2 by selecting “Category 1”, and submit the Environmental and Social Screening Template to the PAC.

☐ **YES** → Conduct the following steps to complete the screening process:

1. Consult Section 8 of this Guidance, to determine the extent of further environmental and social review and management that might be required for the project.
2. Revise the Project Document to incorporate environmental and social management measures. Where further environmental and social review and management activity cannot be undertaken prior to the PAC, a plan for undertaking such review and management activity within an acceptable period of time, post-PAC approval (e.g. as the first phase of the project) should be outlined in Annex A.2.
3. Select “Category 3” in Annex A.2, and submit the completed Environmental and Social Screening Template (Annex A) and relevant documentation to the PAC.

TABLE 4.1: ADDITIONAL SCREENING QUESTIONS TO DETERMINE THE NEED AND POSSIBLE EXTENT OF FURTHER ENVIRONMENTAL AND SOCIAL REVIEW AND MANAGEMENT

1. Biodiversity and Natural Resources	Answer (Yes/No/Not Applicable)
1.1 Would the proposed project result in the conversion or degradation of modified habitat , natural habitat or critical habitat ?	NO
1.2 Are any development activities proposed within a legally protected area (e.g. natural reserve, national park) for the protection or conservation of biodiversity?	NO
1.3 Would the proposed project pose a risk of introducing invasive alien species?	NO
1.4 Does the project involve natural forest harvesting or plantation development without an independent forest certification system for sustainable forest management (e.g. <i>PEFC</i> , <i>the Forest Stewardship Council certification systems</i> , or <i>processes established or accepted by the relevant National Environmental Authority</i>)?	NO
1.5 Does the project involve the production and harvesting of fish populations or other aquatic species without an accepted system of independent certification to ensure sustainability (e.g. <i>the Marine Stewardship Council certification system</i> , or <i>certifications, standards, or processes established or accepted by the relevant National Environmental Authority</i>)?	NO
1.6 Does the project involve significant extraction, diversion or containment of surface or ground water? <i>For example, construction of dams, reservoirs, river basin developments, groundwater</i>	NO

TABLE 4.1: ADDITIONAL SCREENING QUESTIONS TO DETERMINE THE NEED AND POSSIBLE EXTENT OF FURTHER ENVIRONMENTAL AND SOCIAL REVIEW AND MANAGEMENT	
<i>extraction.</i>	
1.7 Does the project pose a risk of degrading soils?	NO
2. Pollution	Answer (Yes/No/ Not Applicable)
2.1 Would the proposed project result in the release of pollutants to the environment due to routine or non-routine circumstances with the potential for adverse local, regional, and transboundary impacts?	NO
2.2 Would the proposed project result in the generation of waste that cannot be recovered, reused, or disposed of in an environmentally and socially sound manner?	NO
2.3 Will the proposed project involve the manufacture, trade, release, and/or use of chemicals and hazardous materials subject to international action bans or phase-outs? <i>For example, DDT, PCBs and other chemicals listed in international conventions such as the Stockholm Convention on Persistent Organic Pollutants, or the Montreal Protocol.</i>	NO
2.4 Is there a potential for the release, in the environment, of hazardous materials resulting from their production, transportation, handling, storage and use for project activities?	NO
2.5 Will the proposed project involve the application of pesticides that have a known negative effect on the environment or human health?	NO
3. Climate Change	
3.1 Will the proposed project result in significant ¹ greenhouse gas emissions? <i>Annex E provides additional guidance for answering this question.</i>	NO
3.2 Is the proposed project likely to directly or indirectly increase environmental and social vulnerability to climate change now or in the future (also known as maladaptive practices)? You can refer to the additional guidance in Annex C to help you answer this question. <i>For example, a project that would involve indirectly removing mangroves from coastal zones or encouraging land use plans that would suggest building houses on floodplains could increase the surrounding population's vulnerability to climate change, specifically flooding.</i>	NO
4. Social Equity and Equality	Answer (Yes/No/ Not Applicable)
4.1 Would the proposed project have environmental and social impacts that could affect indigenous people or other vulnerable groups?	NO
4.2 Is the project likely to significantly impact gender equality and women's empowerment ² ?	YES
4.3 Is the proposed project likely to directly or indirectly increase social inequalities now or in	NO

¹ Significant corresponds to CO₂ emissions greater than 100,000 tons per year (from both direct and indirect sources). Annex E provides additional guidance on calculating potential amounts of CO₂ emissions.

² Women are often more vulnerable than men to environmental degradation and resource scarcity. They typically have weaker and insecure rights to the resources they manage (especially land), and spend longer hours on collection of water, firewood, etc. (OECD, 2006). Women are also more often excluded from other social, economic, and political development processes.

TABLE 4.1: ADDITIONAL SCREENING QUESTIONS TO DETERMINE THE NEED AND POSSIBLE EXTENT OF FURTHER ENVIRONMENTAL AND SOCIAL REVIEW AND MANAGEMENT	
the future?	
4.4 Will the proposed project have variable impacts on women and men, different ethnic groups, social classes?	YES
4.5 Have there been challenges in engaging women and other certain key groups of stakeholders in the project design process?	NO
4.6 Will the project have specific human rights implications for vulnerable groups?	NO
5. Demographics	
5.1 Is the project likely to result in a substantial influx of people into the affected community(ies)?	NO
5.2 Would the proposed project result in substantial voluntary or involuntary resettlement of populations? <i>For example, projects with environmental and social benefits (e.g. protected areas, climate change adaptation) that impact human settlements, and certain disadvantaged groups within these settlements in particular.</i>	NO
5.3 Would the proposed project lead to significant population density increase which could affect the environmental and social sustainability of the project? <i>For example, a project aiming at financing tourism infrastructure in a specific area (e.g. coastal zone, mountain) could lead to significant population density increase which could have serious environmental and social impacts (e.g. destruction of the area's ecology, noise pollution, waste management problems, greater work burden on women).</i>	NO
1. Culture	
6.1 Is the project likely to significantly affect the cultural traditions of affected communities, including gender-based roles?	NO
6.2 Will the proposed project result in physical interventions (during construction or implementation) that would affect areas that have known physical or cultural significance to indigenous groups and other communities with settled recognized cultural claims?	NO
6.3 Would the proposed project produce a physical "splintering" of a community? <i>For example, through the construction of a road, powerline, or dam that divides a community.</i>	NO
2. Health and Safety	
7.1 Would the proposed project be susceptible to or lead to increased vulnerability to earthquakes, subsidence, landslides, erosion, flooding or extreme climatic conditions? <i>For example, development projects located within a floodplain or landslide prone area.</i>	NO
7.2 Will the project result in increased health risks as a result of a change in living and working conditions? In particular, will it have the potential to lead to an increase in HIV/AIDS infection?	NO
7.3 Will the proposed project require additional health services including testing?	NO
3. Socio-Economics	
8.1 Is the proposed project likely to have impacts that could affect women's and men's ability to use, develop and protect natural resources and other natural capital assets? <i>For example, activities that could lead to natural resources degradation or depletion in communities who depend on these resources for their development, livelihoods, and well-being?</i>	YES

TABLE 4.1: ADDITIONAL SCREENING QUESTIONS TO DETERMINE THE NEED AND POSSIBLE EXTENT OF FURTHER ENVIRONMENTAL AND SOCIAL REVIEW AND MANAGEMENT		
8.2	Is the proposed project likely to significantly affect land tenure arrangements and/or traditional cultural ownership patterns?	NO
8.3	Is the proposed project likely to negatively affect the income levels or employment opportunities of vulnerable groups?	NO
9.	Cumulative and/or Secondary Impacts	Answer (Yes/No/ Not Applicable)
9.1	Is the proposed project location subject to currently approved land use plans (e.g. roads, settlements) which could affect the environmental and social sustainability of the project? <i>For example, future plans for urban growth, industrial development, transportation infrastructure, etc.</i>	YES
9.2	Would the proposed project result in secondary or consequential development which could lead to environmental and social effects, or would it have potential to generate cumulative impacts with other known existing or planned activities in the area? <i>For example, a new road through forested land will generate direct environmental and social impacts through the cutting of forest and earthworks associated with construction and potential relocation of inhabitants. These are direct impacts. In addition, however, the new road would likely also bring new commercial and domestic development (houses, shops, businesses). In turn, these will generate indirect impacts. (Sometimes these are termed “secondary” or “consequential” impacts). Or if there are similar developments planned in the same forested area then cumulative impacts need to be considered.</i>	NO

ANNEX A.2: ENVIRONMENTAL AND SOCIAL SCREENING SUMMARY

(to be filled in after Annex A.1 has been completed)

Name of Proposed Project: PIMS 5087 implementing the Ridge to Reef approach to protecting biodiversity and Ecosystem functions within and around protected areas in Grenada.

A. Environmental and Social Screening Outcome

Select from the following:

☐ **Category 1.** No further action is needed

☐ **Category 2.** Further review and management is needed. There are possible environmental and social benefits, impacts, and/or risks associated with the project (or specific project component), but these are predominantly indirect or very long-term and so extremely difficult or impossible to directly identify and assess.

☒ **Category 3.** Further review and management is needed, and it is possible to identify these with a reasonable degree of certainty. If Category 3, select one or more of the following sub-categories:

☒ **Category 3a:** Impacts and risks are limited in scale and can be identified with a reasonable degree of certainty and can often be handled through application of standard best practice, but require some minimal or targeted further review and assessment to identify and evaluate whether there is a need for a full environmental and social assessment (in which case the project would move to Category 3b).

☐ **Category 3b:** Impacts and risks may well be significant, and so full environmental and social assessment is required. In these cases, a scoping exercise will need to be conducted to identify the level and approach of assessment that is most appropriate.

B. Environmental and Social Issues(for projects requiring further environmental and social review and management)

In this section, you should list the key potential environmental and social issues raised by this project. This might include both environmental and social opportunities that could be seized on to strengthen the project, as well as risks that need to be managed. You should use the answers you provided in Table 4.1 as the basis for this summary, as well as any further review and management that is conducted.

DESCRIPTION:

This project will ensure that biodiversity and ecosystems functions within and around marine and territorial protected areas in Grenada are protected from threats through the adoption of an integrated "Ridge to Reef" approach that increases PA management effectiveness and applies targeted sustainable land management practices. This will be achieved through a two-pronged approach: Establishment and effective management of new and existing protected areas; and a pilot project initiative that applies climate resilient SLM practices within the Beasejour watershed to reduce threats adjacent to and upstream of PAs.

SOCIAL EQUITY AND EQUALITY

4.2. Is the project likely to significantly impact gender equality and womens empowerment?

The Project offers several opportunities to empower women. Women are expected to play a significant role in conservation management and resilience activities in local area communities. The project has included specific indicators and opportunities to promote women's participation in an intersectoral committee/ advisory council, farm capacity enhancing initiatives, and various value-added activities that process local BD-based products. Within Outcome 2's work in the Beausejour watershed, 28 farmers committed to full participation in various farm initiatives, of which 14 are men and 14 are women. The participation of women in the intersectoral process and in the farm enhancement and INRM practices will be included in the M&E reports as well as in the MTR and TE.

4.4. Will the proposed project have variable impacts on women and men, different ethnic groups and social classes?

Communities adjacent to the project intervention sites will be affected variably, depending on the nature of the project's interventions in each site. The project will be working at 14 sites where TPAs/ MPAs will be developed or enhanced with the participation of adjacent communities. These will be complemented by multifocal interventions at 6 local area communities within the Beausejour pilot project area. Some of the communities adjacent to the TPAs are semi-urban while others are rural. Meanwhile, the MPAs are adjacent to more urban areas. As such, the immediate impact on these communities will vary, depending on the intensity of their involvement with the project and/or the BD and ecosystem services. The introduction of SFM and SLM practices is expected to have positive impacts on the adjacent communities, not only in terms of increased ecosystem stability, but also in social and economic terms as well.

SOCIO- ECONOMICS

8.1. Is the proposed project likely to have impacts that would affect women's and men's ability to use, develop and protect natural resources and other natural capital assets? Yes.

The project is designed to have positive impacts on women's and men's ability to use, develop and protect natural resources and other capital assets through direct and indirect capacity building. Participation of national/ islandwide stakeholders in the National Parks Advisory Council and National MPA committee, together with the participation of local area persons in the Beausejour intersectoral committee, will be a key determinant of the effectiveness of the proposed PA's management strategies. This includes strengthening the governance framework through community participation (national/ local) in PA management as set out in both Outputs 2.1 and 2.2. The project is designed to support the development of capacities among local area stakeholders for monitoring and regulating natural resource use; 6 local area communities in the Beausejour pilot project area are earmarked for specific interventions, while a number of local communities will be involved in resource-use activities in the MPAs. The impacts of all activities will be documented and included in the annual M&E reports as well as the project's MTR and TE.

CUMULATIVE AND/ OR SECONDARY IMPACTS:

9.1. Is the proposed project location subject to approved land use plans (eg. roads, settlement) which could affect the environmental and social sustainability of the project.

Recently, a new / upgraded road was built for the lower half of the Beausejour watershed; this road joins with the existing main road passing through the upper half of the Beausejour Watershed. This development in the lower half of the watershed is expected to facilitate several options for developments in the whole watershed (farm enhancement, urban infrastructure, etc). Since this road development creates a major thoroughfare and adds value to the lands in the watershed, it also creates options for alternative land uses. The development is seen as creating both opportunities and potential threats to be considered during the project. The opportunities include options for alternative land use for farming as well as the opportunity for greater emphasis on planning for alternative uses that are both agricultural and non- agricultural. This is especially true for the lower half of the watershed. Thus the watershed management plan to be developed by the project (output 2.1) will have to be developed on the expectation that the Beausejour watershed will become a significant multi use area in future years.

C. Next Steps(for projects requiring further environmental and social review and management):

In this section, you should summarize actions that will be taken to deal with the above-listed issues. If your project has Category 2 or 3 components, then appropriate next steps will likely involve further environmental and social review and management, and the outcomes of this work should also be summarized here. Relevant guidance should be obtained from Section 7 for Category 2, and Section 8 for Category 3.

SOCIAL ECONOMIC:

This project is designed to provide significant socio- economic benefits to communities adjacent to and within PAs. The corresponding communities will be consulted and engaged throughout the implementation period to ensure that socio-economic variables are integrated in the site-specific interventions. The interventions within the six Beausejour pilot demonstration sites have specific activities that are of socioeconomic value for the local area communities as well as lessons learned for replication in other similar watersheds. As a step to ensure this, social indicators have been included in the project's design and will be evaluated annually as per UNDP/GEF requirements, as well the project's MTR and TE.

The project will seek to engage, train and create employment opportunities for the residents of communities in areas adjacent to or dependent on protected areas. The project will work with community groups to identify persons who can be contracted and trained to assist with monitoring, patrolling and basic research functions for PAs (primarily farmers familiar with the TPA sites and fishermen familiar with the MPA sites). The project will coordinate its community outreach and participation activities with other ongoing projects that are implementing community development and alternative livelihoods activities for selected communities. Community involvement at PA sites is critical; many community stakeholders depend heavily on NTFP and marine resources for commercial purposes and in some cases cultural practices. These issues must be carefully understood and stakeholders with differing views should be integrated into the PA management decision-making, particularly through community-wide processes that allow views to be shared and to evolve and ultimately strengthen the concept of and support for the PA network.

ENVIRONMENT:

The project will catalyse the enhancement and resilience of approximately 16,111ha of forested and marine areas, as well as private lands within the PA system. The collaboration with farmers and landowners for agro-forest/ forest regeneration/ reforestation is expected to achieve at least four purposes: (i) Demonstrate livelihood interests coupling with reforestation, (ii) Reforestation by rehabilitation of coverage and BD habitat enhancement, (iii) reduction in exposure of steep slopes to accelerated LD and soil erosion; (iv) Reduction in the loading of silt into main watercourses that outfall onto seascapes. Such initiatives will provide for both global and national benefits in terrestrial and marine ecosystems. Furthermore, the protection of MPAs will result in global benefits for regionally shared stocks in demersal habitats and coastal ecosystems.

The project's LPAC meeting will provide an opportunity to review activities to be implemented at the project intervention sites (PAs and Beausejour watershed), assess potential social and environmental risks, and identify corresponding management measures for these risks.

D. Sign Off

Project Manager

Date

PAC

Date

Programme Manager

Date

D. Sign Off

Project Manager

Date

PAC

Date

Programme Manager

A handwritten signature in black ink, appearing to be 'J. H. L. S.', written over a horizontal line.

Date June 06, 2014