GEF-6 PROJECT IDENTIFICATION FORM (PIF)

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

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PART I: Project Information

Project Title:	Improving Environmental Management through Sustainable Land Management in St. Kitts and Nevis		
Country(ies):	St Kitts and Nevis	GEF Project ID:[1]	9785
GEF Agency(ies):	UNEP	GEF Agency Project ID:	01570
Other Executing Partner(s):	Ministry of Sustainable Development	Resubmission Date:	July 13, 2017
GEF Focal Area(s):	Multi-focal Areas	Project Duration (Months)	60
Integrated Approach Pilot	IAP-Cities ☐ IAP-Commodities ☐ IAP-Food Security ☐	Corporate Program: SGP ☐	
Name of parent program:	N/A	Agency Fee ($)	286,518

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

Objectives/Programs (Focal Areas, Integrated Approach Pilot, Corporate Programs)	**Trust Fund**	**(in $)**	
		GEF Project Financing	**Co-financing**
BD-1 Program 1	GEFTF	512,717	3,512,330
CCM-2 Program 4	GEFTF	350,000	1,474,742
LD-1 Program 2	GEFTF	1,603,265	7,652,627
LD-2 Program 3	GEFTF	550,000	1,860,301
Total Project Cost		**3,015,982**	**14,500,000**

B. INDICATIVE PROJECT DESCRIPTION SUMMARY

Project Objective: To transform degraded forest landscapes into biodiversity and climate-friendly areas of sustainable agricultural/agroforestry production

Project Components	**Financing Type[3]**	**Project Outcomes**	**Project Outputs**	**Trust Fund**	**(in $)**	
					GEF Project Financing	**Co-financing**
1: Integrated and strengthened environmental planning and management on the islands of St. Kitts and Nevis to support island sustainability	TA	1.1: Reduced pressure on natural resources from competing land uses on the islands of St. Kitts and Nevis • Negative impacts on 26,900 ha reduced through an integrated natural resource management (INRM) framework 1.2: Improved systemic capacity for promoting sustainable development in the islands of St. Kitts and Nevis through INRM • 20% increase in a Capacity Development Scorecard *[to be developed during PPG]*	1.1.1 Updated/ revised National Physical Development Plan (NPDP) 1.1.2 Revised legal and regulatory framework to support NPDP implementation 1.1.3 Baseline digital land use maps of areas of high priority environmental concern 1.2.1 Relevant Institutions, CSO and Communities capacitated for coordinated and effective action on SLM, BD conservation and climate smart agriculture (# of target stakeholders to be defined during PPG) 1.2.2 national capacities improved through post-graduate technical training for at least 6 students engaged with the local authorities.	GEFTF	835,000	3,000,000

[1] Project ID number will be assigned by GEFSEC and to be entered by Agency in subsequent document submissions.
[2] When completing Table A, refer to the excerpts on *GEF 6 Results Frameworks for GETF, LDCF and SCCF*.
[3] Financing type can be either investment or technical assistance.

		1.3: Conservation and sustainable management of selected priority species improved in 2 Key Biodiversity Area (KBA) sites: Cayon Key and Ponds of the Southeast peninsula. • Reduced pressure on three indicator species at two Key Biodiversity Area (KBA) sites: -Leatherback turtle (*Dermochys coriacea)* -Brown Pelican (*Pelicanus occidentalis)* and Least Tern (*Sternula antillarum)*	1.3.1 BD management strategy based on biodiversity baseline assessments for 2 KBA.			
2: Mainstreaming BD conservation, SLM and CCM into key development and resource management sectors	TA/ INV	2.1: Conservation of BD habitat and ecosystem services, and increased carbon sequestration in soil and woody vegetation, achieved through restoration and management of critical forest sites. 2.2: Tested SLM practices supported by productive assets have reduced LD, increased soil carbon sequestration, and enabled sustainable agricultural production on degraded / abandoned lands. *[Targets for each will be established during the PPG phase]* 2.3: Improved infrastructure conditions support SLM measures. *[Targets for each will be established during the PPG phase]*	2.1.1 Decreased soil erosion, increased carbon sequestration and agroforestry production through reforestation and Assisted Natural Regeneration (ANR) (350ha*) 2.1.2 Increased ecosystem integrity through 20ha* of mangrove ecosystems rehabilitated and Protected (cayon to key) 2.2.1 • Decreased soil erosion, increased carbon sequestration and agricultural crop production obtained through restored areas of degraded land (300 ha*) 2.2.2 ponds/dams in place to support sustainable and climate-friendly agricultural production for at least 100 participating farmers. 2.3.1 Improved water infrastructure (supply and quality) for agricultural production	GEFTF	1,674,800	10,500,000
3: Knowledge management and dissemination for SLM, BD and CC	TA	3.1: Increased national capacity to plan for and manage environmental issues through knowledge exchanges 3.2: Increased understanding and awareness of relevant environmental issues among the general public, land use managers, the tourism industry and international visitors to SKN	3.1.1: A plan for knowledge management and information exchange on environmental issues is developed and under implementation 3.2.1: Increased awareness and understanding of issues related to SLM, BD Conservation and CSA	GEFTF	362,500	700,000
			Sub-Total		2,872,300	14,200,000

Project Management Cost (PMC)[4]	GEFTF	143,682	300,000
Total Project Cost		3,015,982	14,500,000

For multi-trust fund projects, provide the total amount of PMC in Table B, and indicate the split of PMC among the different trust funds here: (NA)

(*) target number of hectars will be further assessed/confirmed during project preparation phase.

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

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Amount ($)
Private Sector	Sugar Industry Diversification Foundation	Grant	4,500,000
Bilateral Agency	EU- St. Kitts and Nevis 11th EDF National Indicative Programme and Water Conservation and Drought Management Project	Grant	5,000,000
Recipient Government	Government - Agriculture Diversification Project and Agriculture Resource Management Project (ARMP)	Grant	4,500,000
Recipient Government	Government of St-Kitts and Nevis – Ministry of Sustainable Development	In-kind	500,000
Total Co-financing			14,500,000

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

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	(in $)		
					GEF Project Financing (a)	Agency Fee (b)[b)]	Total (c)=a+b
UNEP	GEFTF	St. Kitts and Nevis	Biodiversity		512,717	48,708	561,425
UNEP	GEFTF	St. Kitts and Nevis	Land Degradation		2,153,265	204,560	2,357,825
UNEP	GEFTF	St. Kitts and Nevis	Climate Change		350,000	33,250	383,250
Total GEF Resources					**3,015,982**	**286,518**	**3,302,500**

a) Refer to the Fee Policy for GEF Partner Agencies

b) This PIF makes use of St. Kitts and Nevis Flexible allocation system.

E. PROJECT PREPARATION GRANT (PPG)[5]

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

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

Project Preparation Grant amount requested: $99,999				**PPG Agency Fee:** $9,500			
GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	(in $)		
					PPG (a)	Agency Fee[6] (b)	Total (c)=a+b
UNEP	GEFTF	St. Kitts and Nevis	Biodiversity		16,999	1,615	18,614
UNEP	GEFTF	St. Kitts and Nevis	Land Degradation		71,395	6,783	78,178
UNEP	GEFTF	St. Kitts and Nevis	Climate Change		11,605	1,102	12,707
Total PPG Amount					99,999	9,500	109,499

F. PROJECT'S TARGET CONTRIBUTIONS TO GLOBAL ENVIRONMENTAL BENEFITS[7]

Provide the expected project targets as appropriate.

Corporate Results	Replenishment Targets	Project Targets
1. Maintain globally significant biodiversity and the ecosystem goods and services that it provides to society	Improved management of landscapes and seascapes covering 300 million hectares	*20 Hectares*
2. Sustainable land management in production systems	120 million hectares under sustainable land	*650 Hectares*

[4] For GEF Project Financing up to $2 million, PMC could be up to10% of the subtotal; above $2 million, PMC could be up to 5% of the subtotal. PMC should be charged proportionately to focal areas based on focal area project financing amount in Table D below.

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

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

[7] Provide those indicator values in this table to the extent applicable to your proposed project. Progress in programming against these targets for the projects per the *Corporate Results Framework* in the *GEF-6 Programming Directions* will be aggregated and reported during mid-term and at the conclusion of the replenishment period.

(agriculture, rangelands, and forest landscapes)	management	
4. Support to transformational shifts towards a low-emission and resilient development path	750 million tons of CO_{2e} mitigated (include both direct and indirect)	*88,523 tCO_2 eq over a 10 year period*[8]

PART II: PROJECT JUSTIFICATION

1. *Project Description*

1) The global environmental and/or adaptation problems, root causes and barriers that need to be addressed

Country Context

The Federation of St. Kitts and Nevis consists of two islands located in the Eastern Caribbean with a total land area of 269 sq. km. (St. Kitts is 176 sq. km, and Nevis is 93 sq. km.). The total population of the two islands is 47,195 people. The climate of St. Kitts and Nevis is tropical marine, influenced by steady northeast trade winds and tropical oceanic cyclonic movements. Mean annual rainfall ranges from about 40 inches in the coastal areas to about 150 inches in the central mountain ranges, although the South East Point of St-Kitts is drier, with mean annual precipitation varying from 39 inches on the peaks to 34 inches at Cockleshell Bay. Rainfall is unevenly distributed during the year, with a reliable wet period from August to September and driest months January – April. The hurricane season extends from June to November, and there is a high annual frequency of tropical disturbances that generate squalls and high wind velocities. SKN has been subject to a prolonged drought since 2015, leading to high pressure on the main aquifers such as the Basseterre Valley Aquifer that provides 40% of the country's needs, which has resulted in the rationing of municipal water supplies over the course of 2015-2016.

The economy in St. Kitts and Nevis has undergone radical transformation during the last decade, which has changed the islands' land use patterns and pressures on its ecosystems. Sugarcane long dominated the landscape, particularly on the island of St. Kitts, but faced with declining production, the Government closed the state-run sugar industry in 2005. As a result, approximately 3,750 hectares of sugar cane fields (of a total of 5,050 hectares of agricultural land) were suddenly no longer under active management. The shift out of sugar cultivation, which employed a large part of the population along the value chain from planting and harvesting to processing, packaging and exporting, produced significant unemployment and a challenge to farmers to adopt new crops / practices. At present, the agriculture sector is composed primarily of part-time smallholder farmers working on small plots (1 ha. or less) where they cultivate various vegetable, fruit and root crops for local markets, as well as a small livestock sector producing pigs, poultry, cows, sheep and goats; these smallholders face significant challenges from pests and diseases, water shortages and low productivity resulting from unsustainable production practices. As a result, although the soils in SKN are rich and can contribute to meeting domestic needs, production of food is insufficient and the country has started importing larger quantities of food at a greater economic and environmental cost (e.g. land degradation through abandonment of arable productive land, carbon emissions).

Agricultural cooperatives have not been part of the farming landscape in SKN, but these are now beginning to emerge and offer the opportunity to improve agricultural production and to engage on issues related to conservation agriculture and sustainable land management. Furthermore, in an effort to diversify the economy, land use zoning has been modified to allow for non-agricultural uses of former sugarcane lands, such as construction of homes, tourism facilities, schools, commercial & industrial sites, etc. More broadly, SKN is transitioning rapidly towards a more service-oriented economy; in 2014, tourism revenue contributed over 25.5% of GDP, and tourism revenues are forecast to rise to 31.2% of GDP by 2025 (however, ecotourism remains a very small part of the tourism sector in the country). This rapid growth comes with sustainable development challenges, in particular the construction of hotels and other infrastructure in potentially fragile areas or areas of important biological diversity, as well as an increase in uses of energy and water, increased pollution, and the potential degradation of coastal areas from unsustainable tourism practices.

SKN is home to rich terrestrial biological diversity. Vegetation types vary across the two islands, from small sections of Elfin Woodland at high elevations in St Kitts to rainforest in the upper watershed of the Wingfield River to dry scrubland in the South-east Peninsula. On Nevis, the vegetation varies from Elfin Woodland on Nevis Peak to dry scrubland and riparian forest along dry river channels. Various studies have identified eight mangrove areas on St. Kitts and seven on Nevis; it is estimated that mangroves occupy a total area of 70 hectares in the country. Unfortunately, the stands at most sites are poorly stocked with only a few species represented, although Greatheeds Pond and Friars Bay in St. Kitts and Nisbett Settlement in Nevis have fairly extensive stands and several different species, the most common of which are: Black mangrove (*Avicennia germinans*), White Mangrove (*Laguncularia racemosa*), Red Mangrove (*Rhizophora mangle*) and *Avicennia schaueriana*, which is listed on

[8] Please see Annex 3 for calculations

the IUCN Red List of Threatened Species. Beard (1949) estimated that of 2,000 species of flowering plants found in the Eastern Caribbean, 243 species were trees and 121 species were found in SKN, but there has not been a more recent census. SKN is home to several endangered, resident and migrant bird species, including the threatened Brown Pelican (*Pelecanus occidentalis*) and the Roseate Tern (*Sterna dougalliidougallii*). Wetlands (ponds) are numerous on St. Kitts island and constitute important ecosystems; the ponds and their surrounding vegetation (e.g. mangroves) serve as important habitats for wildlife, and even during dry spells the mud flats are important to shore birds and wading birds. These salt ponds have an average depth of one meter or less and some virtually dry up during dry spells. The ponds are replenished when they receive runoff from neighbouring hillsides; in addition, the low profile and fragile nature of the seaward berms allows seawater to breach the ponds during storms, periodically replenishing them with fresh seawater. Otherwise, there are no natural surface water connections to the open sea, which makes St. Kitts' ponds unique within the Caribbean, and the "Ponds of the Southeast Peninsula" is one of three terrestrial Key Biodiversity Areas (KBAs) identified in St. Kitts and Nevis (see Annex 1 for description and Annex 2 for map of locations). Two additional terrestrial KBAs exist on St. Kitts, namely the Central Forest Reserve and Cayon to Key sites. St. Kitts Central Forest Reserve KBA is a declared National Park covering 5,060 ha. Cayon to Key KBA remains unprotected and is a very important nesting site for the Leatherback sea turtle (*Dermochelys coriacea*). There are three more terrestrial protected areas established or in the process of establishment, namely Brimstone Hill Fortress (15 ha), Royal Basseterre Valley (200 ha) and Nevis Peak National Park (2,250 ha).

Environmental Problems

Due to its geographical location, topography and recent economic developments, in particular the closing of the sugar production sector and parallel growth of the tourism and construction sectors, St. Kitts and Nevis is facing increasing environmental pressures, which are limiting the country's ability to achieve its sustainability objectives.

Ecosystem Degradation: In the lowland coastal areas of St. Kitts and Nevis, intensive land use has removed all vestiges of the natural vegetation. Although the mountain peaks are still covered by forest, they do not have virgin forest characteristics. Overall, forest cover is estimated to be just over 5,000 ha, covering roughly 14% of the country area.[9] The lower slope areas of both islands are dominated by secondary growth on abandoned sugarcane farms. Most of the country's major watersheds are concentrated in the central area of the islands, and the area's forest resources provide a reliable rainwater storage service. However, growing deforestation in the middle and lower slopes is causing increased runoff and decreasing water availability and quality downstream, and slowing the process of aquifer recharge. Despite this decline in water availability, cropping continues to be rainfed, whereas urban and tourism water needs are being met from increasingly pressured groundwater sources. The country is also marked by clefts or ravines (ghauts), through which water runs down to the sea. The most important one on SK is College Street ghaut, which is subject to severe erosion, causing threats to agricultural land and human life, but many other ghauts on the island exhibit severe erosion problems of similar intensity. Degradation along these ghauts undermines arable farmland, and excessive silt from erosion in the ghauts is deposited into the sea, contributing to negative effects on the sea grass beds, mangroves, coral reefs and other spawning grounds in the marine environment. Coastal areas are also subject to negative impacts from improper shoreline development, sand mining, land-based pollution, and the destruction of reefs and mangroves. Residential and tourism development, including squatting and unregulated settlements, are the most important factor driving land degradation today in SKN; other important factors include deforestation, overgrazing and hoof damage, discharge of contaminated water and fires, and on Nevis, the operations of privately owned quarries, which are a major contributor to siltation in terrestrial and coastal waters. Land is subject to competing demands from various sectors such as agriculture, tourism and housing.

Biodiversity loss and invasive species: The significant area of abandoned sugarcane farms in the lower mountain slopes of both islands is now dominated by secondary growth, including large areas of invasive guinea grass, which has led to increased frequency of wildfires and the consequent release of soil carbon stocks. In addition, these abandoned farms have provided habitat for a number of other invasive species and pests, such as yellow mite, white flies, and the African Green or Vervet monkey (*Chlorocebus sabaeus*). The spread of human settlements into highland areas are also having a significant negative impact on biodiversity. In the past, settlement was primarily limited to coastal, but with the closure of the sugar industry in 2005, 'new' lands became available for settlement, including informal settlements (squatting) in vulnerable and ecological sensitive areas that have resulted in deforestation and soil erosion, as well as tourism development in ecologically sensitive areas that also poses a threat to biodiversity.

Climate Variability and Climate Change: Climate change is projected to increase the severity and negative impacts of hurricanes and other natural disasters in SKN, resulting in more widespread flooding (exacerbated by poor drainage systems and maintenance); landslides; coastal damage; water contamination; and loss of arable land. Sea level rise is expected to have a significant adverse effect on coastal low-lying areas where much of the development in St. Kitts and Nevis is concentrated.

[9] http://rainforests.mongabay.com/deforestation/archive/Saint_Kitts_and_Nevis.htm

Vulnerability to climate events can be demonstrated by the fact that agroforestry in SKN never fully recovered after Hurricane Hugo in 1989; the large stands of coconut trees destroyed in that event have not returned, in part because of pests that became more well established in the degraded landscape. The impact of climate change on supplies of freshwater is a critical issue in SKN. Already, climate change has caused shifts in rainfall patterns (shorter and more intense rainfall and longer and more severe droughts) which have negatively affected agricultural productivity and water availability in the country.), and put the country into a water-insecure situation, and for the first time in the country's history, the Government has had to ration water. Although agriculture only uses 10% of available water and historically relies on rain-fed sources, it is now at greater risk due to less rainfall and the possibility that water supplies in the dry season will be rationed. Water shortages are not only a threat to agricultural production, but also to the important tourism industry; in the last two years, SKN has been forced to refuse water to cruise ships docking in the country. Commercial hotels have taken to establishing their own water sources but this water is not shared with local communities or populations and depletes groundwater resources. Tourism uses 25-30% of water sources and currently pays no fees or obstruction costs. Due to over-extraction and sea level rise, some groundwater has been subject to salt-water intrusion.

The rapid ecosystem change and degradation patterns highlighted above lead to a loss in carbon stocks in agricultural lands, forests and mangroves. Associated with the growth of energy-intensive sectors such as construction, housing and tourism, these issues are placing the country in a position to gradually become a contributor to climate change, despite having declared its intention to becoming "the first Sustainable Island State" in the region. Finally, the growing land degradation and erosion and the low agricultural productivity are accelerating rural-urban migration patterns and the dependency on food imports, which leads to diminished livelihoods, higher energy consumption, lower economic growth from potentially sustainable sectors, and an over-reliance on unsustainable practices of natural resources management.

Barriers

The preferred solution to these problems is to actively engage stakeholders in the main economic sectors in sustainable resource use pathways that will restore the degraded environment and generate global environment benefits. A number of important barriers exist that are preventing St. Kitts and Nevis from achieving the preferred solution:

Inadequate policy, regulatory and planning frameworks: Presently, no central coordinating entity has technical and policy oversight for land development across all sectors, and instead responsibility is spread among six different agencies, of which the Development Control and Planning Board has the most responsibility at the policy planning level. Coordination between the various agencies with responsibility for environmental management is generally weak, and there is very little private sector participation in the implementation of best practices. Although a number of previous MEA project-driven initiatives for sustainable development have been undertaken in SKN, very few have resulted in a systematic transfer of technology and or human capacity building, and thus capacity building and institutional strengthening within state and non-state institutions and other stakeholders remains a priority from a human resource development perspective. While SKN has a well-functioning governmental system, the skills required to address environmental challenges among existing staff and potential new recruits are insufficient. There are no local training programs for emerging scientists, and no local research into biodiversity issues, sustainable land management or climate smart agriculture. Land use planners and policy makers are not fully aware of the implications of zoning and physical planning decisions, and environmental concerns are not mainstreamed into the land use planning process. Guidelines for Sustainable Land Management have been developed, but there is little evidence that they have been institutionalized, and implementation of the exiting National Physical Development Plan (NPDP) is constrained by insufficient information and data on land uses and ecosystem services. There is an urgent need to map and assess critical sites such as erosion hotspots (quarries, ghauts, ravines) and important biodiversity areas so that physical planning development, national planning processes, investment decisions and budgets can take these into consideration. In addition, knowledge of local species, indigenous biodiversity and pests/invasives is scarce and dispersed (the country has not had a biodiversity census since 1949) and as a result the role of biodiversity in sustaining the SKN economy is limited and there is lack of understanding at all levels of the value and contribution of biodiversity to the national development agenda and human wellbeing. Enforcement of existing rules and guidelines has proven to be insufficient and the reliance on voluntary standards for investment planning, particularly in the tourism and construction industry, has proven inefficient. Construction practices and standards (including Building Codes) both for public and privately funded developments are insufficient to ensure sustainability, meaning that the growth of the housing, tourism and other sectors could lead to rapidly increasing land degradation. For example, while tourism development is guided by high-level policy documents, challenges remain to ensure that sustainable tourism policy priorities are translated into local initiatives, and that regulatory frameworks are adequate and enforced. Thus, although environmental guidelines have been produced by the Ministry of Tourism regarding the construction of large-scale hotels and tourism facilities, these guidelines are merely shared with private tourism companies and are not enforced.

Limited technical capacities, experience and models for implementing ecologically sustainable pathways for natural resource use and economic development: Technical capacity for enforcing current regulations and practices in St. Kitts and Nevis is low,

and voluntary standards are proving insufficient to support sustainable development. Among farmers, there is limited technical capacity to adopt sustainable and efficient agricultural practices; most farmers practice cropping on a part-time basis, with limited technical means, and the sector has not yet become professionalized to a stage where small producers can operate at a viable level. As a result, significant amounts of potentially productive agricultural lands have been abandoned even as the country is becoming increasingly dependent on expensive imported food. Farmers who remain report significant challenges, for example production losses up to 60% in Nevis due to lack of proper storage and pests (particularly Vervet Monkeys), as well as low productivity due to a lack of adequate equipment and inputs (irrigation, fertilizer) and soil erosion and exhaustion. There is an urgent need to work with farmers and farmer groups to identify suitable areas for crop production and diversification, and to provide training for agricultural producers to address unsustainable agricultural practices. In terms of the protection of priority areas (carbon-rich and biodiverse) such as mangroves, forests and upper watersheds, St. Kitts and Nevis has one Marine Management Area (MMA) and two National Parks, the Central Forest Reserve and National Park (CFRNP) and the Royal Basseterre Valley National Park. However, conservation activities and capacities to protect important habitats and species within these sites are very minimal, and efforts and mechanisms to protect priority habitats from impacts arising in upstream or adjoining lands are extremely limited. Despite on-going efforts to manage biodiversity, the islands are faced with rapid growth in invasive species in degraded or abandoned agricultural lands, and the destruction of potentially important habitats from unplanned urbanization.

Lack of knowledge, information and awareness: SKN has aspirations to become the region's first Sustainable Island State, but the lack of updated and comprehensive data and knowledge on environmental and sustainable development conditions and challenges is a significant barrier to this goal. While opportunities for engaging in sustainable tourism or eco-tourism exist, lack of awareness and information on investment options and on proposed products mean that this potential remains untapped. There is also a need to ensure that locals and visitors are aware of practices for the sustainable use of nature and protection of biodiversity, including for example in and around mangroves, reefs, and sea grass beds, and with regard to threatened species of flora and fauna.

2) The baseline scenario or any associated baseline projects

A number of on-going initiatives in SKN are seeking to guide the country's economic transition towards increased sustainability, beginning with political commitment at highest levels as embodied in key policy reforms such as the National Physical Development Plan in St. Kitts and the National Adaptation Strategy. SKN, while pursuing economic growth through tourism, is dedicated to doing so sustainably and aims to become the first fully sustainable island in the world. In order to achieve this objective, it has undertaken key policy reforms as well as a series of initiatives and projects with international partners. However, SKN does not benefit from as much international support as some of the other Caribbean states, and therefore the scope of intervention remains limited, and the country requires strategic investments to ensure that its transformation is sustainable and contributes to the livelihoods of its people.

The following projects provide the baseline development activities that this proposed GEF intervention will complement:

- The Agriculture Diversification Project funded by the Government of St. Kitts and Nevis (USD 2.58 million), as well as various diversification initiatives supported by the SIDF on an on-going basis. The objective of this initiative is to facilitate the expansion of sustainable practices in agriculture to facilitate the expansion of non-sugar agriculture. Investments by the GEF can contribute to this objective by ensuring that it deployed in a low-carbon, climate smart way and that it promotes conservation and sustainable land management for the maintenance of carbon stocks in agricultural lands, reduced land degradation, conservation of forests and of biodiversity of key economic significance.
- The Agriculture Resource Management Project (ARMP) has been under implementation since 2008 following the closure of the sugar industry, to foster agricultural development and sustainability by building infrastructure, improving soil, water and land management and providing farmers with technical support and training. The ARMP is funded by the SIDF and executed by the Ministry of Agriculture; the existing budget of EC$ 10 million (approximately USD 3.3 million) is expected to be renewed. Work carried out under to date under the ARMP has done much to create a baseline on which this proposed GEF intervention can build. For example, main access farm roads have been maintained in areas where there was considerable road erosion; new roads were cut or reshaped and earth storm drains constructed to direct drainage flows off the road and into sluices. Debris in ghauts has been cleared and in some locations the project installed gabion baskets and planted vetiver grass to protect the exposed soil. The project also built dams, reservoirs and ponds allowing for the harvesting of over 13 million gallons of water during the dry season, benefiting over 50 producer groups. The proposed GEF intervention will build on experience gained during the ARMP to replicate and upscale water harvesting, irrigation and other sustainable agricultural practices.
- The OECS/EU supported St. Kitts Water Conservation and Drought Management Project (CDMP) and the New River Estate Stabilization of Degraded Lands for Nevis project (10.6 million Euros through 2018). The CDMP project seeks to address recent drought and water shortage issues by improving water conservation practices and by promoting investments for the rehabilitation and retrofit of key buildings and utilities in order to reduce water demand and wastage. The project

will support audits and conservation plans of public institutions (which are traditionally not metered); undertake pressure management of water distribution mains; conduct an evaluation of potential surface water sources in abandoned sugar plantations for potential use in agriculture; and retrofit six institutions, including three schools and one hospital. The GEF intervention will build on the assessments conducted by the CDMP for the construction of earth dams, ponds and other irrigation infrastructure.

- The GSKN, in partnership with bilateral and multilateral development partners, has provided substantial assistance to both farmers and agro-processors. For example, the Government of Taiwan has supported agro-processing to create more opportunities to sell to the local market and to expand exports to other islands. The Development Bank of St. Kitts and Nevis (DBSKN) has developed a number of financial mechanisms to provide funds for on-lending from the locally founded Sugar Industry Diversification Foundation (SIDF) to micro, small and medium agro-businesses, as well as opportunities provided through a partnership with the Government of Venezuela. The GSKN continues to provide assistance on an on-going basis to both farmers and agro-processors through the provision of inputs (seeds, materials, small supplies etc.) as well as training in bookkeeping, improved business practices, and cultivation of new crops and/or processing of new value added products. These programmes will continue as the GSKN continues to advance the development of the agriculture sector and to diversify products to meet the requirements of the population and ensure food security.

3) The proposed alternative scenario

The primary goals of the project are to help St. Kitts and Nevis to transition away from sugar and monocrop agriculture and to reorient all sectors of the economy towards sustainable resource use policies and practices, which together can provide economic opportunities for the country's population while also sustaining ecosystem services and globally significant biodiversity. These sustainable resource use pathways will consist of: 1) rehabilitation and protection of carbon-rich and biodiverse forest and mangrove ecosystems; and 2) restoration / maintenance of soil ecosystem services, water supply, and carbon stocks through sustainable and climate smart agriculture and agroforestry (which will also reduce energy-intensive food imports). The project is delineated through three main Components.

Component 1: Integrated and strengthened environmental planning and management on the islands of St. Kitts and Nevis to support island sustainability

Outcome 1.1 - Reduced pressure on natural resources from competing land uses on the islands of St. Kitts and Nevis: The project will support the updating of SKN's National Physical Development Plan (NPDP) to ensure an optimal allocation of land resources in order to generate development benefits and critical environmental benefits in tandem. The NPDP will be revised to better incorporate assessments of land degradation and erosion conditions and risks, links between conservation in productive and protected landscapes, and accounting for the environmental impacts of construction and urbanization. The NPDP is an integral part of the on-going policy decision-making process that guides all development and management of land and natural resources in the country, and will guide zoning and the locations of developments, as well as the program priorities of relevant ministries / departments, over the 10-15 years following the adoption of the updated NPDP. The existing Geographical Information System (GIS) managed by the Ministry of Sustainable Development to guide both public and private development decisions (e.g. when land is requested for a specific purpose, to indicate whether land is available for that purpose and where it is located) will be used a critical tool to assess land use changes over the past decade and to inform and guide the updating of the NPDP. In order to actualize the implementation of the NPDP, a package of modifications in environmental legislation and related regulations, policies, codes and standards will be proposed. The project will support updating of the 1904 Forestry Ordinance and/or the 1973 Agricultural Development Act to ensure that they are in line with the country's current sustainable development priorities. The project also will assess whether and how Building Codes should be revised to include environmental provisions such as restrictions on building on steep slopes and other sites vulnerable to land degradation processes. In addition, the project will propose policy changes to maintain and enhance carbon stocks or reduce emissions from agriculture and agroforestry (which will help to support project activities under Outcomes 2.1 and 2.2). In order to ensure the NPDP is based on accurate and up-to-date information, a digital land use mapping and prioritization exercise will be undertaken to identify and detail areas of high priority environmental concern, including areas subject to current or expected development pressures; areas that are at risk due to possible climate change impacts; areas of significant land degradation (e.g. quarries, ghauts); areas of high biodiversity value (e.g. KBAs, IBAs); and areas providing critical ecosystem services. The GSKN is in the final stage of the receipt of electronic maps that have been done for the country. This initiative will provide updated information on the state of play of the current land use and will aid to inform the land use maps specific to environmental pressures that will be developed under this proposal. This activity will be undertaken in close coordination with the GEF-supported regional project Integrating Water, Land and Ecosystem Management in Caribbean Small Island Developing States (IWECO), which includes a sub-project for SKN titled "Addressing Impacts of Acute Land Degradation in the College Street Ghaut in St Kitts and Quarries and Sand Mining Hotspots on Nevis".

Outcome 1.2 - Improved systemic capacity for promoting sustainable development in the islands of St. Kitts and Nevis through INRM: The project will provide capacity building to partners who play a leading role in implementing the NPDP, in particular institutions with sectoral responsibilities for the development and conservation of the islands of SKN, together with relevant CSOs and community partners. These stakeholders will benefit from training and practical application of approaches to land use planning and policy development, reducing pressure on critical habitats and species, coordination and information management and sharing (including participatory planning methodologies and strategies for outreach to communities), and identifying and addressing existing and potential drivers of land degradation. For example, the Geographical Information System (GIS) Division within the Department of Physical Planning, which is responsible for providing data to support decisions on land development and for tracking overall changes in land uses, will receive training in integrating existing platforms (Arc Map) used to track land usage with new information products such as the aerial mapping that was recently concluded in the country. Complementing these training activities, the project also will establish a scholarship program for post-graduate education, creating a cadre of experts to fill critical national capacity gaps in fields related to sustainable land management, biodiversity conservation and climate smart agriculture. The scholarship program will be focused on exiting staff in relevant government ministries; the project will develop detailed eligibility criteria and a list of admissible fields of study (based on a needs assessment), which are likely to include land use planning, sustainable agriculture, ecosystem restoration, climate smart agriculture, and carbon sequestration. The program will support the initial deployment of at least six students, who will be required to provide co-financing through the provision of service to the SKN government through bonded agreements of service, thus ensuring that knowledge and expertise acquired benefits the government for a minimum number of years. The project will also work with MoSD to determine adequate endowment options for the continuation of the program, which could include accessing carbon finance, using taxes and levies, or other fiscal instruments to finance environmental education and awareness. Additional details on the institutional setup and long-term financial strategy for this activity will be determined during PPG.

Outcome 1.3 - Reduced pressure on three indicator species at two Key Biodiversity Area (KBA) sites: Rapid biodiversity assessments will be conducted to map the presence of threatened and IBA trigger species in the two coastal KBAs – Ponds of Southeast Peninsula and Cayon to Key. These assessments will be used to confirm the selection of indicators species for the project, i.e. Leatherback turtle (*Dermochys coriacea)*, Brown Pelican (*Pelicanus occidentalis)* and Least Tern (*Sternula antillarum)*, and/or to identify other priority species for monitoring. Criteria for selecting target species for conservation will be finalized during the PPG, but will likely include global significance, endemism, degree of threat, and degree of habitat degradation. Recommendations for ensuring the conservation of these species will be made, with a focus on ensuring viable populations are maintained. Based on the assessment, the project will recommend management strategies and regulations to ensure the conservation and sustainable management of selected priority species.

Component 2: Mainstreaming BD conservation, SLM and CCM into key development and resource management sectors

Outcome 2.1 - Conservation of BD habitat and ecosystem services, and increased carbon sequestration in soil and woody vegetation, achieved through restoration and management of critical forest sites: The project will support reforestation and Assisted Natural Regeneration (ANR) on at least 350 hectares of degraded or denuded land in the upper/mid level watershed areas located adjacent to the Central Forest Reserve and National Park (CFRNP). In so doing, the project will increase the area of forest habitat and improve connectivity between the upper slopes of the CFRNP, which contain Elfin and Sierra Palm Cloud Forest and Evergreen Cloud Forests on the upper slopes as well as tropical moist forest that harbours at least six Neotropical migrant bird species[10] on the mid-level slopes, with numerous forest patches extending from the mid slopes to the coast. Reforestation will also reduce the negative impacts (sedimentation) of degraded areas on downstream aquatic and coastal/marine ecosystems and biodiversity (including within the Cayon to Key KBA), improve water flow and retention to the benefit of local communities, and provide communities adjacent to the CFRNP with economic alternatives to harvesting resources within the park. These areas will be managed in partnership between local farmers and the Ministry of Sustainable Development, and the project will assist these stakeholders in undertaking reforestation and ANR using native and valuable agroforestry tree species such as Soursop, Sugar Apple, Plum, Golden Apple, Mango, Guinep and Sea Grape. The project will provide training (through farmer field schools) and capacity development on reforestation, ANR, agroforestry practices and the integration of carbon considerations into agroforestry management to the staff of extension services and all interested farmers. A final decision on which areas will be selected will be made during the PPG phase. The project also will work to rehabilitate critically endangered mangrove ecosystems and ensure that they are adequately protected, which will ensure the maintenance of carbon stocks in mangroves, the conservation of biodiverse areas that play a key role in the future economy of the country, and the increased protection of SKN's coastal areas, including from climate change related impacts such as storm surges and salt water intrusion. To begin, the project will carry out a rapid assessment of mangrove ecosystems in the country in order to identify the most threatened sites. Based on this assessment, the project will develop an action plan to conserve remaining mangrove areas,

[10] BirdLife International (2008). *Important Bird Areas in the Caribbean: key sites for conservation*. Cambridge, UK: BirdLife International (BirdLife Conservation Series No. 15), 348pp.

including the coastal mangroves in the Ponds of the Southeast Peninsula KBA, which are important for preventing coastal erosion and storm surges in that area. The action plan will consider the piloting of eco-tourism concessions in mangrove areas to establish incentives for their protection. In addition, the project will work with local NGOs and CBOs to restore at least 20 hectares of mangroves in the Cayon to Key KBA, which will help to protect coastal areas on the eastern coast of St. Kitts (downstream of the CFRNP) that are critical nesting habitat for the Leatherback turtle (Dermochys coriacea) as well as other sea turtle species.

Outcome 2.2 - Tested SLM practices supported by productive assets have reduced LD, increased soil carbon sequestration, and enabled sustainable agricultural production on degraded / abandoned lands: The project will support the restoration of at least 300 hectares of degraded and/or abandoned lands located in the upper/mid level watershed areas adjacent to the Central Forest Reserve and National Park (CFRNP) to productive agricultural uses. The project will support farmers who lost their livelihoods following the decline of the sugar industry in re-establishing agricultural production on lands that are now dominated by invasive vegetation with low carbon sequestration capacity and high rates of soil erosion. Restoration activities will include the removal of invasive underbrush/ regrowth, sustainable clearing, bunding and contouring, terracing and other appropriate landscaping methods. Once these activities have been carried out, the project will support farmers in adopting SLM and climate smart agricultural practices, including reduced tillage, soil improvement and conservation techniques, low GHG emissions practices, etc. A final decision on which areas will be selected will be made during the PPG phase, but is expected that at least 100 farmers will participate and receive training in the various land restoration and agricultural practices. The project also will assist farmers in these areas in selecting resilient crop varieties by carrying out a climate-related suitability analysis of potential crops as well as a market analysis of which crops are commercially viable, and by working with existing programs (as described in the baseline) to provide farmers with access to markets, micro-loans, and marketing of products. In cooperation with the ARMP baseline project, producers will benefit from project support for the acquisition or rehabilitation of productive assets, including water efficient irrigation equipment, low-energy transformation machinery, climate resilient storage facilities, greenhouses, fencing, and improved plant material. This will ensure that new agricultural operations use the latest available technologies for reducing land degradation and producing foods without generating added emissions.

Outcome 2.3 - Improved infrastructure conditions support SLM measures: The project will support the construction of up to 5 earthen dams and ponds that will provide additional water for irrigation during dry season, reduce erosion including the risk of flooding during severe rainfall events, and reduce the energy use involved in water extraction (wells, boreholes) and adduction. Combined with adequate water use efficiency technologies, the small ponds will contribute to creating resilience in the agriculture sector, and by increasing land productivity, reduce the trend of agricultural expansion into forested areas. Preferably, ponds/dams will be located on public land, or on private land administered by volunteer farmer groups, close to the newly rehabilitated agricultural and agroforestry production sites (see Outcomes 2.1 and 2.2). Full siting and selection criteria will be specified during project preparation, based on watershed analyses and environmental scoping, experience gained during the implementation of the ARMP, arrangements with identified farmer groups, and technical feasibility and cost criteria.

Component 3: Knowledge management and dissemination for SLM, BD and CC

Outcome 3.1 - Increased national capacity to plan for and manage environmental issues through knowledge exchanges: The project will support regional and south-south cooperation by assisting the GSKN in participating in national, regional and global knowledge exchanges on SLM, BD and CC issues. This will include, for example, OECS regional meetings and projects, conferences of the parties to the relevant MEAs, technology fairs and conferences, with a particular focus on low-carbon resilient agriculture and biodiversity conservation. The project also will support SKN stakeholders in exploring opportunities for partnerships with regional research institutions or platforms, and for preparing publications and tools that document best practices and lessons learned that can be disseminated regionally and globally. UNEP as the project executing agency will facilitate information sharing with the project "Sustainable Land Management in the Commonwealth of Dominica", which is currently under development and will address many similar issues.

Outcome 3.2 - Increased understanding and awareness of relevant environmental issues among the general public, land use managers, the tourism industry and international visitors to SKN: The project also will design and implement public education and awareness campaigns on relevant environmental issues, particularly sustainable land management, biodiversity conservation and climate smart agriculture. General awareness raising, through radio, television and print media, will target the general public and schools to ensure that they are aware of the impacts of key economic activities on natural resources such as water, biodiversity, coastal zones, energy, etc. This strategy will support efforts to strengthen enforcement of rules and regulations concerning zoning, sand mining, extractive industries, tourism, and construction. The project also will target agricultural sector stakeholders, starting with producers and buyers, with a view to increasing the availability of technical information on sustainable and climate smart production. Outreach to these stakeholders will be carried out primarily through learning-by-doing approaches such as farmer field schools (see Component 2), as well as through the publication of relevant guidance materials. In addition, a program will be implemented to develop SLM and climate smart agriculture manuals and tools for the curricula of educational

institutions, in particular agricultural training programs / institutes. A public relations campaign will support on-going efforts to promote St. Kitts and Nevis as an eco-friendly holiday destination, and to raise awareness about among tourists and industry stakeholders about the tourism sector's ecological footprint, as well as options to reduce the footprint. As part of this effort, the project will carry out assessments to demonstrate to policy makers the economic benefits and market value of positioning SKN as an eco-friendly destination, in order to encourage long-term support for this approach. Policy-relevant data and information, including the maps and assessments of critical sites and biodiversity carried out under outcomes 1.1 and 1.3, will be consolidated in an environmental information system, which will be used to document progress across key indicators on the basis of existing systems and data. This information will be disseminated to relevant ministries and decision-makers, with the goal of informing future land use planning and zoning decisions in a way that supports the realization of sustainability policies.

4) Incremental/additional cost reasoning and expected contributions from the baseline

Baseline Scenario	Incremental Cost
In the baseline scenario, existing institutional, legal and regulatory frameworks governing land use planning, and environmental issues will not support sustainable development, building codes will not include provisions for the environment, land use plans will not be based on accurate environmental information, and enforcement capacity will remain weak and fines and penalties will not be applied consistently. Finally, none of the secondary (college-level) institutions on SKN offer comprehensive curricula in environmental sciences, climate smart agriculture or land management, and therefore, without the GEF investment, access to training and education opportunities relevant to environmental conservation and sustainable development will remain very limited.	With the GEF incremental investment, critical information on land use planning and trends, land degradation processes and ecological carrying capacities, and priority sites for erosion control and habitat conservation will be consolidated and integrated into national planning processes. By the end of the project, building codes, environmental regulations and the National Physical Development Plan will have been revised and brought in line with environmental policy priorities. The Ministry of Tourism and other partners will have received training for enforcing green guidelines in the construction sector, as well as regulations governing illegal extractive practices such as sand mining. Finally, national technical capacities in fields relevant to sustainable development and environmental conservation will have been greatly increased, with at least 6 post graduate students having acquired knowledge and experience.
In the baseline scenario, investments in agricultural diversification and production will remain insufficient to enable SKN to revive its national food supply and markets. Policy makers will not have the information necessary to assess the suitability of land for new types of crops. Agricultural operations will not have implemented climate smart practices or the operation of integrated food systems such as agro-forestry, and in the absence of sufficient guidelines and infrastructure, agricultural enterprises will be unable to convert to new and more sustainable systems. Without GEF investment, water supplies will remain insufficient to guarantee year-round water supply for agriculture, in particular since information provided by the Ministry of Water indicates that other options to ensure adequate supply of water in the future (desalination or deeper boreholes) are onerous and risky. Forest cover will continue to be degraded and land degradation will accelerate. Mangroves, which play a key provisioning and protecting function, will continue to be degraded (less than 70 ha remain, and they are under threat from unsustainable use and unsustainable tourism). Although SKN has declared several national parks and forest reserves, there are currently no major baseline investments targeting terrestrial biological diversity and this area is often ignored during planning and investment making. As a result, without the GEF investment, critical natural ecosystems will continue to be degraded in the absence of any effective protection and conservation measures.	With the GEF investment, sustainable agricultural production will be implemented on 300 hectares of restored lands. These agroforestry-based systems provide food resources and livelihoods opportunities while also maintaining ecosystem services, including water conservation, carbon sequestration, and flood and erosion control. In addition, by the end of the project water retention ponds will be helping to compensate for increasing water scarcity and competition for water on the islands, as well as reducing energy demands for water mobilization. Through the project, 350 hectares of forests will have been restored, primarily in upper watershed areas, which play a key protective and provisioning role. Using reforestation and Assisted Natural Regeneration approaches, and utilizing local / endemic tree species such as fruit trees and coconuts, functional agroforestry ecosystems will be in place to sustain livelihoods. In coastal areas, mangroves and sea grass beds will have been protected and at least 20 hectares of mangroves will have been rehabilitated. In addition, policy makers and resource managers will have access to updated biodiversity data so that conservation efforts can be better targeted.

5) Global environmental benefits

The following environmental benefits will be realised by the project:

Land Degradation Focal Area (baseline data and GEB targets will be collected during the PPG stage in conjunction with the completion of the LD tracking tool)

- Sustainable management of land and natural resources on at least 500 hectares of land consisting of agricultural land and forest land that results in reduced soil erosion, halting/reversal of land degradation processes, and continued provision of ecosystem services
- Improved productivity as measured by increases in Primary Production and reduced erosion rates
- Improved socio-economic returns from improved land productivity
- Improved water availability through the improvement of streamflow and quality

Biodiversity Focal Area (baseline data and GEB targets will be collected during the PPG stage in conjunction with the completion of the BD tracking tool)

- Reduced fragmentation and loss of forest habitat due to human settlement
- Tourism and other development is well planned and not in ecologically sensitive areas
- Biodiversity Intactness Index improved in and around the Cayon to Key and Ponds of Southeast Peninsula KBAs

The project also will contribute to the achievement of the following Aichi Biodiversity Targets

Aichi Targets	**Relevant Project Activities**
Target 1: By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably	Environmental awareness campaigns (3.2)
Target 2: By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.	Baseline mapping (1.1.3) and BD assessments (1.3.1) integrated into National land use planning (1.1.1)
Target 7: By 2020, areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.	Agroforestry / forest conservation (2.1.1), mangrove conservation (2.1.2), sustainable agriculture (2.2.1)
Target 14: By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.	Agroforestry / forest conservation (2.1.1), mangrove conservation (2.1.2), sustainable agriculture (2.2.1), and agricultural water infrastructure (2.3.1)
Target 15: By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.	Forest rehabilitation (2.1.1), mangrove rehabilitation (2.1.2), and degraded land rehabilitation (2.2.1) lead to increased carbon sequestration

Climate Change Mitigation Focal Area: The expected direct global environmental benefits from the climate-smart agriculture and land degradation practices that will be adopted under the project are in the range of 88,523 tCO_2eq over a 10 year period (see Annex 3 for calculations).

6) Innovation, sustainability and potential for scaling up

Innovation: In areas such as revisions to the Building Codes and enhanced water infrastructure, the proposed project will build on experience and proven models. However, in other areas the project will support a number of innovations for SKN, such as the use of assisted natural regeneration and the promotion of farmer field schools as an approach to transfer knowledge to producers. The project also will adopt a business-oriented agricultural production approach that will help to create commercially viable agricultural enterprises, by considering aspects related to the entire value chain and by ensuring the footprint of agriculture is reduced all along the production cycle. Other innovations will include the use of climate-smart agricultural practices focused on creating quality produce that can be sold on local and international markets, as well as organic agriculture, agro-forestry, permaculture and other techniques that reduce land degradation and maintain soil carbon content. The project will also innovate in that it will seek to create local technical capacity among producers and land users, but also among government staff and prospective new recruits. The scholarship program and training programs are innovative approaches to help to create a new cadre of experts who can be relied upon to help promote the country's sustainable development agenda.

Sustainability: The sustainability of the project will be built from the outset in all interventions. In terms of policies and regulations, sustainability will be supported by incorporating land / forest restoration and SLM practices into the revised NPDP, which will be the guiding document for development planning and permitting in the country for at least ten years. Sustainability also will be increased by establishing the baseline data and information management systems necessary for monitoring of land degradation processes and trends over the long term. The project will also strengthen institutional capacities and expertise, including removing critical gaps in the country's technical capacity regarding climate-related agricultural issues and land use planning, which will enable the Government to make more cost effective and sustainable policy decisions in the

future. Project activities are also designed to establish new incentives for conservation and sustainable management of natural resources, such as assessments to demonstrate to policy makers the economic benefits and market value of positioning SKN as an eco-friendly destination. The project will also create visible economic incentives for the establishment of integrated agricultural systems, such as the establishment of tangible infrastructure and assets, as well as enhanced market opportunities, to incentivize farmers to undertake SLM agriculture and agroforestry activities, which will not only help combat land degradation and curb biodiversity loss, but will also lead to a gradual increase in income for producers. It is expected that, in the long term, restoration of abandoned land to agricultural production will help the country become less dependent on imports of food.

Replicability: Because SKN is a very small country, project results will be visible to a large number of people, and therefore replication and upscaling will occur naturally provided that mechanisms and financial support are identified. Technologies and approaches promoted by the project, in particular those targeting the agricultural and forestry sectors, will be immediately adaptable to the entire country, and will be integrated into key policy documents such as the National Physical Development Plan and the Nevis Physical Development Plan, as well as important norms and standards such as the Building Codes. Farmer Field Schools and other farmer-based extension systems will play a key role in ensuring the replicability of results from one farm to the next, by promoting a learning-by-doing approach in which results are usually immediately visible and transferable. Through Component 3, the project will disseminate its key achievements so that a larger group of stakeholders can become inspired to take up the proposed technologies and approaches.

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

Stakeholders involved in this project will include:

Stakeholders	**Participation in the project preparation**	**Participation in project implementation**
Ministry of Sustainable Development	Lead Project Preparation, coordinate inputs from other ministries	Lead Executing Agency: overall coordination of project; lead review and revision of environmental policies and plans
Ministry of Agriculture, Human Settlement, Cooperatives and Environment	Provide inputs into development of Component 2, conduct assessments of value chains and crops, provide information on agricultural lands and management approaches	Participate in implementation of Component 2, deploy farmer field schools and extension approaches, assist with procurement of seeds, materials and trees
Department of Water Services	Provide input on the deployment of water harvesting technologies	Lead on the execution of water ponds and earth dams; participate in water assessments.
Ministry of Tourism	Provide inputs on activities with potential ecotourism potential (i.e. mangroves)	Support development of eco-tourism or conservation based tourism and enforcement of green guidelines; participate in revision of legal texts.
Physical Planning Department	Lead activities under Component 1, provide inputs on infrastructure related components for the design of technical plans.	Lead on revision of National Physical Development Plan, also contribute to the assessment and execution of rural public works
Housing and Land Development Corporation	Provide input on construction codes and investments into the housing market	Participate in the revision of Building Codes and the National Physical Development Plan
Ministry of Community Development, Gender Affairs and Social Services	Provide input on the development of alternative agricultural livelihoods from a socio-economic perspective; ensure gender integration	Participate in the implementation of Components 2 and 4
Private Sector	Partnerships will be developed with tourism operators; financial institutions; and agricultural enterprises	To be determined during project preparation
Community Organizations	Partners including the REACH Hamilton Community Group and the New River Farmers Association in Nevis are expected to play a key role in formulating project activities on agroforestry and agricultural production, including identifying SLM approaches suitable to SKN and selecting sites for field interventions.	The CSOs mentioned and others are expected to play a key role in organizing the participation of local communities in agroforestry and agricultural production activities, based on their experience in community education and awareness on natural resource management, small-scale reforestation initiatives, small business development, and identifying local knowledge on agricultural production and the traditional uses of plants.
Saint Christopher National Trust (SCNT) and Nevis Historical and Conservation	SCNT and NHCS will guide project design as it relates to sustainable development decisions; matters affecting built heritage and	SCNT and NHCS support implementation of activities related to sustainable development, built heritage and conservation, and protection of the

Society (NHCS)	conservation; and protection of the natural environment	natural environment

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

St. Kitts and Nevis has taken great strides in improving gender equality within the country. However, certain gaps still exist; as highlighted in the CDB's Country Gender Assessment in 2014, the federation does not have a national gender policy, strategy or action plan, which could help to foster improved understanding of women's issues and to mainstream those issues at the policy level. While women are actively involved in many of the same economic activities as men in the country, agro-processing is more targeted towards women, and the project will seek to advance women's livelihoods by investing in the planting of coconut trees, sea grapes and other agro-forestry species which can be used by women in local production. The project will monitor women's participation by including gender-disaggregated targets, and will seek to ensure that all activities are designed in a way that promotes equal participation of men, women and youth, with particular attention to labour saving technologies, access to training opportunities, and participation in producer groups and farmer field schools. A more detailed gender analysis will be undertaken during project preparation.

4 Risks. Indicate risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, propose measures that address these risks to be further developed during the project design (table format acceptable).

Risk	Rating	Risk management strategy
Climate change variability: major natural disasters (such as hurricanes, earthquakes, floods and droughts) strike Saint Kitts and Nevis	Medium	While there is no adequate management strategy in the case of a major hurricane or natural disaster striking the islands, risk preparedness and early loss prevention measures will be put in place for project activities involving agriculture, in line with current practices for Disaster Risk Management in SKN. Should a significant disaster occur, the project will work with development partners to address damages and to implement recovery strategies. Project activities to restore vegetative cover and prevent soil erosion will help in the longer term to reduce the damage caused by extreme weather events.
Limited policy level buy-in during periods of financial stress shifts priorities away from sustainable resource management and diminishes national investment after the project ends	Low	Environmental sustainability is a top-level priority for the Government of SKN, as expressed in several high-level policy statements and plans. Given the urgent need to diversify SKN's economy, and the potentially important savings this could bring in terms of energy, food imports, and avoided costs of land degradation, the project is expected to mobilize continued high-level support.

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

The project will coordinate with the baseline initiatives described in Section 1 through the Ministry of Sustainable Development and structures established for the management of this project. During project preparation, areas for detailed cooperation, such as joint work plans, cost sharing arrangements and knowledge exchanges, will be refined. In addition, the project will actively coordinate with other GEF projects currently under implementation and preparation, as follows. The regional project Integrating Water, Land and Ecosystem Management in Caribbean Small Island Developing States - GEF IWEco covers ten Caribbean countries, including St. Kitts and Nevis. The IWEco project's primary goal is the implementation of an integrated approach to water, land and ecosystems services management. The IWECO sub-project in SKN will implement a number of infrastructure projects, including: land degradation control measures along College Street Ghaut; grey water treatment investments to treat effluent from private and commercial properties in the greater Basseterre area; construction of a retention pond at Shadwell Estate; restoration and reforestation of quarries; the deployment of artificial reefs; and beach restoration. The project will also support a cost-benefit and feasibility study for sustainable sand extraction; invest in community-based water supply and sanitation for disadvantaged communities; create a suite of IW, LD, and BD-related indicators to be integrated into national accounts; and strengthen policy and legislation for the effective management of water, land and ecosystems resources that account for climate change. Cooperation will be sought to share methodologies and lessons and to explore opportunities for joint work and work plans to avoid duplication.

The GEF-UNDP project Conserving Biodiversity and reducing habitat degradation in Protected Areas and their Buffer Zones, which will run until August 2019, will work to: strengthen laws and regulations that govern Protected Areas (PA); buttress policy and institutional frameworks for PA system management; establish a Protected Area Agency and overall institutional

framework for PA system management; operationalize Terrestrial and Marine Protected Areas; and increase awareness of and support for the PA system. Coordination will be sought with this project to ensure that interventions promoted by the project are consistent with management plans and the demarcations of terrestrial protected areas. The proposed regional GEF project Preventing Costs of Invasive Alien Species (IAS) in Barbados and the OECS Countries, currently under development, is intended to promote prevention, early detection, control and management frameworks for Invasive Alien Species (IAS) that emphasize a risk management approach by focusing on the highest risk invasion pathways into the participating countries. In SKN, the project will promote strengthened invasive alien species management frameworks and cross-sectoral arrangements to reduce IAS threats in terrestrial, marine and coastal ecosystems. Coordination between the two projects will be further explored during project preparation.

***6. Consistency with National Priorities*.** Is the project consistent with the National strategies and plans or reports and assessments under relevant conventions? (yes X /no☐). If yes, which ones and how: NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, etc.

The aims of this project are consistent with the overall national policy priorities established by the Government of St. Kitts and Nevis (GSKN), such as the National Poverty Reduction Strategy and the National Adaption Strategy (NAS, 2006), which outlines the strategy for the fiscal, economic, social, physical and environmental transformation of the Federation in the aftermath of the closure of the sugarcane industry. The NAS identifies four pillars of development to advance this process: non-sugar Agriculture, Tourism, Financial Services and Information and Communication Technology. Several crosscutting areas were also identified, including housing, infrastructural development, health and wellness, offshore education and private sector development. The project also will support a revision or updating of the National Physical Development Plan (NPDP), which identifies appropriate physical planning and land use strategies to allow for sustainable exploitation of the natural resource base and to direct the use of public sector and private industry resources for planned and orderly development. The Nevis Physical Development Plan is still pending approval. The project is also in line with the Sustainable Land Management Plan, which contains guidelines on land management with linkages to environmental conservation and adaptation to climate change, and the National Environmental Management Strategy, which seeks to reduce environmental degradation, raise awareness on environmental issues, promote environmentally friendly technologies, and protect biodiversity. The project will be consistent with the National Conservation and Environmental Protection Act (NCEPA), which outlines a framework for the declaration of sensitive ecological and historic sites as protected areas, as well as the Development Control and Planning Act, which makes provisions for the development of land in urban and rural areas.

Finally, this project makes a significant contribution to the implementation of SKN's commitments to the three Rio Conventions, as expressed in the country's UNCCD National Action Plan, the NBSAP, and the INDC and National Communications to the UNFCCC. The UNCCD NAP aims to address the main causes of land degradation and to combat drought through the promotion of alternative livelihoods, sustainable agricultural practices, the development and efficient use of energy, and the strengthening of capacities for assessment and observation. The Govt. of SKN is currently working with the Partnership Initiative on Sustainable Land Management (PISLM) to establish LDN targets; during the PPG phase, the project will identify ways in which it can provide inputs to this process, including the baseline, work plans and final LDN targets. The NBSAP establishes that the management of natural resources should be based on scientific grounds in order to ensure continuity of the natural ecological balance and prevent deterioration of ecosystems. The NBSAP also identifies as priorities efforts to develop SKN's scientific and technological capacity, to strengthen legal frameworks, and to establish socio-economic incentives for conservation and sustainable development of natural resources. The INDC and National Communications note key priorities to address climate change, including managing water demand and extraction and promoting adaptation to climate change through sustainable resilient livelihoods.

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

The knowledge management approach for this project is nested within Component 3, where the project will support the generation and dissemination of much-needed knowledge. The project will support regional and south-south cooperation by assisting the GSKN in participating in national, regional and global knowledge exchanges on SLM, BD and CC issues, including OECS regional meetings and projects, conferences of the parties to the relevant MEAs, etc., and will support SKN stakeholders in exploring opportunities for partnerships with regional research institutions or platforms, and in documenting best practices and lessons learned that can be disseminated regionally and globally. The project also will design and implement public education and awareness campaigns on relevant environmental issues, particularly sustainable land management, biodiversity conservation and climate smart agriculture, including general awareness raising on the impacts of economic activities on natural resources such as water, biodiversity, coastal zones, energy, etc.; providing technical information to agricultural producers / buyers on sustainable and climate smart production and developing SLM and climate smart agriculture

manuals and tools for educational institutions; sharing information with policy makers on the economic benefits and market value of positioning SKN as an eco-friendly destination; and developing, consolidating and sharing maps and assessments of critical sites and biodiversity with relevant ministries and decision-makers, with the goal of informing future land use planning and zoning decisions in a way that supports the realization of sustainability policies.

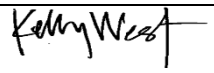
PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)

A. RECORD OF ENDORSEMENT[11] OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S): (Please attach the Operational Focal Point endorsement letter(s) with this template. For SGP, use this SGP OFP endorsement letter).

NAME	POSITION	MINISTRY	DATE *(MM/dd/yyyy)*
Lavern Queeley	Director Department of Economic Affairs and PSIP	Ministry of Sustainable Development	**8 FEBRUARY 2017**

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF policies[12] and procedures and meets the GEF criteria for project identification and preparation under GEF-6.

Agency Coordinator, Agency name	**Signature**	**Date** *(MM/dd/yyyy)*	**Project Contact Person**	**Telephone**	**Email**
Kelly West, Senior Programme Manager & Global Environment Facility Coordinator Corporate Services Division UN Environment		July 13, 2017	Marianela Araya Task Manager	(507) 305-3169	marianela.araya@unep.org

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

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

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

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

Annex 1: Terrestrial Key Biodiversity Areas of St. Kitts and Nevis

International Name: St. Kitts Central Forest Reserve

Area: 5,960 ha

KBA Criteria[13]: The site has been identified as an Important Bird and Biodiversity Area based on the presence of: Significant populations of endemic species known only to be found in a limited area.

Site Description[14]: The St. Kitts Central Forest Reserve is comprised of all areas on the island of St. Kitts over 300 meters elevation. The dominant feature of the reserve is Mt. Liamuiga (1,156 m), the highest point on St. Kitts. It is part of the mountain range which runs north to south and forms the northern part of the island. Human settlement is limited to the lower elevations, where sugarcane fields were farmed and villages dot the coastal area. Canyons, or ghauts, radiate from the peak.

Key Biodiversity: Restricted-range species found in the reserve include the Bridled Quail-dove *Geotrygon mustacea*, Lesser Antillean Flycatcher *Myiarchus oberi berlepshii*, Purple-throated Carib *Eulampis jugularis*, Green-throated Carib *Eulampis holosericeus*, Antillean Crested Hummingbird *Orthorhyncus cristatus*, Brown Trembler *Cinclocerthia ruficauda pavida*, Pearly-eyed Thrasher *Margarops fuscatus*, Scaly-breasted Thrasher *Margops fuscus*, Lesser Antillean Bullfinch *Loxigilla noctis*, and Antillean Euphonia *Euphonia musica*. Specific locations and population estimates were not found in the literature. Steadman et al. report that all except the Green-throated are common in undisturbed moist forests on St. Kitts.Six species of neotropical migrants have been reported from this habitat type on St. Kitts

Non-bird biodiversity: No endemic or threatened botanical species are reported for St. Kitts. Restricted-range herpetofauna and bats are not known but likely exist within the proposed IBA.

Populations of IBA Trigger Species:

Species: Bridled Quail *Geotrygon mystacea*; *IUCN Red-list Category:* LC; *Season:* resident; *Population estimate:* unknown
Species: Green-throated Carib *Eulampis holosericeus*; *IUCN Red-list Category:* LC; *Season:* resident; *Population estimate:* unknown
Species: Purple-throated Carib *Eulampis jugularis*; *IUCN Red-list Category:* LC; *Season:* resident; *Population estimate:* unknown
Species: Antillean Crested Hummingbird *Orthorhunchus cristatus*; *IUCN Red-list Category:* LC; *Season:* resident; *Population estimate:* unknown
Species: Lesser Antillean Flycatcher *Myrarchus oberi*; *IUCN Red-list Category:* LC; *Season:* resident; *Population estimate:* unknown
Species: Scaly-breasted Thrasher *Allenia fusca*; *IUCN Red-list Category:* LC; *Season:* resident; *Population estimate:* unknown
Species: Pearly-eyed Thrasher *Margarops fuscatus*; *IUCN Red-list Category:* LC; *Season:* resident; *Population estimate:* unknown
Species: Brown Trembler *Cinclocerthia ruficauda*; *IUCN Red-list Category:* LC; *Season:* resident; *Population estimate:* unknown
Species: Euphonia musica; *IUCN Red-list Category:* NR; *Season:* resident; *Population estimate:* unknown
Species: Loxigilla noctis; *IUCN Red-list Category:* NR; *Season:* resident; *Population estimate:* unknown

International Name: Cayon to Key

Area: 6,000 ha

KBA Criteria[15]: The site has been identified as a Key Biodiversity Area based on the presence of: Significant populations of globally threatened species.

Information on Globally Threatened Species found in the KBA[16]:

Scientific Name: Dermochys coriacea

- *Common Name:* Leatherback Sea Turtle
- *Red-list Category:* Vulnerable
- *Geographic Range:* Leatherbacks are distributed circumglobally, with nesting sites on tropical sandy beaches and foraging ranges that extend into temperate and sub-polar latitudes.
- *Current Population Trend:* Decreasing
- *Habitat and Ecology: D. coriacea* is an oceanic, deep-diving marine turtle inhabiting tropical, subtropical, and subpolar seas. Leatherbacks make extensive migrations between different feeding areas at different seasons, and to and from nesting areas. Leatherbacks feed predominantly on jellyfishes, salps and siphonophores. Females usually produce several (3-10) clutches of 60-90 eggs in a reproductive season, and typically have a re-migration interval of multiple years (2+) between subsequent

[13] https://www.ibat-alliance.org/ibat-conservation/kbafactsheet/m19914
[14] http://datazone.birdlife.org/site/factsheet/19914
[15] https://www.ibat-alliance.org/ibat-conservation/kbafactsheet/m28537
[16] Wallace, B.P., Tiwari, M. & Girondot, M. 2013. *Dermochelys coriacea*. The IUCN Red List of Threatened Species 2013: e.T6494A43526147. http://dx.doi.org/10.2305/IUCN.UK.2013-2.RLTS.T6494A43526147.en. Downloaded on **18 February 2017**.

reproductive seasons.

- Major threats: Threats to Leatherbacks vary in time and space, and in relative impact to populations. Threat categories affecting marine turtles, including Leatherbacks, were described by Wallace *et al*. (2011) as:

1) Fisheries bycatch: incidental capture of marine turtles in fishing gear targeting other species;
2) Take: direct utilization of turtles or eggs for human use (i.e. consumption, commercial products);
3) Coastal Development affecting critical turtle habitat: human-induced alteration of coastal environments due to construction, dredging, beach modification, etc.;
4) Pollution and Pathogens: marine pollution and debris that affect marine turtles (i.e. through ingestion or entanglement, disorientation caused by artificial lights), as well as impacts of pervasive pathogens (e.g. fibropapilloma virus) on turtle health;
5) Climate change: current and future impacts from climate change on marine turtles and their habitats (e.g. increasing sand temperatures on nesting beaches affecting hatchling sex ratios, sea level rise, storm frequency and intensity affecting nesting habitats, etc.).

International Name: Ponds of the Southeast Peninsula

Area: 315 ha

KBA Criteria[17]: The site has been identified as an Important Bird and Biodiversity Area based on the presence of: Significant populations of species known only to be found in a particular biome and/or significant regional/sub-regional populations of trigger species.

Site description: The southeast peninsula is composed of low hills, eight salt ponds, coastal cliffs, and beaches. It is approximately 15 kilometers long and a road runs its length. The peninsula widens towards the southeastern tip to approximately 4 kilometers wide, although the narrowest northern section is less than one kilometer wide. Tourism is concentrated in the northern section of the peninsula, which is dominated by resorts, a golf course, and restaurants. Similar developments are expected to expand southward. Ponds of importance to birds on the peninsula include Greatheeds Pond and beach, Half Moon, Friar's Bay, Great Salt, Major's Bay, Mosquito Bay, Little Salt, and Frigate Bay Ponds. The boundaries would be limited by an area thirty meters from the high water line of each pond.

Key biodiversity: Least Terns nest at three sites on the Southeast Peninsula. A survey in 2004 revealed that Mosquito Bay Pond has 20 Least Tern pairs, Great Salt Pond has 27 pairs, and Greatheeds Beach (which is just north of the peninsula) has 18 pairs. Although St. Kitts' population of 65 pairs meets the Important Bird Area requirements, there is no one site where concentrations are sufficient to classify as an IBA. Because Least Tern colonies have previously been recorded at other nearby sites, indicating possible movement between breeding sites, the entire Southeast Peninsula is proposed as an IBA. Further study is needed to determine the importance of these sites to migrant waterbirds

Non-bird biodiversity: Not applicable.

Populations of IBA Trigger Species[18]:

Species: *Pelecanus occidentalis*; *IUCN Red-list Category:* NR; *Season:* breeding; *Population estimate:* 56 nests

Species: Least Tern *Sternula antillarum*; *IUCN Red-list Category:* LC; *Season:* breeding; *Population estimate:* 65 breeding pairs

[17] https://www.ibat-alliance.org/ibat-conservation/kbafactsheet/m19915

[18] BirdLife International (2017) Important Bird Areas factsheet: Ponds of the Southeast Peninsula. Downloaded from http://www.birdlife.org on 18/02/2017.

Annex 2: Location of the Ponds of the Southeast Peninsula KBA

Annex 3: Carbon Calculations

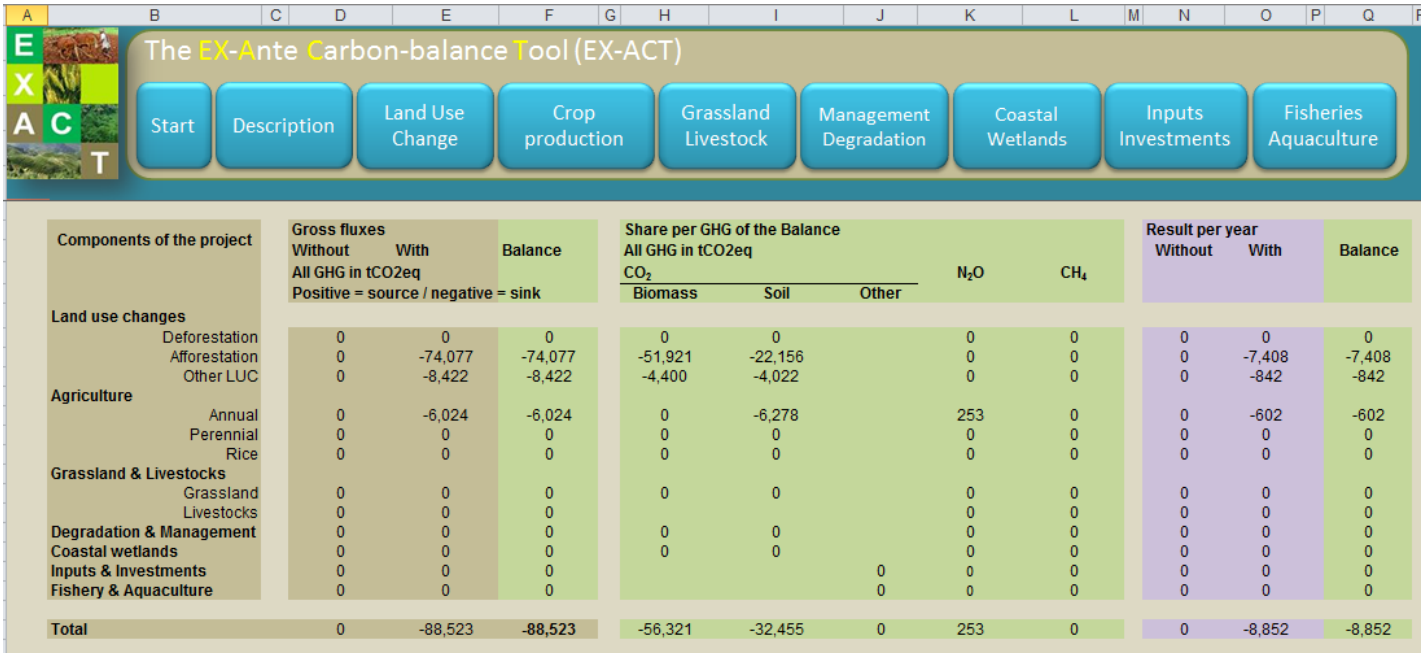
370 ha of degraded land reforested, ensuring sequestration of 74,077 tCO2eq over a 10 year period

200 ha Forest through Assisted Natural Regeneration
150 ha Agroforestry
20 ha Mangrove Forests

300 ha of degraded land restored forannual crop placed under improved SLM practices, ensuring sequestration of 14,446 tCO2eq over a 10 year period

Total: 88,523 tCO2eq over a 10 year period

See FAO EX-ACT Calculations below.



Components of the project	Gross fluxes Without	With	Balance	Share per GHG of the Balance All GHG in tCO2eq CO_2 Biomass	Soil	Other	N_2O	CH_4	Result per year Without	With	Balance
	All GHG in tCO2eq Positive = source / negative = sink										
Land use changes											
Deforestation	0	0	0	0	0		0	0	0	0	0
Afforestation	0	-74,077	-74,077	-51,921	-22,156		0	0	0	-7,408	-7,408
Other LUC	0	-8,422	-8,422	-4,400	-4,022		0	0	0	-842	-842
Agriculture											
Annual	0	-6,024	-6,024	0	-6,278		253	0	0	-602	-602
Perennial	0	0	0	0	0		0	0	0	0	0
Rice	0	0	0	0	0		0	0	0	0	0
Grassland & Livestocks											
Grassland	0	0	0	0	0		0	0	0	0	0
Livestocks	0	0	0				0	0	0	0	0
Degradation & Management	0	0	0	0	0		0	0	0	0	0
Coastal wetlands	0	0	0	0	0		0	0	0	0	0
Inputs & Investments	0	0	0			0	0	0	0	0	0
Fishery & Aquaculture	0	0	0			0	0	0	0	0	0
Total	0	-88,523	**-88,523**	-56,321	-32,455	0	253	0	0	-8,852	-8,852