GEF-8 PROJECT IDENTIFICATION FORM (PIF)

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General Project Information

Project Title	
Resilient Recovery for Nutmeg Agro-Forest Systems in Grenada	
Region	GEF Project ID
Grenada	11658
Country(ies)	Type of Project
Grenada	MSP
GEF Agency(ies):	GEF Agency ID
FAO	751264
Executing Partner	Executing Partner Type
To be determined	Government
GEF Focal Area (s)	Submission Date
Climate Change	6/12/2024
Project Sector (CCM Only)	
Climate Change Adaptation Sector	
Taxonomy	
Land Degradation Neutrality, Land Degradation, Focal Areas, Restoration and Rehabilitation of Degraded Lands, Sustainable Land Management, Convene multi-stakeholder alliances, Influencing models, Demonstrate innovative approache, Non-Governmental Organization, Civil Society, Stakeholders, Community Based Organization, Individuals/Entrepreneurs, Private Sector, SMEs, Local Communities, Beneficiaries, Participation, Type of Engagement, Behavior change, Communications, Knowledge Generation and Exchange, Gender results areas, Gender Equality, Participation and leadership, Capacity Development, Capacity, Knowledge and Research, Ecosystem-based Adaptation, Climate Change Adaptation, Climate Change, Small Island Developing States	
Type of Trust Fund	Project Duration (Months)
SCCF	48
GEF Project Grant: (a)	GEF Project Non-Grant: (b)
863,243.00	0.00
Agency Fee(s) Grant: (c)	Agency Fee(s) Non-Grant (d)
82,007.00	0.00
Total GEF Financing: (a+b+c+d)	Total Co-financing
945,250.00	4,414,560.00
PPG Amount: (e)	PPG Agency Fee(s): (f)
50,000.00	4,750.00
PPG total amount: (e+f)	Total GEF Resources: (a+b+c+d+e+f)
54,750.00	1,000,000.00

Project Tags

CBIT: No NGI: No SGP: No Innovation: No

Project Summary

Provide a brief summary description of the project, including: (i) what is the problem and issues to be addressed? (ii) what are the project objectives, and if the project is intended to be transformative, how will this be achieved? iii), how will this be achieved (approach to deliver on objectives), and (iv) what are the GEBs and/or adaptation benefits, and other key expected results. The purpose of the summary is to provide a short, coherent summary for readers. The explanation and justification of the project should be in section B "project description".(max. 250 words, approximately 1/2 page)

In Grenada, nutmeg agroforests are high-value commodities integral to the country's socio-economic development. These ecosystems provide essential ecosystem services that support the physical, social, economic, and cultural well-being of Grenadian society. However, these terrestrial ecosystems are threatened by climate change which aggravates their degradation and biodiversity loss. Since 2005, the nutmeg sector has been in recovery following the catastrophic hurricane events of Ivan in 2004 and Emily in 2005. A Damage Cost Assessment of Hurricane Emily on the Crop Sub-Sector estimated a loss of USD 903,465 (OECS 2005). The recent passage of Hurricane Beryl in July 2024 across the tri-island state, which resulted in the loss of nutmeg and other key crops, is further evidence of the accelerating and real impacts of climate change on agriculture, food security and dependent livelihoods. This hurricane was the earliest category five hurricane recorded. The formation earlier in the year than ever before is linked to unprecedented warm oceans and sea surface temperatures (SSTs).

The mean annual atmospheric temperature in Grenada has increased by 0.75°C at an average rate of 0.063°C per decade over the period 1901-2021 (World Bank 2024) and SST has risen at an average rate of 0.18 ± 0.16°C per decade during the past 30 years, with a higher-than-average warming in the Southern Caribbean (Climate Studies Group Mona 2020). Analyses based on decadal rainfall observations from the Maurice Bishop International Airport in Grenada indicate that while the rainfall pattern of early season months and late wet season months has remained the same, there has been a decrease in the amount of rainfall observed throughout the year, especially during the late wet season. Between 2009 and 2010, Grenada was impacted by severe drought conditions, which affected several areas of the country's economy. Furthermore, the tri-island nation experienced significant flooding as a result of rainstorms of varying intensities over the past three centuries, with records dating back to 1894 (NaDMA 2014). From 1901 to 2010, the global mean sea level rose by 0.19 m. Mean sea level rise for the Caribbean was estimated at 1.7 ± 1.3 mm/year over the period 1993-2010 (NaDMA 2014). An analysis of average annual extreme climate event occurrences for the period 1980-2020 indicates that 60% were related to tropical storms, 20% to drought and 20% to miscellaneous accidents.

The agriculture sector employs more than 10% of the Grenadian workforce and is the fourth largest source of employment in the country. The earnings from exports (mainly crops and fish) contribute to increasing the ability of highly vulnerable farmers to access food and other necessities for their household. Overall, more than 40,000 people, representing about 40% of the population, depend on agriculture for their livelihood. There are 9,206 farmers with the majority participating in small-scale activities on approximately 1.03 hectares of land (GoG 2015). In a recent 2024 assessment, 1,070 farmers were registered as nutmeg farmers on 1,218 farms with an average size of 6 acres (FAO 2024).

Specifically for nutmeg production, climate variability and extreme weather events have contributed to the prevalence of crop diseases such as nutmeg wilt, more frequent flooding events, water insecurity, and loss of productive lands via erosion and saltwater intrusion in coastal aquifers. These shocks negatively impacted farming livelihoods, resulting in reduced land productivity, loss of crops, lower yields and, in turn, loss of income to farmers. Furthermore, these impacts disproportionately affected women farmers and women involved in other nutmeg-dependent livelihood activities such as the sorting and grading of nutmeg and the production of value-added goods, for example, spice baskets, soaps, medicated ointments, nutmeg oil and nutmeg jams, to name a few. As the majority of farmers within Grenada are small-scale farmers and operate in rural areas with high levels of poverty, these impacts will continue to undermine their livelihoods, exacerbating their vulnerability to climate shocks.

The above-mentioned climate change shocks are further compounded by **local institutional barriers, namely** i) human, technological and policy constraints that foster a limited enabling environment to support climate resilience; ii) fragmented data and a siloed approach to data and information management, access and use, which impedes evidence-based decision making to support climate adaptation at the landscape and community level and iii) limited knowledge and capability in climate-smart agriculture and conservation practices amongst farmers, which can drive unsustainable farming practices that reduce climate resilience. These barriers directly and indirectly undermine farming livelihoods, increasing farmers' vulnerability. These interconnected and reinforcing dynamics are persistent problems that warrant urgent attention to foster climate adaptation and transformation of nutmeg production systems and small-scale farming livelihoods.

This project has an overarching objective to enhance the resilience of nutmeg agroforest ecosystems and livelihoods through the promotion of integrated climate-resilient and biodiversity-friendly nutmeg production and restoration. With that in mind, the project will address the abovementioned barriers by i) strengthening the enabling environment for climate change adaptation through addressing policy gaps, capacity building and improving coordination across state agencies responsible for the management of agroforests; ii) improving evidence-based decision-making to support climate change adaptation through ICT solutions such as a management information system to enable sharing and access of climate, land and agriculture-related data as well as an early warning early action system for pest and disease and iii) strengthening the capacity of small-scale nutmeg farmers taking into consideration the specific needs of women and improving their livelihoods through knowledge and skills training in ecosystem-based adaptation, nutmeg restoration and other conservation practices within sustainable land management.

Overall, these interventions address **key priority needs of** farming communities and state support institutions, in line with Grenada's current National Adaptation Plan (NAP). The NAP identifies nutmeg among the important crops most vulnerable to climate change and therefore priority for adaptation. This project will invoke the sustainable transformation of institutional operations and farming livelihood practices in support of ecosystem-based adaptation, providing both state actors and small-scale farmers with the tools and skills to better adapt to climate impacts.

Indicative Project Overview

Project Objective

To enhance the resilience of nutmeg agro-forest systems and ecosystems through the promotion of integrated climate-resilient and biodiversity-friendly nutmeg production and restoration.

Project Components

1. Strengthening the enabling environment for climate change adaptation and resilient ecosystems and livelihoods

Component Type	Trust Fund
Technical Assistance	SCCF-A
GEF Project Financing ($)	Co-financing ($)
286,601.00	3,700,000.00

Outcome:

Outcome 1.1: Improved capacity of institutions to mainstream climate change adaptation in key policies and interventions.

Project indicator 1: Number of policies adopted to strengthen climate adaptation.

Project indicator 2: Number of stakeholders with knowledge and expertise on climate adaptation and biodiversity conservation in agrifood systems overall and agroforests specifically.

Output:

Output 1.1.1: Comprehensive vulnerability assessment of Grenada's agrifood systems (incl. focus on nutmeg production and value chain). Policy options for climate change adaptation developed.

Outputs 1.1.2: Inputs provided to ongoing policy and governance strengthening processes and programs to mainstream climate change adaptation, targeting key national policies*.

Output 1.1.3:

A comprehensive capacity-building programme for monitoring and supporting climate adaptation within agriculture and forestry sectors, targeted toward key officers, decision-makers and policymakers and including decision-support tools developed and implemented.

Output 1.1.4: Implementation of a central Management Information System (MIS) to enhance evidence-based decision-making amongst key agencies and stakeholders.

* Key policies and plans to be considered are the National Agriculture Plan (2015-2030); National Biodiversity Strategy and Action Plan (NBSAP); Grenada Protected Area Systems Plan 2009 (Draft); Revised Forest Policy for Grenada, Carriacou and Petite Martinique 2018; National Sustainable Development Plan 2020-2035 Grenada; National Climate Change Adaptation Plan for Grenada, Carriacou and Petite Martinique (2017-2021); National Climate Change Policy (2017-2021); Medium-Term Action Plan for Economic Recovery, Transformation & Resilience 2022–2024; and Grenada Drought Management Plan (Draft).

2. Building resilience to climate change of nutmeg agroforests and key ecosystems

Component Type	Trust Fund
Technical Assistance	SCCF-A
GEF Project Financing ($)	Co-financing ($)
400,000.00	230,000.00

Outcome:

Outcome 2.1: Enhanced adaptive capacity and resilience of nutmeg agroforests, ecosystems and farming livelihoods.

Project Indicator 3: No. of stakeholders that benefited from the EWEAS and training on climate-resilient techniques.

Project indicator 4: Acreage of nutmeg plantations under restoration

Output:

Output 2.1.1:
Implementation of site-specific agro-forest restoration plans to improve climate-resilient nutmeg production in the 236-hectare Annandale Forest Reserve using ecosystem-based adaptation techniques.

Output 2.1.2:
Training programme on ecosystem-based adaptation techniques to support climate resilience and improve productivity of nutmeg agroforests in the Annandale Forest Reserve.

Output 2.1.3: Implementation of a pilot Early Warning Early Action System (EWEAS) for critical pests and disease inclusive of a supporting management framework to coordinate the system.

3. Improving knowledge management and monitoring of climate change adaptation and the enhancement of ecosystem services in terrestrial ecosystems.

Component Type	Trust Fund
Technical Assistance	SCCF-A
GEF Project Financing ($)	Co-financing ($)
55,000.00	43,000.00

Outcome:

Outcome 3.1: Knowledge management and communication strategy to support knowledge exchange relating to climate change adaptation, biodiversity conservation and resilient ecosystems and livelihoods.

Project indicator 5: No. of knowledge management and communication strategies created.

Project indicator 6: No. of stakeholder engagement forums completed for knowledge exchange and dissemination.

Project indicator 7: No. of digital training materials, reports, publications, audio programmes produced on sustainable land management practices that focus on climate smart agriculture, biodiversity conservation and restoration.

Project indicator 8: No. of public awareness campaigns created to sensitise the public on climate change adaptation, terrestrial ecosystems, and ecosystem services.

Output:

Output 3.1.1:

A knowledge management plan and communication strategy that details how knowledge and data will be handled during and beyond the project's lifecycle in accordance with best practices and data ethics guidelines as well as a communication strategy outlines stakeholders' roles, and responsibilities for knowledge sharing and forums for engagement and dissemination.

M&E

Component Type	Trust Fund
Technical Assistance	SCCF-A
GEF Project Financing ($)	Co-financing ($)
43,167.00	

Outcome:

Outcome 3.2: Effective project implementation based on adaptive management

Project indicator 9: No. of M&E targets achieved.

Project indicator 10: No. of mid-term and final evaluations completed.

Output:

Output 3.2.1: A Gender-sensitive project Monitoring and Evaluation (M&E) system.

Output 3.2.2: Execution of a mid-term project review and Terminal project evaluation.

Component Balances

Project Components	GEF Project Financing ($)	Co-financing ($)
1. Strengthening the enabling environment for climate change adaptation and resilient ecosystems and livelihoods	286,601.00	3,700,000.00
2. Building resilience to climate change of nutmeg agroforests and key ecosystems	400,000.00	230,000.00
3. Improving knowledge management and monitoring of climate change adaptation and the enhancement of ecosystem services in terrestrial ecosystems.	55,000.00	43,000.00
M&E	43,167.00	
Subtotal	**784,768.00**	**3,973,000.00**
Project Management Cost	78,475.00	441,560.00
Total Project Cost ($)	**863,243.00**	**4,414,560.00**

Please provide justification

Not applicable.

PROJECT OUTLINE

A. PROJECT RATIONALE

Briefly describe the current situation: the global environmental problems and/or climate vulnerabilities that the project will address, the key elements of the system, and underlying drivers of environmental change in the project context, such as population growth, economic development, climate change, sociocultural and political factors, including conflicts, or technological changes. Describe the objective of the project, and the justification for it. (Approximately 3-5 pages) see guidance here

In Grenada, agriculture is a key sector that plays an important role in the country's socio-economic development. The sector is supported by approximately 9206 farmers with the majority participating in small-scale activities on approximately 1.03 hectares of land (GoG 2015). Globally, Grenada is the second largest producer of nutmeg and a third of the society depends directly or indirectly on the nutmeg sector for their livelihoods (ITC 2010). In recent history, the agriculture sector has experienced three major shocks. In 2004 and 2005, the hurricane events of Ivan and Emily respectively disrupted many agroecosystems, largely nutmeg and cocoa, and were a critical turning point for the agriculture sector. After Hurricane Ivan, it was estimated that 70% of nutmeg crops were destroyed (Robert and Shears, 2008). The total direct and indirect cost of damage to the agriculture sector was placed at USD 903,465 (OECS 2005). Since then, the government has invested in rehabilitating the agriculture sector, with nutmeg plantations being in a state of recovery and stakeholders committed to returning the industry to its glory days. However, the recent event of Hurricane Beryl in July 2024, which resulted in the loss of nutmeg and other key crops (World Bank 2024), underscored the vulnerability of the sector and the urgent need for climate adaptation measures to better support small-scale farmers and attenuate the risks posed by climate change and extreme weather events.

Vulnerability within a system refers to its 'propensity or predisposition to be adversely affected' by climatic events, encompassing "sensitivity or susceptibility to harm and lack of capacity to cope and adapt" (IPCC 2022, p.5). In the context of nutmeg agroforest systems, this vulnerability is shaped by the exposure, sensitivity, and resilience of these social-ecological systems to climatic variability and extreme weather events. Consequently, both social and bio-physical factors play a critical role in determining the extent of the impact experienced by these systems. In Grenada, social factors such as rural poverty, limited knowledge and awareness of climate change impacts among farmers, unsustainable farming practices driven by cultural norms and values, weak institutional capacity, and insufficient financing for livelihood adaptation contribute significantly to vulnerability. Biophysically, the topography of lands plays a role in the vulnerability of nutmeg agroforests. As most agroforests in Grenada are in steep to moderately steep mountainous regions, they are at increasing risk of erosion, landslides and excess runoff caused by extreme weather events (GoG 2017). Other biophysical factors, including poor soil quality, biodiversity loss, water scarcity, and land degradation, also exacerbate vulnerability within the social-ecological system and the challenges faced by farming communities (Chandool et al., 2023). Climate change further intensifies these factors, perpetuating a cycle of vulnerability for small-scale farmers. Climate-resilient development, therefore, entails transforming social-ecological systems to transform and strengthen their adaptive capacity through "actions enabled by governance, finance, knowledge capacity building and catalysing conditions" (IPCC 2022, p. 6).

While nutmeg agroforest systems support many small-scale farmers, building socio-ecological resilience via climate change adaptation is a critical issue that demands attention. The low adaptive capacity of agroforest systems can lead to low ecological functioning, for example, due to the impact of pests and disease, thereby reducing the quality of services and benefits people derive from nature. Low adaptive capacity also fosters higher levels of livelihood insecurity and poverty, especially among women. The underlying drivers of change within agroforest social-ecological systems in Grenada result from system, institutional and resource factors

that are interconnected and have consequences on the system's vulnerability and ability to cope with climate impacts. These interconnected dynamics are illustrated in the theory of change (Figure 2).

System Drivers

The resilience of island terrestrial systems refers to their ability to maintain or recover their functioning in the face of disturbances. One of the greatest disturbances that island terrestrial ecosystems face, which shapes their resilience is climate change. In the context of Grenada, climate change impacts are increasingly becoming evident over time. These impacts have manifested throughout the years in increased temperatures, longer periods of droughts, increased weather events and intensity of hurricanes, which alters conditions within agroterrestrial systems such as species distribution, pests and disease prevalence, erosion, habitat degradation and crop loss (Daniel et al., 2023; Chandool et al., 2023). The recent passage of Hurricane Beryl (the earliest category five hurricane recorded) across the tri-island state is evidence of the accelerating and real impacts of climate change on nutmeg, food security and agriculture livelihoods (CARICOM 2024). The Government of Grenada has reported that key short and long-term crops, including nutmeg, have been lost in the aftermath and that the sector's focus in the recovery phase is to work with farmers to restore farms and crops. As a result, this project is timely as the interventions proposed will support the government's agenda of nutmeg recovery and the introduction of climate-resilient practices in the face of climate change.

Like other Caribbean Small Island Developing States (SIDS), Grenada's sensitivity to climate change places its economy and people in a highly vulnerable position. Grenada's sensitivity can be attributed to its small size and topography, the location of communities and economic hubs predominantly along the coast, an economy that is dependent on climate-based activities such as agriculture and tourism, and high levels of poverty (25% of the population) (Taylor et al., 2018). As climate change impacts are projected to intensify throughout the Caribbean region, Grenada's sensitivity will increase unless serious adaptation interventions are undertaken to boost resilience.

Global climate models have projected that regardless of the scenario, an increase in global surface air temperature of 1.5°C can be a reality (Daniel et al., 2023). While Caribbean SIDS have advocated through COP 21 and the Paris Agreement that this increase should not be exceeded before 2100 (IPCC 2018, Taylor et al., 2018), the stark reality is that this threshold could be crossed between 2030 and 2052 (IPCC 2018). For the Caribbean, the latest IPCC report projected that under the highest emission baseline scenario (RCP 8.5), the region could experience a temperature increase of 1.2°C for the period 2040-2060 and an increase of 3°C between 2080-2100 (Mycoo et al., 2022). Under the moderate emission baseline scenario (RCP 4.5), between the period 2080-2100, the Caribbean region is projected to have a temperature increase of 1.6°C (Mycoo et al., 2022). With the general trend of global temperature increase, sea level rise in the Caribbean region is predicted to reach or surpass one metre by 2100 (Climate Studies Group Mona 2020).

Scenario models under 1.5°C and 2°C temperature increases have predicted variations in rainfall for the Caribbean. For Grenada and the remainder of the southeastern Caribbean, there is a general trend of reduced rainfall and a drying climate, with a rise in hot and dry days (Climate Studies Group Mona 2020; Taylor et al., 2018). Overall, the Caribbean region is projected to experience more moderate to severe droughts, with

approximately a 17% increase under 1.5°C and a 26% increase under 2°C (Taylor et al., 2018). Within this decade, it is expected that the wet season will show signs of drying in the Caribbean (Climate Studies Group Mona 2020). Coupled with predicted changes in temperature, the region can anticipate an increase in the intensity of hurricanes in the future (Climate Studies Group Mona 2020).

These climatic changes will introduce stress to agroforest systems and exacerbate the latent vulnerabilities of the livelihoods and communities dependent on these systems within Grenada. Changes in rainfall and temperature can cause delayed seasons, impacting fruit production in forests (Daniel et al., 2023). The projected climate variability for nutmeg production can shift the system to higher elevations (Roberts and Shears 2008). This can result in a disruption to the water balance across the watershed leading to lower water availability for downstream users (Roberts and Shears 2008). As land is limited in Grenada, shifting cultivation to higher altitudes could increase competition for already scarce land resources and foster indiscriminate land conversion in the process, which further compounds climate impacts. Competition for land at higher elevations could also drive some farmers out of their livelihoods. Higher temperatures can lead to the proliferation of existing crop diseases such as nutmeg root rot, nutmeg wilt and thread blight. Lower rainfall and a shift to drying conditions can lead to reduced yields in the future. In addition, an increase in hurricane intensity places the entire nutmeg production system at risk of crop and income losses. The impact of climate change on nutmeg agroforests are further depicted in Figure 1.

Climate change exacerbates other immediate human-induced drivers of change in Grenada's terrestrial systems, such as habitat degradation and loss, as well as overexploitation (Nelson et al., 2023). The destruction of habitats in terrestrial systems, which causes their degradation and loss, results from a myriad of factors. Deforestation for the purposes of agriculture expansion coupled with intensive farming and unsustainable land management practices (e.g. clear-cutting, overuse of agrochemicals, farming on steep slopes) are major causes of habitat degradation and loss (Chandool et al., 2023; Nelson et al., 2023; GoG 2015). These unsustainable practices are reinforced when land tenure becomes untenable for farmers as they are forced to find new lands, which leads to forest encroachment (Chandool et al., 2023). Conversion of forests not only for agriculture but also to other land uses (e.g., urban, tourism, residential) contributes to forest fragmentation and drives habitat degradation and loss (Chandool et al., 2023). Pollution from unsustainable agricultural practices in the form of agrochemical and sediment runoff also negatively alters nutrient soil cycling and freshwater quality. (Chandool et al., 2023; Nelson et al., 2023). Overexploitation is often underpinned by local norms, values and practices in terms of resource use, which must be addressed. These drivers reinforce each other to contribute to biodiversity loss and the deterioration of ecosystem services, making agroforestry practices more challenging. Climate change is expected to amplify these drivers as drying conditions, temperature increases, and intense hurricanes can worsen conditions that lead to excess erosion, agrochemical pollution, forest fires, agroforest and wildlife loss.

Institutional & Resource Drivers

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At the government level in Grenada, there is a dominant sectoral-based approach to the governance of terrestrial ecosystems, which can lead to fragmented coordination and inefficiencies in the sustainable management of agroforests in Grenada (Nelson et al., 2023). As a result, conflicting policies, perverse incentives to farmers, and limitations in data access and knowledge sharing between key agencies arise, further compounding knowledge and data gaps to support monitoring, conserving, restoring and financing

agroforests to ensure they are sustainable and resilient (Nelson et al., 2023). Evidence from Grenada has shown that agriculture policies can compete with sustainability agendas. For example, policies that enable the cheap importation of plant material have contributed to biodiversity loss through the dependence on foreign plant genetics and the introduction of invasive alien species and diseases (FAO 2016, Nelson et al., 2023).

Policy and legislative gaps concerning biodiversity, resilience, and ecosystem services further compromise the enabling environment for protecting terrestrial systems in Grenada. These drawbacks, combined with a lack of data (e.g. downscaled climate data, terrestrial species baseline, ambient water quality, ecosystem valuation etc.) create blind spots in ecosystem management and land use planning, lead to ineffective regulations, and support the proliferation of unsustainable land practices that drive habitat degradation and overexploitation of agroforest resources (Nelson et al., 2023). As a result, these gaps impede effective monitoring and achievement of progress towards the Sustainable Development Goals (SDGs) and Kunming-Montreal Biodiversity targets. Furthermore, the lack of crucial climate-related data can be a barrier to accessing climate financing for adaptation (Belianska et al., 2022). The aforementioned issues are further compounded by a lack of human capacity, constraining coordination, monitoring and data integration required to support evidence-based decision-making (Nelson et al., 2023).

Adaptive Capacity Barriers

These aforementioned drivers are connected to broader governance issues that create knowledge and institutional barriers in the sustainable management of agroforests in Grenada. Climate change is amplifying these gaps placing the national food security and economic development agendas under increasing risk. As nutmeg production is one of the key drivers of the economy and many livelihoods are dependent on these agroforest systems, it is imperative that the resilience of these social-ecological systems is enhanced through the building of adaptive capacity of small-scale farmers and institutions to respond to climate change impacts.

In a recent 2024 assessment, 1,070 farmers were registered as nutmeg farmers on 1,218 farms with an average size of 6 acres (FAO 2024). In general, small-scale farmers in Grenada often lack tenure security, and as such, this hinders their access to resources and their level of investment in climate-smart agriculture practices (Nelson et al., 2023). Regarding land tenure overall, women experience more tenure insecurity, as approximately 77% of men are landowners in Grenada (GoG 2014). Tenure insecurity in agriculture disproportionately impacts women as it disempowers them by limiting their agency to develop their livelihood and placing their welfare in a precarious state. Informality creates further barriers as farmers are excluded from accessing much needed state assistance and incentives which can increase their exposure to livelihood shocks. Within agriculture, other social vulnerabilities, such as non-diversified livelihoods and household income, lack of access to sustainable land management programmes and lack of knowledge on climate change impacts also play a role in farmers' exposure to climate change and extreme weather events.

Social and community vulnerabilities in Grenada such as high unemployment and a large working poor class also impact society's exposure to climate change and extreme weather events. The working poor, which comprises 21.2% of the labour force, has a higher proportion of women often involved in informal work

(UNICEF 2017). Household data on poverty highlight that 48% of poor households are headed by women, with approximately 62% of these female heads having a secondary school education (UNICEF 2017). Considering that women are mainly involved in informal nutmeg related activities such as nutmeg sorting and selling of nutmeg-based products, increasing climate change impacts would only further exacerbate their social vulnerabilities.

At the institutional level, constraints in the enabling environment due to weaknesses in the policy and legislative frameworks and lack of coordination and access to data to support decision-making concerning the sustainable management of agroforests and improving farmers' livelihoods impede the adaptive capacity of the social-ecological system. As such, the project will thus focus on enhancing the adaptive capacity of small-scale farmers and key institutions responsible for nutmeg agroforests. The proposed project identifies the following barriers that warrant urgent attention to enhance the resilience and recovery of nutmeg agroforests and terrestrial biodiversity with regard to climate change and extreme weather events.

- Barrier 1: Limited enabling environment to support climate adaptation, biodiversity conservation and restoration in agroforests. The recently completed Grenada National Ecosystem Assessment 2023 revealed the inadequacies of the enabling environment. Sectoral-based approaches, policy gaps, outdated legislative frameworks, and relaxed enforcement contribute to terrestrial and agroecosystem degradation (Nelson et al., 2023). Several key policies are still in draft format, require updating and need supporting legislative frameworks for implementation[1][1]. Furthermore, overlapping and conflicting policies reinforce these inadequacies and lead to development trade-offs (Nelson et al., 2023). Limited human resources further contribute to the constraints in the enabling environment in terms of providing coordination across key agencies, biodiversity monitoring, data collection and overall management of ecosystems. As a result, weak governance mechanisms emerge for agroforest systems, which provide perverse avenues for over-harvesting and illegal extraction of terrestrial resources, poor land management, and unwanted conversion of terrestrial systems to other land uses, which in turn exacerbates the vulnerability of these socio-ecological systems to climate change.

- Barrier 2: Fragmented data and a siloed approach to data management, access, and use limits evidence-based decision-making. This barrier directly relates to barrier 1 and is a symptom of a limited enabling environment. At the government level, key spatial and temporal data exist that can support **the effective management of agroforests and climate impact monitoring. However, these datasets are held independently by different state agencies** across key ministries in Grenada. As a result, data silos are created, and access to data is facilitated via formal requests to data brokers within and across key ministries. These silos contribute to data duplication and data fragmentation. Data fragmentation can create gaps in analysis and lead to ineffective decision-making concerning livelihood support for climate adaptation, addressing social vulnerabilities, especially relating to women within the system, species management, overexploitation and habitat degradation (Nelson et al., 2023). Data silos also slow down decision-making and can impede early action regarding critical threats (e.g. pests and disease) to nutmeg agroforests. This, in turn, weakens institutional capacity and can create policy gaps, foster inadequate adaptive solutions to support livelihoods, enhance agroforest resilience and engender biodiversity conservation (Nelson et al., 2023). Addressing this barrier is, therefore, key to strengthening evidence-based decision-making.

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- Barrier 3: Limited knowledge and capability in ecosystem-based adaptation to minimise impacts from climate change, support restoration and increase productivity in nutmeg agroforest systems. The KAP for Grenada reveals there is still room for strengthening public awareness on the synergies across environmental conditions, human actions and climate change, with approximately 62% of respondents preferring access to more information on climate change (Fontenard 2016). This existing knowledge gap further exposes the Grenadian society to climate change impacts and contributes to their vulnerability. Thus there is an urgent need for environmental awareness and public sensitisation on climate change. Critical knowledge gaps amongst farmers, forestry and extension officers on ecosystem-based adaptation can perpetuate business-as-usual practices in farming livelihoods. A lack of understanding of the role, benefits and tradeoffs of conservation agriculture, integrated pest management (IPM), climate-smart agriculture for biodiversity and climate adaption, and how to implement best practices effectively, can undermine the resilience of agroforests and dependent livelihoods in the long run. Filling this knowledge gap and building general environmental awareness is key to shifting norms, values and practices within agroforestry and, more broadly, to the general public to engender environmental stewardship.

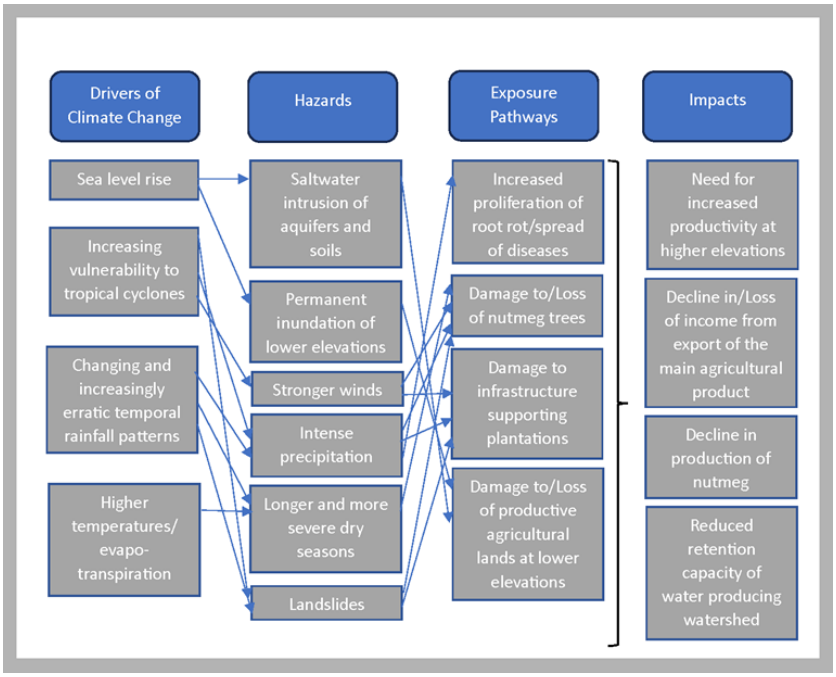

Figure 1: Climate change drivers and impacts on nutmeg agroforest systems

II. Project Aim, Objectives and Justification

Unless special attention is given to the above-mentioned barriers, the adaptive capacity of this social-ecological system will continue to be limited under the current business-as-usual operation of the system. As the nutmeg sector is still in the recovery phase, and simultaneously highly vulnerable to climate change impacts, there is an urgent need to protect Grenada's key economic driver proactively. The recent devastating impact of Hurricane Beryl is evidence of the accelerating and real impacts of climate change on nutmeg, food security and agriculture livelihoods. As a result, this project is timely as the interventions proposed will support the government's agenda of nutmeg recovery post-Beryl in the face of climate change. Thus, **the project aims to enhance the resilience of nutmeg agroforest systems and ecosystems through the promotion of**

integrated climate-resilient and biodiversity-friendly nutmeg production and restoration. The project will adopt a whole-of-society approach to achieve meaningful change from the local to national level. The project activities will **focus on landscape and institutional interventions that support the resilience and recovery of nutmeg agroforest systems** with the following objectives in focus:

- To improve **institutional adaptive capacity** through the strengthening of policy and legislative frameworks to include climate change and ecosystem-based adaptation considerations.
- To strengthen the adaptive capacity of small-scale farmers through the **development of skills and knowledge** in climate-smart agriculture and sustainable farming practices.
- To improve ecosystem health and **enhance the ecosystem services** to mitigate the impact of climate hazards.
- To **strengthen the evidential basis for adaptation planning** by improving knowledge management through the delivery of ICT solutions to improve cross-sectoral data sharing, knowledge services to farmers and the monitoring of pests and disease.

III. Project Stakeholders and Beneficiaries

As this project is based on a whole-of-society approach, the project will benefit from diverse stakeholder engagement. The proposed project will draw on the knowledge base and expertise of stakeholders in the fields of agriculture, gender affairs, forestry, nutmeg production, biodiversity, climate adaptation, ecosystem and land management. These stakeholders will represent various spheres of activities from the state level, community, civil society, private sector to academia. At the state level, the project will involve the Ministry of Economic Development, Planning, Tourism, ICT, Creative Economy, Agriculture and Lands, Fisheries and Cooperatives; the Ministry of Mobilisation, Implementation and Transformation; the Ministry of Climate Resilience, the Environment and Renewable Energy and the Ministry of Community Development, Housing and Gender Affairs. State agencies and regulatory bodies such as the National Disaster Management Agency, Grenada Meteorological Services, Pesticide Control Board, the Marketing and National Importing Board and other agencies involved in agriculture and forestry will also form part of the stakeholder partnership.

The project will target both formal and informal small-scale nutmeg farmers farming in the rural Annandale Forest Reserve, nutmeg processors those involved in other nutmeg-dependent livelihood activities. Both formal and informal farmers within the Annandale Reserve are exposed to the same level of biophysical threats due to the topography, soil and water conditions within the Reserve. However, informal farmers tend to have a higher degree of vulnerability due to the socio-economic barriers their informal status create in their livelihood compared to formal farmers. While nutmeg farming is male dominated, the project will target at minimum 50% women farmers[2][2], which will include female nutmeg farmers, processors and those involved in other nutmeg-dependent livelihood activities. The project will work with the Grenada Development Agency (GRENCODA) and the Grenada Network of Rural Women Producers to integrate as many women farmers, processors and those involved in other nutmeg-dependent livelihood activities in the project.

The project will also collaborate and leverage the expertise of other civil society organisations such as the Grenada Co-operative Nutmeg Association, the Grenada Cocoa Association, the Northeast Farmers Organisation, and the Grenada National Organisation of Women. The project will also integrate representatives from local communities surrounding the Annandale Forest and private landowners. In addition, the project leverage private sector actors involved in nutmeg processing and other businesses that are part of the nutmeg value chain.

Strategic partnerships are expected to be established with local and regional academic institutions such as St. George's University, the Faculty of Food and Agriculture at the University of the West Indies (UWI) and the Caribbean Agricultural Research and Development Institute (CARDI). The project will also forge linkages with regional and international organisations involved in ecosystem-based adaptation projects in the Caribbean, such as the Caribbean Natural Resources Institute (CANARI) and the United National Environment Programme (UNEP), to increase regional and global impact. Through diverse stakeholder participation, the project will benefit from synergies that improve ecosystem services, strengthen institutional adaptive capacities, generate livelihood benefits, and foster an appreciation for agroforestry (relational values) within Grenadian society.

This project's expected beneficiaries include diverse actors, from **government stakeholders** involved in ecosystem governance, climate adaptation, and agriculture services and development to **small-scale nutmeg farmers** (with a key focus on women farmers, processors and those involved in other nutmeg-dependent livelihood activities) within the Annandale Forest Reserve and **surrounding local communities**.

Government stakeholders will benefit from the intended skills training to improve coordination and ICT solutions to strengthen their capacity to monitor and respond proactively to existing and future climate change-related threats. Moreover, the strengthening of the policy and legislative frameworks will empower the government stakeholders to carry out international obligations and national mandates on climate change responsiveness and livelihood protection, especially for women involved in agriculture, biodiversity conservation, and the enhancement of ecosystem services. [3][3]

The project will directly benefit small-scale nutmeg farmers by enabling them to access climate-smart agriculture techniques, conservation practices, and field training to enhance their resilience to climate change. The project promotes gender equity as women farmers, processors and those involved in other nutmeg-dependent livelihood activities will be empowered via access to these knowledge resources that will safeguard their livelihoods, increase their output, and improve their household income and food security. The envisioned farmer reporting platform will empower women farmers, processors and those involved in other nutmeg-dependent livelihood activities particularly, as it will lower the barrier to communication and access to knowledge resources. As the reporting platform will be scaled-up in the long run to serve other farmers outside of nutmeg farming, the information provided by women farmers, processors and those involved in other nutmeg-dependent livelihood activities will enable women to be better prepared to adapt to climate-related events and extreme weather, thereby reducing their vulnerability.

Furthermore, the project is expected to create positive spillover effects for local communities surrounding the Annandale Forest Reserve via the enhancement of ecosystem services. Through ecosystem-based adaptation, the promotion of sustainable farming practices and the restoration of nutmeg forests will improve water catchment and soil quality. This, in turn, will help minimise soil erosion, landslides, and flooding, thereby reducing the vulnerability of nearby communities to climate-related hazards. Additionally, the project will actively engage with local communities through knowledge sharing, emphasising the project's goals and the broader significance of agroforestry with regards to climate change. The objective is to foster a sense of stewardship and responsibility among local communities. Moreover, local communities will benefit from the relational values that arise from their connections to the Annandale Forest Reserve, deepening their relationship with the land and its ecosystems.

IV. Alignment of proposed project with PAST and ongoing projects

Several policies and agricultural project investments have been made in Grenada to address climate change, biodiversity and sustainable land management within the agriculture sector.

Government initiatives

Initiative	**Year**	**Description**
National Spice Replanting Project	2022/ 2023+	The objective of the project was to have 100,000 plants, specifically nutmeg, cocoa, bois bande, pimento, cinnamon, sapote, and tonka bean, under cultivation by various associations (nutmeg, other spices and cocoa) and schools within 12-months. Project activities included, 150 farmers establishing or rehabilitating 150 acres of land with spices, 100 households being given a spice tree to plant and celebration of National Day of Replanting on 29 November 2023. This project will continue to restoration work done for nutmeg afro-forests and promote technological innovation to improve disaster management regarding pests and disease, knowledge exchange between farmers and state agencies and overall data access for decision-making.
Grenada National Land Policy (Draft)	2021	The Policy outlines the measures that the Government of Grenada intends to implement to ensure that: (a) the land and natural resources of the country are soundly managed for the benefit of present and future generations; and (b) the resilience of ecosystems, which is threatened by

Initiative	Year	Description
		climate change and human activities, is enhanced (where possible) through sound management practices. The activities of this project, specifically strengthening the enabling environment for climate change adaptation and resilient ecosystems and livelihoods, will contribute to achieving the objective of the policy for achieving and maintaining sustainable land management to support social and economic development.
National Sustainable Development Plan	2020-2035	The Plan attaches great importance to food security, environmental sustainability, climate resilience, hazard risk reduction and energy security and efficiency. The activities of this project will contribute to the Plan's goal for Environmental Sustainability and Security by improving climate resilience and reducing hazard risk.
Second Nationally Determined Contribution (NDC)	2020	In the 2nd NDC, Grenada commits to reducing its greenhouse gas emissions by 40% by 2030 (relative to 2010), by focusing on the energy, forestry, waste, and cooling sectors, and leveraging mitigation benefits of adaptation actions. This project will contribute to the target by supporting the rehabilitation of degraded agroforest and integration of sustainable land management practices that support conservation and build climate resilience within agroforests.
Revised Forest Policy	2018	Grenada's revised Forest Policy recognizes the important function of the country's forest resources in the context of climate change. This is reflected in its Objective 2 "To manage forest resources to build Grenada's climate change resilience implementing appropriate climate change adaptation and mitigation actions" and Objective 4 "Maintain, enhance and restore the ability of forests to provide goods and services on a sustainable basis, emphasising co-management approaches." This project will contribute to the objectives by the restoration of degraded agroforest systems and technological innovation to improve disaster management with respect to pests and disease, knowledge exchange between farmers and state agencies and overall data access for decision-making.
National Climate Change Policy	2017-2021	The Policy provides the framework for steering an efficient and effective integration of adaptation and mitigation in all climate relevant sectors, to be accomplished through eight (8) objectives.

Initiative	**Year**	**Description**
		This project will contribute to the Policy's objective of "Building climate resilience in the following priority thematic areas: water supply and sewage management; 'agriculture, agri-business and food security'; biodiversity and ecosystems; human health and coastal zone management.
National Climate Change Adaptation Plan	2017	The Plan provides a strategic, coordinating framework for building climate resilience in Grenada, recognising the need to develop the enabling environment for climate change adaptation as well as programmatic priorities. This project will contribute to the Plan's goals of "Strengthened institutional structure to support coordination, integration and implementation of climate change adaptation action" and "Improved management and conservation of protected areas and other key ecosystems areas."
National Agriculture Plan	2015-2030	The Plan provides the framework for the development of the agriculture sector through the strengthening of linkages with other economic sectors and the alignment of national polices with regional and international policies and agendas for sustainable development. One of the main priorities of the Plan is "To strengthen resilience capacity the sector." This project will contribute to achieving the priorities of the Plan by building the resilience capacity, at the institutional and landscape level, of the agroforest system as well as the nutmeg farmers to cope with environmental and climate stressors.
Grenada Food and Nutrition Security Policy and Plan of Action	2013-2018	The mission of the Policy is to promote sustainable and permanent food availability, food accessibility, food utilization/nutrition adequacy, and stability food supply for all Grenadians through integrated and well-coordinated multi-sectoral measures/initiatives at all levels of the Government and through the active involvement of civil society and the private sector. This project will contribute to achieving the goals of the Plan, specifically Food Availability Policy Goal 1 'Conserve the natural resources and meet the challenges of a changing climate,' Policy Goal 2 'Position our domestic agriculture to be innovative, competitive and value added driven to contribute to food and nutrition security in Grenada' and Policy Goal 3 'Increase domestic and export demand for local agricultural produce and products'.

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Other initiatives

This project recognises the importance of building on complementary ongoing, completed, and planned projects and collaborative efforts in improving the resilience of agroforestry systems and enhancing the livelihoods of those dependent on nutmeg agroforestry. As such, the project prioritises forging strong linkages with ongoing agroforestry, sustainable land management, and climate-related agriculture projects both locally and regionally to leverage synergies and increase global impact. These projects include the FAO-funded Development of National Land Banks for Improved Food and Nutrition Security and Land Administration in Grenada, St. Lucia and St. Vincent and the Grenadines, and the GEF-funded Caribbean SOILCARE project.

- *FAO-GEF funded "Gender-responsive climate-smart agriculture food systems in the Caribbean (GCAF Caribbean)" Project (on-going)*: The $10 million (USD) project focuses on strengthening the enabling environment to be gender-responsive, supporting women farmers, processors and those involved in other nutmeg-dependent livelihood activities and youth farmers in enhancing livelihood resilience via climate-smart technologies, organisational capacities, and access to markets and finance. The proposed project can integrate the products and decision-support tools developed to facilitate the adoption of gender-responsive climate-smart technologies, innovations, and practices.

- *World Bank (WB)-funded "Food Security Enhancement Project (on-going)*: The project provides direct support to farmers and fisherfolk, thereby reducing reliance on food imports and cutting food costs. Key components include: increasing production support for crops, livestock, poultry and fisheries; providing equipment and training; promoting sustainable agricultural practices; establishing central storage centres and improving farm road access; and provision of material for spice replanting (cocoa, nutmeg, bay leaf, pimento, cloves). The WB contribution to this is approximately $10 million (USD). The proposed project will fill the gap for this initiative by providing the technical guidance needed to support replanting through the design and implementation of the restoration site plans in the nutmeg agroforest systems.

- *FAO-GEF funded "Caribbean Small Island Developing States (CSIDS) multi-country soil management initiative for integrated Landscape Restoration and climate-resilient food systems (SOILCARE) Project" (on-going)*: With a GEF investment of approximately $8.2 million (USD) for phase 1, the project focuses on improving sustainable soil and land management across eight (8) Caribbean countries, including Grenada, by addressing policy and data gaps, drivers of land degradation and livelihood opportunities. Synergies and opportunity exist to share expertise exist between the ongoing SOILCARE project and the agroforest project, especially under Component 2 of the proposed project i.e. building resilience capacity of nutmeg agroforest systems. Best practices on climate-smart agriculture and improved sustainable soil and land management from SOILCARE can be applied to the restoration site earmarked under this project. The opportunity also exists for collaboration in establishing the central MIS under Component 2, as the SOILCARE project is involved with establishing soil data to support evidence-based decision-making.

- *International Fund for Agricultural Development (IFAD) - Caribbean Development Bank (CDB) funded "Climate-Smart Agriculture and Rural Enterprise Program (SAEP)" (on-going)*: SAEP seeks to reduce poverty and vulnerability of men and women in rural Grenadian communities through vocational and employment skills training, business development, climate-smart agriculture (CSA) and rehabilitation of rural roads and drainage systems. The program focuses on addressing the adverse impacts of rising atmospheric temperatures, decreasing rainfall during the dry season and heavy rainfall events faced by farmers. The proposed project will provide a target vulnerability assessment for the nutmeg agroforest that can be a useful basis to build on. The proposed project can also pilot innovation and technology for climate-resilience and adaptation in nutmeg agroforest which can then be scaled-up under SAEP.

- *UNDP-GEF funded "Climate-Resilient Agriculture for Integrated Landscape Management" Project (2019-2023)*: The GEF invested approximately $3.7 million (USD) to support the operationalisation of integrated agroecosystem management via biodiversity conservation and enhancing agroecosystem resilience. It promotes the uptake of agroecological practices among farmers to adapt to increasing atmospheric temperatures, changing rainfall patterns, and increasing intensity/frequency of hurricanes. The proposed project can build on the agroecological knowledge developed within farming communities and can replicate and scale up good practices.

- *FAO funded "Development of National Land Banks for improved food and nutrition security and land administration in Grenada, Saint Lucia and Saint Vincent and the Grenadines" Project (2017-2019)*: The objective of the project was improved livelihoods and food security for the populations of Grenada, Saint Lucia and Saint Vincent and the Grenadines. The project budget was $418,000 (USD). There is potential for the proposed agroforest project to improve and build on the knowledge generated on sustainable land management and the expertise of stakeholders from the National Land Bank project.

- *GEF-funded "Implementing a 'Ridge to Reef' Approach to Protecting Biodiversity and Ecosystem Functions within and around Protected Areas" Project (2014-2019)*: This project focuses on enhancing biodiversity and ecosystem functioning of marine and terrestrial protected areas through an integrated ridge-to-reef approach to improve protected area management. The GEF contribution to this project is approximately $3 million (USD). This proposed project will extract relevant lessons learned and build on them.

- *GEF – IFAD funded "Advancing Transformative Agricultural Systems in Grenada through the Promotion of Integrated and Resilient Ecosystem approaches throughout the cocoa value chain (ASPIRE) (concept approved in February 2024)*: The project, with an estimated budget of $3.5 million (USD), and the proposed project can complement each other, as they are both focused on strengthen collaboration and governance frameworks; improving integrated and sustainable management of the agricultural system via large-scale adoption of nature-based solutions; enhancing availability and accessibility of financial resources to drive a sustained food system transformation; and reinforcing knowledge management, innovation and spatial monitoring and evaluation.

- *GCF-funded "AG-ADAPT: Scaling up Climate Resilient Food and Nutrition Security in Grenada" project has* an estimated budget of $20.8 million (USD). Synergies and opportunities for collaboration between the AG-

ADAPT project and the proposed project can be developed as the two (2) projects seek to support the adaptation of climate resilience measures, building resilient ecosystems, including restoration, and enhancing the knowledge and skills of small-scale farmers to adopt climate-resilient practices and technologies.

These projects have made positive contributions to strengthening watershed and protected area management, addressing land restoration and improving farming livelihoods through climate-smart agriculture and other sustainable land management initiatives. Notwithstanding the interventions that have emerged, there is still a need to address siloed government systems and decision-making with respect to ecosystem management. As such, the proposed project has a strong operational, human capacity and technical focus to bridge this gap with particular attention on innovative solutions to support nutmeg production. Two (2) core technical solutions that this project will deliver are a Management Information System (MIS) and an Early Warning Early Action System (EWEAS) to support cross-institution evidence-based decision-making. The project will also build on the activities conducted, best practices and lessons learned from the aforementioned projects to ensure continuity and scaling up of sustainable land management practices and biodiversity conservation within nutmeg agroforest systems.

Given that the objectives of the GEF and GCF are complementary, the GEF drafter for this project will meet with project personnel for the GCF project, during development of the project document, to design initiatives that complement actions under the GCF project. During mobilization of this project and with the guidance of the GEF Operational Focal Point, the Project Management Units of the various projects, will meet to collaborate and ensure synergies amongst the projects.

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[1] Key policies and plans to be considered are the National Agriculture Plan (2015-2030); National Biodiversity Strategy and Action Plan (NBSAP); Grenada Protected Area Systems Plan 2009 (Draft); Revised Forest Policy for Grenada, Carriacou and Petite Martinique 2018; National Sustainable Development Plan 2020-2035 Grenada; National Climate Change Adaptation Plan for Grenada, Carriacou and Petite Martinique (2017-2021); National Climate Change Policy (2017-2021); Medium-Term Action Plan for Economic Recovery, Transformation & Resilience 2022–2024; and Grenada Drought Management Plan (Draft). Some of these policies and plans share linkages and identify common priority areas such as climate-smart agriculture within the agriculture sector. However, there is still room for strengthening the climate-land-biodiversity nexus focus across policies and mainstreaming of ecosystem services. The Grenada Protected Areas Systems Plan 2009 (Draft) urgently needs to be revised to mainstream climate change, ecosystem services and linkages to agriculture.

[2] Estimates suggest that there are 3,500 registered nutmeg farmers in Grenada of which approximately 10% are female (Guppy et al., 2023). The low number of female nutmeg farmers, who are not necessarily located in the Annandale Forest Reserve, mean that there will be a natural gender imbalance within the project. To ensure an equitable gender balance, the project will work with GRENCODA and the Grenada Network of Rural Women Producers to reach out and integrate small-scale women nutmeg farmers, processors and those involved in other nutmeg-dependent livelihood activities including women who do not farm in the Annandale Forest Reserve.

[3] There are two types of beneficiaries anticipated for this project. Direct beneficiaries: 1) Government stakeholders: state actors such as policymakers, specialists and decision-makers from the relevant ministries and state agencies (e.g. Ministry of Economic Development, Planning, Tourism, ICT, Creative Economy, Agriculture and Lands, Fisheries and Cooperatives; the Ministry of Mobilisation, Implementation and Transformation; the Ministry of Climate Resilience, the Environment and Renewable Energy, National Disaster Management Agency, Grenada Meteorological Services and the National Water and Sewage Authority), including but not limited to forestry officers, agriculture extension officers, specialists in pests and disease, climate specialists, land experts and hydrology specialists and 2) Small-scale nutmeg farmers. Indirect beneficiaries: Local communities surrounding the Annandale Forest Reserve

B. PROJECT DESCRIPTION

Project description

This section asks for a theory of change as part of a joined-up description of the project as a whole. The project description is expected to cover the key elements of good project design in an integrated way. It is also expected to meet the GEF's policy requirements on gender, stakeholders, private sector, and knowledge management and learning (see section D). This section should be a narrative that reads like a joined-up story and not independent elements that answer the guiding questions contained in the PIF guidance document. (Approximately 3-5 pages) see guidance here

Project Description

Grenada's nutmeg agroforests provide important ecosystem services that support the physical, social, economic and cultural well-being of the Grenadian society. However, these land systems are under constant threat of degradation due to global processes of climate change and market demand for goods, as well as local processes such as intensive farming, pollution, and land use change. These interconnected and reinforcing dynamics are persistent challenges that produce knock-on effects across Grenada's ecosystems. The theory of change outlined below unpacks the assumptions and implications of the intervention pathways for addressing climate change impacts and biodiversity loss within the project. This project's theory of change also builds on ongoing FAO projects such as the National Agriculture Landbank and the SOILCARE projects. This project acknowledges the importance of addressing land access and tenure insecurity in building ecosystem resilience. The project also recognises the interventions being undertaken via the SOILCARE project and will build on SOILCARE's recommendations for improving sustainable land management across the project sites. Against this backdrop, the project's overarching aim is **to engender meaningful change that strengthens the adaptive capacity of small-scale farmers and state institutions to support the resilience and recovery** of nutmeg agroforest systems from climate change impacts via climate-resilient and biodiversity-friendly interventions in Grenada. As the project unfolds, the theory of change will be periodically updated to reflect any changes in the direction of the project.

I. Theory of Change Logic

The project's theory of change rests on the logic that agroforests are large-scale social-ecological systems and that building their resilience depends on overcoming institutional and knowledge constraints listed in the above-mentioned barriers. It posits a whole-of-society approach to address the impacts of climate change, such as biodiversity loss, land degradation, crop loss and reduced land productivity and output in farming livelihoods. A whole-of-society approach recognises the salient role that state and non-state stakeholders play in co-designing actions and ecosystem-based adaptation responses that lead to transformative changes at the landscape level and across farming livelihoods to enhance the overall resilience of the system and

minimise the disturbances caused by climate change and extreme weather events. As such, the project's impact is directly related to the level of engagement between state and non-state actors within the agriculture sector.

At the state level, it is posited that a shift from siloed thinking and operations in managing terrestrial and agriculture sectors to deliberative cross-sector approaches is critical. These cross-sectoral approaches should address knowledge, skills, data, policy, technology, and communication gaps that impede adaptive capacity building to strengthen cross-institutional capacities that enhance the adaptive capacity of small-scale farmers and the resilience of agroforest land systems. For such a shift to occur, it is important to understand the existing governance structures, policy landscape and human resources to determine where intervention within the system is needed to support climate adaptation. It is anticipated that existing policies will need to be updated, legal frameworks will be amended, and a new data management and use plan will be created to facilitate cross-agency data access. Moreover, for effective ecosystem-based adaptation to occur, it is posited that identified policies and plans must be implemented.

Additionally, to support evidence-based decision-making across state agencies, the project's theory of change acknowledges the role of technology in strengthening institutional capacities to manage and monitor agroforest land systems. It is envisioned that the establishment of systems such as a management information system (MIS) act as a central data repository (for relevant climate, ecosystem, soil, hydrological and land and vulnerability assessment data) to support adaptation planning and disaster recovery and an early warning action system (EWEAS) for pest and disease monitoring will support evidence-based decision-making to provide targeted interventions that support ecosystem and livelihood resilience of nutmeg farmers.

At the community level, the project upholds that climate adaptation relies on collective action involving civil society actors, landowners, small-scale farmers, and other actors involved in nutmeg-dependent livelihoods, both men and women. It is assumed that strengthened participation of local actors via bottom-up collaborative processes, for example, in revising policies and co-designing community adaptation plans, will create visibility for marginalised communities in the governance process. Furthermore, it is posited that when collaborative and social learning spaces are opened to both male and female stakeholders, adaptive capacities are strengthened through knowledge exchange, skills development, and co-design of action plans that support agroforest conservation climate-smart agriculture implementation and opportunities for livelihood diversification.

At the landscape level, it is expected that if small-scale farmers, both men and women, participate in restoration and climate-smart agriculture practices on their lands, their actions will support the recovery of the nutmeg sector, especially in the aftermath of extreme weather events such as Hurricane Beryl. Land interventions that minimise tree loss from climate change impacts will enhance the overall resilience of nutmeg agroforest systems within the project site. The project emphasises the role of women as landowners and land users and the inequalities they may experience in accessing resources for their livelihoods. If women's livelihood needs are addressed, this leads to greater socio-ecological benefits at the farm level. These actions are posited to support local and community adaptation, enhance farm productivity, and improve livelihood sustainability.

The project's success also depends on understanding the existing vulnerabilities within the agriculture sector, with particular attention to the nutmeg sector. In so doing, appropriate strategies that target the social-ecological vulnerabilities of actors within the nutmeg value chain could be devised, improving disaster risk preparedness, adaptive capacities and overall climate resilience within the nutmeg value chain.

Project Assumptions

The success of this project is based on achieving target outcomes to address underlying system, institutional and resource challenges. However, these outcomes are governed by an underlying set of core assumptions that must be met. These assumptions are as follows:

- Assumption A: Small-scale farmers are willing to engage in skills training and implement climate-smart agriculture techniques and conservation practices to cope with the threat of climate change, minimise biodiversity loss and boost their output.
- Assumption B: Government stakeholders are willing to manage and sustain the MIS and use the proposed ICT solution effectively to support decision-making in the sustainable management of ecosystems.
- Assumption C: Government agencies within the agriculture and terrestrial-based sectors are willing to engage in and invest time in skills training to build institutional capacity. As institutional capacities are strengthened, stronger coordination will occur, leading to an increase in cross-agency approaches, projects, and programmes that address ecosystem-based adaptation, biodiversity conservation, and agroforest restoration in terrestrial ecosystems.
- Assumption D: All stakeholders (state actors, farmers, landowners, civil society actors and agro-entrepreneurs) are fully committed to working together to revise policies to include climate change and ecosystem considerations, engage in learning and create response actions that support adaptation, to transform land practices, enhance resilience and restore biodiversity.

Based on the above assumptions, the success of the project can generate manifold positive outcomes that go beyond the scope of the project. These benefits include but are not limited to the updating of knowledge and transformation of behaviours that engender resilience-building and climate adaptation in livelihood practices and business processes, improving livelihood opportunities for small-scale farmers through eco-branding and access to new sustainable markets as well as the mitigation of greenhouse gas emissions from the agriculture sector.

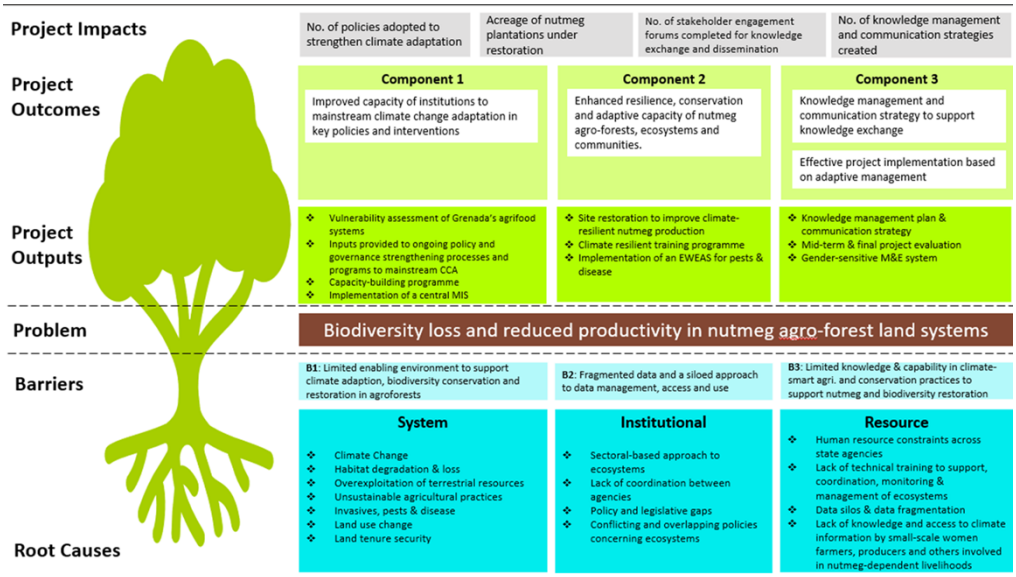

Figure 2: Theory of Change

II. Project Components

The project is conceptualized along three (3) components, which are described below.

Component 1: Strengthening the enabling environment for climate change adaptation, resilient ecosystems and livelihoods

Component 1 predominantly focuses on addressing the shortcomings within the enabling environment, which is a barrier to building adaptive capacities within the social-ecological system **(Barrier 1 & Barrier 2).** It is understood that climate adaptation must be addressed at the institutional level to improve the resilience and recovery of nutmeg agroforest land systems and the farming livelihoods dependent on these systems. As such, it is important to have technological innovation to improve data access for decision-making and to re-shape and enact policies and coordination across relevant agencies[1][4], for meaningful change to occur. The following outputs and outcomes address **Barriers 1 & 2** and the critical institutional and resource challenges that impact the impact sustainability within agriculture in Grenada.

<u>Outcome 1.1. Improved capacity of institutions to mainstream climate change adaptation in key policies and interventions</u>

- **Output 1.1.1:** A vulnerability assessment of Grenada's agrifood systems, with a focus on nutmeg production and the nutmeg value chain. Policy options for climate change adaptation developed. The assessment will document the sector's overall exposure and sensitivity to climate stressors. Attention will be given to the vulnerability of nutmeg agroforest systems and the adaptive capacity of farmers to climate change. In particular, the project will explore the implications on livelihoods from shifting nutmeg cultivation to higher altitudes and outline/recommend future adaptive actions. In addition, special focus will be given to the vulnerabilities and inequalities women farmers, processors and those involved in other nutmeg-dependent livelihood activities face in their livelihoods. Within the scope of the project, vulnerabilities and inequalities will be addressed to ensure that women farmers[2][5], processors and those involved in other nutmeg-dependent livelihood activities will benefit from equal and fair access to knowledge, financing and livelihood opportunities to improve their resilience.

- **Output 1.1.2:** As part of ascertaining the state of institutions in the sustainable management of agroforests, the project will undertake i) a review of relevant policies and legal frameworks and a revision of outdated and draft policies to include stronger linkages to climate change adaptation and ecosystem considerations and ii) a gap analysis of capacity and skills assessment across relevant state ministries and agencies involved in agriculture, forestry, transformation and climate resilience[3][6]. Key policies and plans to be considered that have been identified within the Grenada National Ecosystem Assessment 2023 are the National Agriculture Plan (2015-2030); National Biodiversity Strategy and Action Plan (NBSAP); Grenada Protected Area Systems Plan 2009 (Draft); Revised Forest Policy for Grenada, Carriacou and Petite Martinique 2018; National Sustainable Development Plan 2020-2035 Grenada; National Climate Change Adaptation Plan for Grenada, Carriacou and Petite Martinique (2017-2021); National Climate Change Policy (2017-2021); Medium-Term Action Plan for Economic Recovery, Transformation & Resilience 2022–2024; and the Grenada Drought Management Plan (Draft). For this project, capacities refer to the institutional mechanisms such as financial, data, technological, and organisational roles and procedures across relevant agencies needed to achieve the overarching objective of biodiversity restoration and conservation.

- **Output 1.1.3**: A capacity-building programme and change management plan that fills priority gaps identified in 1.1.2. To improve coordination across state agencies, the project will use the findings in 1.1.2 to a) develop a cross-agency framework to monitor and support climate adaptation interventions within agroforest systems; b) create skills training programmes to equip key actors across the agencies in monitoring adaptation strategies within agriculture and forestry, emphasizing the provision of targeted support services to women involved in small-scale agroforestry[4][7]; and) establish a climate adaptation data management policy and plan to enable cross-agency data access, sharing and use of spatial and temporal datasets relevant for monitoring climate impacts, adaptation interventions and conservation strategies across ecosystems. This output focuses on building capacities for key officers, decision-makers and policymakers across the relevant agencies.

- **Output 1.1.4**: Implementation of a central Management Information System (MIS) to enhance evidence-based decision-making amongst key agencies and government stakeholders[5][8]. This output complements output 1.1.3 in building adaptive capacities amongst stakeholders improving data access and knowledge exchange across stakeholders. The project will focus on two digital products to enhance evidence-based decision-making amongst key agencies. First, a central MIS will be created to enable government stakeholders' access to cross-agency spatial and temporal data (e.g. meteorological data, data on agriculture plots (location, farm use and ownership), farm level productivity, crop loss, land abandonment data, hydrological data, species data, flood assessment etc.) relevant for monitoring climate impacts, adaptation reporting and monitoring of interventions on the ground.

  Secondly, a farm reporting app will be designed and piloted to streamline knowledge exchange between farmers and the relevant agencies[6][9]. Through the app, farmers will be better connected to agricultural extension services and real-time information on weather, bulletins on pests and diseases and their management, and market trends. The app will also provide access to training resources generated from this project and other ongoing projects (e.g. best practices from the SOILCARE project) on climate-resilient techniques and conservation practices to safeguard critical biodiversity. Such a tool will empower women farmers[7][10], in particular, to make informed decisions concerning their livelihoods as it lowers the barrier to communication and access to knowledge resources, thereby promoting gender equity. Other important resources, such as information on livelihood diversification (e.g. eco-certification and agro-processing), subsidies, incentives and government programmes, will be available via the app. Furthermore, the app will enable farmers to report farm issues and provide feedback on adaptation interventions to the relevant authorities. The information provided by women nutmeg farmers, processors and those involved in other nutmeg-dependent livelihood activities can serve to shape gender-responsive adaptation policies and programmes to better meet their needs and reduce disparities encountered in their livelihood. Training workshops will be conducted with all stakeholders to build capacity for using these new systems.

Component 2: Building resilience of nutmeg agroforests and key ecosystems.

Component 2 focuses on resilience capacity building at the institutional and landscape level and primarily addresses the data and knowledge gaps **(Barriers 2 and 3)** that have a direct and indirect impact on the ability of the agroforest system as well as the nutmeg farmers to cope with environmental and climate stressors. As such, this output is centred on restoration of degraded nutmeg agroforest systems and technological innovation to improve disaster management with respect to pests and disease and knowledge exchange between farmers and state agencies[8][11]. Overall, these activities are directed towards biodiversity-positive

and climate-resilient actions at the landscape level and are captured across the following outputs and outcomes.

Outcome 2.1 Enhanced adaptive capacity and resilience of nutmeg agroforests, ecosystems and farming livelihoods.

- **Output 2.1.1**: Implementation of site-specific ecosystem-based adaptation plan to improve nutmeg agroforest. The project aims to support the national agenda of revitalizing the nutmeg sector and improving the country's nutmeg production. Ninety percent (90%), approximately 31,000 hectares, of land in Grenada is privately owned, with most of the remaining State Land being in rural areas (GoG 2021). According to the Government of Grenada, approximately 1,000 hectares of land are under nutmeg and mace cultivation (GoG 2015). The initial design and implementation of site-specific agroforest plans to improve climate-resilient nutmeg production will be executed on a state land parcel, 236-hectare Annandale Forest Reserve. Upon successful implementation of the approach, the project will be expanded to private parcels, estimated at 264 hectares. Best practices and farmers' experiences from the SOILCARE project will also be shared with farmers participating in this project to ensure continuity in improving sustainable land management within ecosystems. The contribution of these site activities will directly:

    - Improve livelihood resilience to climate change via ecosystem-based adaptation measures, which include, but are not limited to, diversified cropping systems, soil and water conservation, biodiversity corridors, and restoration of nutmeg trees. By investing in ecosystem-based adaptation measures, agroforest systems can better withstand the impacts of climate change, such as droughts, increasing temperatures and intense rainfall, while improving productivity. For example, improving soil quality via nutmeg restoration and other practices that enhance soil structure and fertility can reduce weather-induced soil degradation and erosion. This, in turn, lowers the risk of flooding and landslides in surrounding communities.
    - Support action-learning and awareness of climate-ecosystem-biodiversity nexus and how adaptation measures can protect farmers' livelihoods and prepare them for the present and future impacts of climate change.
    - Enable community stewardship and ownership of restoration-based activities.
    - Support awareness of livelihood diversification options such as ecotourism as means for farmers to diversify their income and increase their resilience.

- **Output 2.1.2:** Training programme on ecosystem-based adaptation techniques to support climate resilience and improve productivity of nutmeg agroforests. Once the initial design and implementation of the site-specific agroforest plan is completed in output 2.1.1, a public call will be made for farmers to participate in training under the project. The project will work with GRENCODA, the Grenada Network of Rural Women Producers and the Grenada National Organisation of Women to ensure that a sufficient number of women

are involved in the training. Lessons learned and experiences from the initial effort will be used to design training materials. A capacity assessment, of voluntary farmers, will be conducted to inform the training.

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- **Output 2.1.3:** Implementation of an Early Warning Early Action System (EWEAS) for pests and disease. The success of the EWEAS is dependent on strong coordination and management. As such, the project will identify the relevant stakeholders to coordinate this system as well as develop a management framework to underpin the EWEAS. Furthermore, vulnerability and impact assessments of critical pests and diseases that are a risk to nutmeg farmers' livelihoods will be undertaken. The pest or disease that is most critical to the nutmeg farmers' livelihood will be used as the pilot case for the EWEAS. The project will also support the establishment of relevant datasets and a modelling environment to pilot the EWEAS. The dissemination of information to farmers will be piloted through the farm reporting app (output 1.1.4).

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Component 3: Improving knowledge management, monitoring of climate change adaptation and the enhancement of ecosystem services in terrestrial ecosystems.

Under component 3, the following outcomes and outputs relate to the overall project implementation and knowledge management within the project. This component also focuses on awareness and sensitisation on terrestrial systems, biodiversity, climate change, and unsustainable practices, addressing **Barrier 3**.

Outcome 3.1 Knowledge management and communication strategy to support knowledge exchange relating to climate change adaptation, biodiversity conservation and resilient ecosystems and livelihoods.

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- **Output 3.1.1**: A knowledge management plan and communication strategy. An effective knowledge management plan and communication strategy are core tenets of any project's success. This project will create and implement a knowledge management plan that details how knowledge and data will be handled during and beyond the project's lifecycle in accordance with best practices and data ethics guidelines (e.g. FAIR principles). A communication strategy that supports knowledge transfer, social learning engagement, and pre-emptive action planning at the community level to mitigate drivers of land use change and indiscriminate land use practices will also be created and implemented. The communication strategy will also entail the stakeholders, roles, and responsibilities involved in knowledge capture and sharing. In addition, the forums for engagement, such as (but not limited to) participatory workshops, field training, site clinics, and webinars, as well as other digital and print media that will be used to engage stakeholders, will be outlined together with a time schedule for the delivery of these mediums. The communication strategy will also outline pathways for scaling up successful solutions.

Outcome 3.2 Effective project implementation based on adaptive management.

-

- **Output 3.2.1**: A Gender-sensitive project Monitoring and Evaluation (M&E) system. An effective M&E system is one that is able to respond to the needs of both female and male stakeholders as well as signal when the project needs to adapt in design to changes in the local context. As part of this project, a M&E system will be designed and implemented to assess whether targets are being met, objectives achieved and that both female and male stakeholders' needs are accounted for in the project. Furthermore, the monitoring and evaluation system will be used to ensure that inequalities faced by female farmers in their livelihoods are being mitigated within the project. From the M&E, best practices and lessons learned will be documented to inform future project design.

- **Output 3.2.2:** Execution of a mid-term project review and final project evaluation. To assess the project's success, a mid-term review and a final project evaluation will be undertaken. The reports will synthesize the project's success, best practices and lessons learned, which will be disseminated to all project partners.

III. Additionality: Global Environmental Benefits/Adaption Benefits Which Would Not Have Accrued Without the GEF Project.

The GEF's funding allocation will be used to implement interventions that target enhancing the resilience of agroforest systems and the sustainable transformation of nutmeg production in Grenada. In the absence of this project, benefits derived in terms of climate adaptation and sustainable land management from other GEF-funded projects will result in short-term sustainability gains. Without addressing the fundamental challenges identified in this project that continues to stymie the enabling environment (mainly institutional capacity, data challenges, land degradation, pest and disease mitigation and greening of business operations), benefits accrued from various projects in nutmeg agroforestry will be short-lived. This project adopts a whole-of-society approach that addresses critical challenges at the system, institutional, and resource levels that require urgent attention to ensure that sustainability gains can be maintained in the long run. The additionality generated by the project is summarized below along the following dimensions.

- **Local and Global Environmental Benefits:** The investment from this project into site-specific nutmeg restoration and conservation agriculture will support the restoration of the wider agroforest system and enhance the delivery of nature's benefits to the Grenadian society. As farming practices and waste management improve, ecosystem functioning and services will be enhanced, resulting in improved soil fertility, freshwater systems, agriculture productivity, and the protection and abundance of key local terrestrial biodiversity. Restoration of nutmeg agroforests will also contribute to carbon sequestration and aid in climate regulation. The outcomes and outputs of this project align with the targets of the **Kunming-Montreal Global Biodiversity Framework**, particularly **Targets 2,3, 7, 8, 11, 14, 21 and 23**.

- **Spillover effect:** The investment in this project will accrue additional benefits to society in the form of strengthened relational values, as restored nutmeg agroforests provide an opportunity for recreational

activities and for local residents to learn and participate in biodiversity and conservation. Furthermore, improvements made to agroforestry at the landscape level will support national efforts towards food security.

- **Economic and Livelihood Multiplier Effect:** Further benefits to society include but are not limited to the diversification of farming livelihoods via the creation of new eco-tourism activities and linkages to agro-processing opportunities. In addition, sustainable agriculture can create opportunities for eco-certification and access to new international markets for sustainable products for farmers. The project will ensure that women farmers, processors and those involved in other nutmeg-dependent livelihood activities have access to and share equally in additional livelihood benefits in order to reduce livelihood vulnerabilities. Restored nutmeg agroforests can enable the government to access payment for ecosystem services via REDD+ as well as attract other forms of financing that can support the country's sustainable development.

IV. Stakeholder, Roles and Benefits.

As this project is based on a whole-of-society approach, its success is dependent on stakeholder participation and engagement throughout the project lifecycle. The stakeholders will be diverse, representing both men and women from various institutions who bring to the table their knowledge and experience in the fields of agriculture, gender affairs, forestry, nutmeg production, biodiversity, climate adaptation, ecosystem and land management. These stakeholders will encompass state agencies, regulatory bodies, local communities, landowners, agro-business, civil society groups, and academic institutions. It should be noted that an in-depth stakeholder analysis will be undertaken at the start of the project. It is expected that a project organization chart will be curated, specifying key roles within the project and how collaboration will unfold during the phases of the project. During the PIF phase, the following stakeholders were identified as priority:

- State level: The project will involve the Ministry of Economic Development, Planning, Tourism, ICT, Creative Economy, Agriculture and Lands, Fisheries and Cooperatives; the Ministry of Mobilisation, Implementation and Transformation; the Ministry of Climate Resilience, the Environment and Renewable Energy and the Ministry of Community Development, Housing and Gender Affairs. Representatives from these ministries will form part of the Project Steering Committee. In addition, the project will involve the Pesticide Control Board, Marketing and National Import Board and other state bodies involved in agriculture, climate and disaster management. The Ministry of Mobilisation, Implementation and Transformation will serve as the executing agency due to its mandate to lead the implementation of the Government's transformative agenda, enabling it to coordinate and collaborate with various stakeholders across sectors, which is vital for the whole-of-society approach.
- Community level: The project will bring together nutmeg farmers, private landowners, and local communities.
- Civil society: The project will collaborate with the Grenada Co-operative Nutmeg Association, the Grenada Cocoa Association, and other associations involved in farming (e.g., Northeast Farmers Organisation) and

terrestrial conservation activities. It will also integrate the Grenada National Organisation of Women and local representatives from communities surrounding the Annandale Forest.

- Private sector: The project will involve nutmeg producers and other businesses that are part of the nutmeg value chain.

- Academic and other institutions: The project will also draw on the scientific knowledge base at St. George's University, the Faculty of Food and Agriculture, the University of the West Indies and the Caribbean Agricultural Research and Development Institute. The project will also forge linkages with regional and international organisations involved with ecosystem-based development projects in the Caribbean, such as the Caribbean Natural Resources Institute (CANARI) and the UNEP, to increase regional and global impact.

As stated previously in Section A, the project's beneficiaries will include diverse actors, from government stakeholders to small-scale nutmeg farmers (including women) within the Annandale Forest Reserve and surrounding local communities. Government stakeholders from relevant ministries and state agencies will benefit from the intended skills training to improve coordination and ICT solutions to strengthen their capacity to monitor and respond proactively to existing and future climate change-related threats. Moreover, the strengthening of the policy and legislative frameworks will empower government stakeholders to carry out international obligations and national mandates on climate change responsiveness and livelihood protection, especially for women involved in agriculture, biodiversity conservation, and the enhancement of ecosystem services.

The project will also directly benefit small-scale nutmeg farmers through access to ecosystem-based adaptation practices, conservation techniques, and field training to enhance their resilience in the face of climate change. The project promotes gender equity as women farmers, processors and those involved in other nutmeg-dependent livelihood activities will be empowered through technology (re: farm reporting app) and hands on training that will safeguard their livelihoods, increase their output, and improve their household income and food security. Through the project, women involved in nutmeg farming, processing and other nutmeg-dependent livelihood activities, will be better prepared to adapt to climate and extreme weather threats, thereby reducing their vulnerability.

Furthermore, the project is expected to create positive spillover effects for local communities surrounding the Annandale Forest Reserve via the enhancement of ecosystem services. Through ecosystem-based adaptation, the promotion of sustainable farming practices and the restoration of nutmeg forests will improve water catchment and soil quality. This, in turn, will help minimise soil erosion, landslides, and flooding, thereby reducing the vulnerability of nearby communities to climate-related hazards. Additionally, the project will actively engage with local communities through knowledge sharing, emphasising the project's goals and the broader significance of agroforestry with respect to climate change. The objective is to engender a sense of stewardship and responsibility among local communities. Moreover, local communities will benefit from the relational values that arise from their connections to the Annandale Forest Reserve, deepening their relationship with the land and its ecosystems.

By having diverse stakeholder participation, the project will benefit from a rich knowledge base and strengthened collaboration that helps build the adaptive capacity of stakeholders to respond to changes that impact agroforests, terrestrial biodiversity and nutmeg production. It is believed that active participation, knowledge transfer and social learning amongst stakeholders will improve institutional capacities, fill resource gaps and address critical system challenges (e.g. invasives, habitat degradation, climate change, waste/pollution) within nutmeg agroforestry.

V. Knowledge Generation, Knowledge Transfer, Knowledge Integration and Lessons Learned

Enhancing the resilience of nutmeg agroforest systems requires an effective knowledge management mechanism that underpins the project. This is captured under Component 3 of the project, which focuses on knowledge capture, transfer, and dissemination. The core aspects of the project's knowledge management are discussed below.

- Knowledge capture and sharing: The project will support the creation and dissemination of various knowledge products so that local knowledge, best practices and lessons learned on the field can be easily accessed by local and international audiences. The knowledge management for this project will be guided by the project's knowledge management plan and communication strategy (Output 3.1.1.), which will be developed at the start of the next phase. The latter will guide stakeholders on the types of activities and mediums of exchange (face-to-face and digital) to facilitate progress tracking, knowledge sharing, social learning, and action planning. The former will outline the type of knowledge and data that will be generated, the mechanisms for capture, and the data principles and ethics (e.g., FAIR data principles and the FAO Knowledge Strategy principles), which the project will adhere to ensure integrity in the capture, organisation and sharing of knowledge and data.

- Knowledge preservation beyond the project: Datasets and knowledge products that contain lessons learned from the project will be preserved following the guidelines outlined in the knowledge management plan. The project will benefit from the resources of the FAO Knowledge Sharing Team to ensure that target audiences, i.e., local and global stakeholders and partners, can access knowledge products via appropriate channels. In addition, the project will utilise the FAO's AIMS platform to promote dialogue, exchange, and capacity development across local and global contexts.

VI. Improving Policy and Policy Coherence

A core focus of this project is to improve relevant policies to ensure that key plans and legislative frameworks are aligned with mainstreaming biodiversity, ecosystem values, climate adaptation, and resilience (Component 1). The project recognises that part of strengthening institutional capacity lies in addressing

critical policy gaps that impede stakeholders from creating opportunities and pathways to address key challenges in improving the resilience of agroforest systems. The project will adopt a participatory approach to bridging policy gaps, integrating project stakeholders in the process to facilitate the adoption of sustainable practices. To further improve policy and policy coherence, the project will also rely on FAO guidelines to improve the streamlining of policy components. These guidelines include but are not limited to The Voluntary Guidelines for the Conservation and Sustainable Use of Farmers' Varieties/Landraces; The FAO Strategy on Biodiversity Mainstreaming across Agricultural Sectors; The 2021-2023 Action Plan for the Implementation of the FAO Strategy on Mainstreaming Biodiversity across Agricultural Sectors and Addressing Forestry and Agroforestry in National Adaptation Plans.

VII. Project Innovation and Scaling-Up

The project embraces innovation as a means of driving change that will have a positive impact on biodiversity within agroforest systems in Grenada, the resilience of these systems and the livelihoods and businesses that are dependent on them. The catalyst for innovation lies in the project's whole-of-society approach, which provides the foundation for social innovation to occur within the project. It is anticipated that through stakeholder participation, new ideas, practices and collaborations will emerge to strengthen institutional capacities, reshape participatory governance, improve sustainable land management, co-design policies, create new livelihood opportunities and lay the foundation for innovative modes of financing to support climate adaptation and biodiversity conservation. Apart from social innovation, the project will also engage with technological innovation to strengthen capacities in monitoring and reporting (Component 2). The project will produce ICT-driven solutions such as an EWEAS and a farm reporting app to empower farmers with up-to-date information to improve their productivity. At the state level, the project seeks to address data silos within relevant state agencies by developing a central MIS to enable access and sharing of climate, environmental, agricultural and socio-economic data across agencies. These innovations will be captured as best practices and disseminated per the project's knowledge management plan and communication strategy (Component 3). As the project will involve a diverse group of stakeholders (state, communities, civil society, private sector and academia), best practices and solutions can be brought to scale through their involvement in the project and the transplanting of knowledge, technology and best practices across other ecological sites and agriculture commodities within Grenada. The knowledge management plan and communication strategy will guide the scaling-up of the project's successful solutions under Component 3.

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[1] Relevant agencies include the Ministry of Economic Development, Planning, Tourism, ICT, Creative Economy, Agriculture and Lands, Fisheries and Cooperatives; the Ministry of Mobilisation, Implementation and Transformation; the Ministry of Climate Resilience, the Environment and Renewable Energy and the Ministry of Community Development, Housing and Gender Affairs, the National Disaster Management Agency, Grenada Meteorological Services, Pesticide Control Board, the Marketing and National Importing Board and other agencies involved in agriculture and forestry.

[2] The project will work with GRENCODA, the Grenada Network of Rural Women Producers and the Grenada National Organisation of Women to integrate as many women farmers, processors and those involved in other nutmeg-dependent livelihood activities as possible in the project

[3] The Government of Grenada has a dedicated Ministry of Mobilisation, Implementation, and Transformation, which has the mandate of monitoring and reporting on government projects involved in the transformation of development. It is for this reason this ministry will take on the responsibility of executing the project.

[4] The project will work with GRENCODA, the Grenada Network of Rural Women Producers and the Grenada National Organisation of Women to integrate as many women farmers, processors and those involved in other nutmeg-dependent livelihood activities as possible in the project

[5] Stakeholders here refer to state actors such as policymakers, specialists and decision-makers from the relevant ministries and state agencies (e.g. Ministry of Economic Development, Planning, Tourism, ICT, Creative Economy, Agriculture and Lands, Fisheries and Cooperatives; the Ministry of Mobilisation, Implementation and Transformation; the Ministry of Climate Resilience, the Environment and Renewable Energy, National Disaster Management Agency, Grenada Meteorological Services and the National Water and Sewage Authority), including but not limited to forestry officers, agriculture extension officers, specialists in pests and disease, climate specialists, land experts and hydrology specialists.

[6] Given the high mobile internet penetration rate of approximately 116.7% per 100 inhabitants in Grenada, a mobile application can be a useful tool for knowledge exchange (https://www.statista.com/statistics/727315/mobile-internet-penetration-latin-america-country/). The pilot app will be designed based on the farmers' input and the usability tested by the farmers involved in the project. The feedback will be used to improve the user experience before the app is rolled out to farmers outside of the project.

[7] The project will work with GRENCODA, the Grenada Network of Rural Women Producers and the Grenada National Organisation of Women to integrate as many women farmers, processors and those involved in other nutmeg-dependent livelihood activities as possible in the project

[8] State agencies include: Ministry of Economic Development, Planning, Tourism, ICT, Creative Economy, Agriculture and Lands, Fisheries and Cooperatives; the Ministry of Mobilisation, Implementation and Transformation; the Ministry of Climate Resilience, the Environment and Renewable Energy, National Disaster Management Agency, Grenada Meteorological Services and the National Water and Sewage Authority), including but not limited to forestry officers, agriculture extension officers, specialists in pests and disease, climate specialists, land experts and hydrology specialists. Farmers and farmer organisations include: both formal and informal small-scale nutmeg farmers GRENCODA, the Grenada Network of Rural Women Producers, Grenada Co-operative Nutmeg Association, the Grenada Cocoa Association, the Northeast Farmers Organisation, and the Grenada National Organisation of Women.

Coordination and Cooperation with Ongoing Initiatives and Project.

Does the GEF Agency expect to play an execution role on this project?

If so, please describe that role here. Also, please add a short explanation to describe cooperation with ongoing initiatives and projects, including potential for co-location and/or sharing of expertise/staffing

N/A

Core Indicators

Explain the methodological approach and underlying logic to justify target levels for Core and Sub-Indicators (max. 250 words, approximately 1/2 page)

META INFORMATION – SCCF

LDCF **false**	SCCF-B (Window B) on technology transfer **false**	SCCF-A (Window-A) on climate Change adaptation **true**
Is this project LDCF SCCF challenge program?		

false

This Project involves at least one small island developing State(SIDS).

true

This Project involves at least one fragile and conflict affected state.

false

This Project will provide direct adaptation benefits to the private sector.

true

This Project is explicitly related to the formulation and/or implementation of national adaptation plans (NAPs).

false

This project will collaborate with activities begin supported by other adaptation funds. If yes, please select below

Green Climate Fund	Adaptation Fund	Pilot Program for Climate Resilience (PPCR)
true	**true**	**false**

This Project has an urban focus.

false

This project will directly engage local communities in project design and implementation

true

This project will support South-South knowledge exchange

false

This Project covers the following sector(s)[the total should be 100%]: *

Agriculture	60.00%
Nature-based management	30.00%
Climate information services	0.00%
Coastal zone management	0.00%
Water resources management	0.00%
Disaster risk management	10.00%
Other infrastructure	0.00%
Tourism	0.00%
Health	0.00%
Other (Please specify comments)	0.00%
Total	100.00%

This Project targets the following Climate change Exacerbated/introduced challenges:*

Sea level rise	Change in mean temperature	Increased climatic variability	Natural hazards
false	**false**	**true**	**true**

Land degradation	Coastal and/or Coral reef degradation	Groundwater quality/quantity
true	**false**	**false**

CORE INDICATORS – SCCF

	Total	Male	Female	% for Women
CORE INDICATOR 1 Total number of direct beneficiaries	336	168.00	168.00	50.00%
CORE INDICATOR 2 (a) Area of land managed for climate resilience (ha) (b) Coastal and marine area managed for climate resilience (ha)	500.00 0.00			
CORE INDICATOR 3 Number of policies/plans/ frameworks/institutions for to strengthen climate adaptation	4.00			
CORE INDICATOR 4 Number of people trained or with awareness raised	336	168.00	168.00	50.00%
CORE INDICATOR 5 Number of private sector enterprises engaged in climate change adaptation and resilience	0.00			

Key Risks

	Rating	Explanation of risk and mitigation measures
CONTEXT		
Climate	Moderate	Climate change poses an ongoing risk to Grenada, with long-term projected effects such as decreasing rainfall and rising temperatures by 2050, an increase in drought conditions, and an overall increase in hurricane intensity (Chandool et al., 2023). During the project period, the risk of hurricane activity is present, which can impede project implementation during the rainy season. However, the project will mitigate such impacts through the project's monitoring and evaluation system, which will be designed to respond to changes, including weather-related changes in the local context. As part of monitoring and evaluation, the project will actively engage with stakeholders at the Met Office and the Ministry of Climate Resilience, the Environment and Renewable Energy, valuing their expertise and support in responding to this risk.
Environmental and Social	Moderate	Undertaking site-specific restoration within the Annandale Forest Reserve may carry environmental risks, albeit low in nature. In carrying out nutmeg restoration, there is the potential to disrupt species corridors and cause soil disturbance that can lead to the release of carbon and increase erosion. To prevent further degradation while striving for restoration, the project will leverage the expertise of the FAO, forestry officers, extension services and

		farmers in the planning phases to ensure that proposed activities do not lead to further habitat and land degradation. Furthermore, the project will draw on the best practices from the SOILCARE project to ensure that proper sustainable land management is implemented throughout the pilot restoration. From a social perspective, the pilot restoration has the potential to incur an opportunity cost for farmers, i.e. the time spent to participate in the restoration activities and training vs time invested into their livelihood activities and loss of income. As such, the project will create and implement a stakeholder and communication strategy at the start of the project to ensure that project ownership and consensus are established amongst farmers.
Political and Governance	Low	There is a potential (low) risk of a lack of political will from government institutions to participate in and implement the project's recommendations. This lack of political will stem from limited institutional capacity as well as changes in policy priorities. To circumvent this, the project will leverage the long-standing relationship between the FAO and key state institutions to ensure that political consensus and support are established and maintained throughout the project. The proposed project has and will continue to engage with government stakeholders to ensure that the project addresses development priorities in agriculture, responds to climate adaptation and biodiversity loss, and supports the government in making progress towards the SDGs and Kunming-Montreal Global Biodiversity targets. Under Component 1, there is a strong emphasis on strengthening institutional capacities across key institutions to support nutmeg restoration and biodiversity restoration.
INNOVATION		
Institutional and Policy	Low	There is a (low) risk that revised key policies (Component 1) may not be implemented due to a lack of legislation to support implementation coupled with personnel constraints. Given the importance of the nutmeg sector to economic development and trade in Grenada, there is a developmental urgency by the government, especially in the face of climate change, to ensure that project outputs are realised. To address the existing business-as-usual operation, skills training and organisation streamlining will be undertaken in project activities under Component 1 to address personnel constraints. Furthermore, the project will leverage the expertise of the FAO and local technocrats within participating ministries to advise on improvements to legislative frameworks so that policy updates undertaken within this project can be implemented and enforced.
Technological	Low	The project has a strong technical focus, prioritising an early warning early action system and a management information system pilot to strengthen the enabling environment (Component 2). There is the potential risk, albeit low, of user resistance and buy-in to the implementation of new technical solutions. In addition, limited data and/or poor data quality can undermine the effectiveness of the systems in supporting decision-making. Integrating the management information system with existing legacy systems or other databases can add further complexity in the implementation phase. These risks are not novel when it comes to the introduction of new technical solutions. To mitigate these

		risks, the project will leverage the technical expertise of the FAO and best practices from existing and past projects. The project's communication strategy will help establish confidence and support for these new technical solutions.
Financial and Business Model	Low	Macroeconomic risks such as inflation may impact the cost of the project during implementation. To mitigate this risk, the FAO has a competent financial management and procurement system that is guided by FAO regulations and built on the principles of "best value for money, fairness, transparency, economy and effectiveness." As such, inflationary pressures will be managed via this system to ensure that the best value is sought for goods and services and that compliance is maintained. In addition, where cost-cutting is necessary to remain within budget, flexible options such as virtual workshops can be utilised to reduce costs.
EXECUTION		
Capacity	Low	One of the project's core focus is to address institutional capacity gaps that stymie the resilience and recovery of nutmeg agroforests and terrestrial biodiversity. However, there is the risk that existing personnel constraints can result in low expert participation in capacity-building activities and low stakeholder commitment to update and implement key policies and plans. This, in turn, can perpetuate a business-as-usual operation that has a limited positive impact on ecosystem restoration and resilience. In the project, institutional gaps will be identified via a situational analysis, and gaps bridged through project activities such as skills training, organisation and management streamlining, as well as technical solutions (Component 1). The project will also leverage the expertise of the FAO to support project activities in building institutional capacity. The establishment of the knowledge management plan (Component 3) will ensure that the project's results are sustained beyond the duration of the project.
Fiduciary	Low	There is a potential risk of exceeding budgetary allocations, albeit low. As the project manager, the FAO is responsible for disbursing funds in accordance with GEF-8 and FAO regulations. The FAO has a competent financial management and procurement system that is guided by FAO regulations and built on the principles of "best value for money, fairness, transparency, economy and effectiveness." As such these mechanisms ensure compliance and that the project will be within budget.
Stakeholder	Low	While the risks associated with stakeholder engagement are low, the project still has the potential for the following to occur that can impede project implementation. Low stakeholder participation from farmers and farming groups due to lack of project buy-in, lack of trust and time away from livelihood activities can have a negative impact on the project's success. In addition to low participation, the under-representation of women farmers, processors and those involved in other nutmeg-dependent livelihood activities can have a disproportionate impact in terms of knowledge transfer and livelihood benefits accrued to farmers. This can result from a lack of active

		engagement with women from the project inception, as well as women farmers, processors and those involved in other nutmeg-dependent livelihood activities also having to bear other responsibilities within the household. Unequal power dynamics amongst powerful state actors, FAO representatives and farmers within stakeholder engagement can also act as a barrier towards achieving project outcomes. In light of the above, emphasis will be placed on establishing an effective stakeholder and communication strategy at the start of the project to ensure that project ownership is fostered amongst farmers and farming groups. It is important that stakeholders have a sense of ownership of project activities in order to maintain buy-in throughout the project. Leaning on best practices from ongoing and past projects, the strategy will prioritise the direct involvement of these stakeholders in the design and implementation of project activities. In addition, the strategy will actively focus on minimizing the barriers that impede their involvement to ensure that women are adequately represented at trainings, workshops and the site-specific restoration pilot. The project will also draw on lessons learned from previous projects to manage power dynamics so that women and other marginalized stakeholders are visible throughout the process. To further support this, a gender-sensitive monitoring and evaluation system (Component 3) will be established at the start of the project to ensure that no group is left behind within the project.
Other		
Overall Risk Rating	Moderate	The risk categorization above and analysis indicate an overall moderate risk rating for the project.

C. ALIGNMENT WITH GEF-8 PROGRAMMING STRATEGIES AND COUNTRY/REGIONAL PRIORITIES

Describe how the proposed interventions are aligned with GEF- 8 programming strategies and country and regional priorities, including how these country strategies and plans relate to the multilateral environmental agreements.

Confirm if any country policies that might contradict with intended outcomes of the project have been identified, and how the project will address this.

For projects aiming to generate biodiversity benefits (regardless of what the source of the resources is - i.e., BD, CC or LD), please identify which of the 23 targets of the Kunming-Montreal Global Biodiversity Framework the project contributes to and explain how. (max. 500 words, approximately 1 page)

I. GEF-8 Programming Strategies

The proposed project operates at the confluence of the GEF-8 climate change, biodiversity and land degradation focal areas and addresses their key objectives within the programming strategy. By addressing climate adaptation challenges in nutmeg agroforestry in Grenada, the project targets the priority areas of the SCCF for the period 2022-2026 on i) "Supporting the adaptation needs of Small Island Developing States." According to the Programming

Strategy on Adaptation to Climate Change a key theme for the SCCF is Theme 1 agriculture, food security and health. The project is aligned with the concept of agroecological transformation through improvements in ecosystem management and the focus on livelihoods, as well as through specific interventions such as pest and disease surveillance systems through the proposed Early Warning Early Action activity. The project also targets other adaptation themes addressing the prioritisation of ecosystem restoration, forestry and disaster risk management.

ii. CARICOM and National Priorities

Grenada, as a member of CARICOM, is engaged in regional agreements and policies related to climate change and ecosystem management. As this project sets out to enhance the resilience of nutmeg agroforest systems, project outcomes will make progress towards the following: The Caribbean Community Biodiversity Strategy; the Organisation of Eastern Caribbean States (OECS) Biodiversity and Ecosystems Management Framework (2020-2035); the Caribbean Community Environmental and Natural Resources Policy Framework and the Caribbean Community Agricultural Policy. In general, the outcomes of the project address a fundamental thread across the aforementioned frameworks, i.e. the need for biodiversity conservation and restoration within the Caribbean region to support ecosystem services and sustainable development. More specifically, under the Caribbean Community Biodiversity Strategy, this project will make progress towards Goal 1 (To conserve biodiversity to protect natural heritage and assets) and Goal 2 (To sustainably use ecosystem goods and services for national and regional development). Furthermore, this project crosscuts and addresses key objectives under Theme 1 (Protection, maintenance and restoration of ecosystems), Theme 2 (Invasive species management, biosafety and biosecurity), Theme 3 (Climate resilient ecosystems) and Theme 5 (Assessing and integrating biodiversity and ecosystem into national development processes) of the OECS Biodiversity and Ecosystems Management Framework.

At the international level, Grenada is a party to several international Multilateral Environmental Agreements (MEAs), including but not limited to the Convention on Biological Diversity, the United Nations Framework Convention on Climate Change (UNFCCC), the Paris Agreement under UNFCCC, the United National Convention to Combat Desertification and the International Plant Protection Convention. The proposed project will make progress towards national commitments and responsibilities under these MEAs.

At the national level, the project is conceived with the SDGs in focus and thus will contribute to the country's progress towards achieving targets under Goal 1 (End Poverty), Goal 2 (Zero Hunger), Goal 5 (Gender Equality), Goal 6 (Clean Water and Sanitation), Goal 12 (Responsible Consumption and Production), Goal 13 (Climate Action) and Goal 15 (Life on Land). As such, the project has a strong sustainable development outlook and is aligned with the government's national priorities outlined in the National Sustainable Development Plan 2020-2035. Several plans, policies and initiatives have been made in Grenada to address climate change, biodiversity and sustainable land management within the agriculture sector, including:

- **Grenada's National Climate Change Policy (2017-2021) provides the framework for steering an efficient and effective integration of adaptation and mitigation in all climate relevant sectors, to be accomplished through eight (8) objectives. Two (2) of the Policy objectives are "Strengthen institutional structure to support coordination, mainstreaming and implementation of climate change adaptation and mitigation action, along with the systematic integration of climate change adaptation into development policies, plans, programmes, projects, budgets and processes," and "Build climate resilience in the following priority thematic areas: water supply and sewage management; 'agriculture, agri-business and food security'; biodiversity and ecosystems; human health and coastal zone management." The proposed project will contribute to these Policy objectives through its activities to strengthen institutional capacity to mainstream climate change adaptation and technological innovation to improve data access for decision-making; revision of outdated and draft policies and plans to include stronger linkages to climate change adaptation and ecosystem considerations; and build resilience of agroforests, ecosystems and farming livelihoods. The proposed interventions immediately support the achievement of the following expected policy outcomes: 'Uptake of climate-smart agriculture techniques and technologies and establishment of four climate-smart agriculture demonstration sites to highlight different technologies and techniques' and '60% of agriculture officers to be advising farmers how to implement climate-smart agriculture practices.'**

- **Concrete Programs of Action (PoAs) were defined in the National Climate Change Adaptation Plan (2017-2021). This project specifically contributes to: PoA 1 'Institutional arrangements, inter-sectoral coordination and participation,' through the proposed activities to conduct capacity-building to improve coordination across state agencies and establish of a central Management Information System (MIS) to enhance evidence-based decision-making; PoA 2 'Systematic integration of adaptation into development policies, plans, programmes, projects, budgets and processes,' through the proposed activities to revise outdated and draft policies to include stronger linkages to climate change adaptation and ecosystem considerations;**

PoA 5 'Ecosystem Resilience,' through the proposed activities to restore degraded nutmeg agroforest systems and technological innovation to improve disaster management with respect to pests and disease; and PoA 8 'Disaster risk reduction and disease prevention,' through the proposed activities to implement an EWEAS for pests and disease.

- In its Second Nationally Determined Contribution (NDC) (2020), Grenada commits to reducing its greenhouse gas emissions by 40% by 2030 (relative to 2010), focusing on the energy, forestry, waste, and cooling sectors, and leveraging mitigation benefits of adaptation actions. This project will contribute to this mitigation target by supporting the rehabilitation of degraded agroforests and the integration of more ecosystem-based adaptation techniques to support climate resilience of agroforests.

- In the National Agriculture Plan (2015-2030), the Government of Grenada defines 'strengthening the agricultural sector's resilience to climate change and natural disasters, reducing its adverse impact on climate change and the environment, and ensuring that development is socially, economically and environmentally sustainable' as one of the five (5) strategic focus areas for the sector. The proposed project expects to build the resilience capacity, at the institutional and landscape level, of the agroforest system as well as the nutmeg farmers to cope with environmental and climate stressors.

The National Adaptation Planning for Improved Food Security in Grenada (2021-2025) is a Green Climate Fund readiness project which seeks to strengthen the systems and human capacity for generation, management and dissemination of critical data and information to accelerate adaptation action in Grenada's agriculture and fisheries sectors. It involves the pilot-testing of selected climate smart technologies and adaptation practices in priority value chains and serves as an important baseline intervention which can yield valuable recommendations for this project.

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[1] The objectives for the focal areas in this section are taken from the GEF report "GEF-8 Progamming Directions" https://www.thegef.org/sites/default/files/2023-01/GEF-8_Programming_Directions.pdf Accessed 29.03.2024

D. POLICY REQUIREMENTS

Gender Equality and Women's Empowerment:

We confirm that gender dimensions relevant to the project have been addressed as per GEF Policy and are clearly articulated in the Project Description (Section B).

Yes

Stakeholder Engagement

We confirm that key stakeholders were consulted during PIF development as required per GEF policy, their relevant roles to project outcomes and plan to develop a Stakeholder Engagement Plan before CEO endorsement has been clearly articulated in the Project Description (Section B).

Yes

Were the following stakeholders consulted during project identification phase:

Indigenous Peoples and Local Communities:

Civil Society Organizations: Yes

Private Sector: Yes

Provide a brief summary and list of names and dates of consultations

Stakeholder engagements were carried out February, April and November 2024, via Microsoft Teams, and were conducted bilaterally between the FAO and the representatives from various state institutions, civil society organisations and private sector organisations. The attendees are listed below:

Name	Position	Organisation	Role in project
15 February 2024			
Mrs Neila Bobb-Prescott	Climate and Environment Finance Specialist	FAO Sub-Regional Office for the Caribbean (FAOSLC)	Implementing agency
Ms Aleanna Willams	Forestry Officer	Ministry of Agriculture, Lands, Forestry, Marine Resources and Cooperatives	Key partner for project management and implementation
Mr Dillon Palmer	Forestry Officer	Ministry of Agriculture, Lands, Forestry, Marine Resources and Cooperatives	Key partner for project management and implementation
Mr. Thaddeus Peters	Pest Management Officer	Ministry of Agriculture, Lands, Forestry, Marine Resources and Cooperatives	Key partner for project management and implementation
21 February 2024			
Mr Dillon Palmer	Forestry Officer	Ministry of Agriculture, Lands, Forestry, Marine Resources and Cooperatives	Key partner for project management and implementation
Ms Aleanna Willams	Forestry Officer	Ministry of Agriculture, Lands, Forestry, Marine Resources and Cooperatives	Key partner for project management and implementation
Mr Anthony Jeremiah	Chief Forestry Officer	Ministry of Agriculture, Lands, Forestry, Marine Resources and Cooperatives	Key partner for project management and implementation
Mr Nigel Gibbs	Agriculture Infrastructure 2	Ministry of Agriculture, Lands, Forestry, Marine Resources and Cooperatives	Key partner for project management and implementation

Name	Position	Organisation	Role in project
Mrs Celia Edwards	Irrigation Technician	Ministry of Agriculture, Lands, Forestry, Marine Resources and Cooperatives	Key partner for project management and implementation
Mr. Thaddeus Peters	Pest Management Officer	Ministry of Agriculture, Lands, Forestry, Marine Resources and Cooperatives	Key partner for project management and implementation
Mr Joseph Noel	Land Use Division	Ministry of Agriculture, Lands, Forestry, Marine Resources and Cooperatives	Key partner for project management and implementation
Mrs Isabel Morris	Senior Change Management Officer	Ministry of Mobilisation, Implementation and Transformation	GEF Operational Focal Point
09 April 2024			
Mr Isaac Bhagwan	Permanent Secretary	Ministry of Agriculture, Lands, Forestry, Marine Resources and Cooperatives	Key partner for project management and implementation
Ms Nicole Clarke-Gurley	Permanent Secretary	Ministry of Mobilisation, Implementation and Transformation	GEF Operational Focal Point
Mrs Neila Bobb-Prescott	Climate and Environment Finance Specialist	FAOSLC	Implementing agency
Mrs Isabel Morris	Senior Change Management Officer	Ministry of Mobilisation, Implementation and Transformation	GEF Operational Focal Point providing alignment with government policy
Mr Dillon Palmer	Forestry Officer	Ministry of Agriculture, Lands, Forestry, Marine Resources and Cooperatives	Key partner for project management and implementation
06 November 2024			
Mr Isaac Bhagwan	Permanent Secretary	Ministry of Agriculture, Lands, Forestry, Marine Resources and Cooperatives	Key partner for project management and implementation
Mr Dillon Palmer	Forestry Officer	Ministry of Agriculture, Lands, Forestry, Marine Resources and Cooperatives	Key partner for project management and implementation
Mr Roderick St. Clair	General Manager	Grenada Co-Operative Nutmeg Association (reported to represent 3,000 nutmeg farmers)	Key partner for project management and implementation
Mrs Neila Bobb-Prescott	Climate and Environment Finance Specialist	FAOSLC	Implementing agency
Ms Danielle Lewis-Clarke	Portfolio Support Specialist	FAOSLC	Implementing agency
26 November 2024			

Name	Position	Organisation	Role in project
Mr Gerard Tamar	Manager of Meteorology	Grenada Airport Authority	Key partner for project management and implementation
Mr Dillon Palmer	Forestry Officer	Ministry of Agriculture, Lands, Forestry, Marine Resources and Cooperatives	Key partner for project management and implementation
Mrs Neila Bobb-Prescott	Climate and Environment Finance Specialist	FAOSLC	Implementing agency
Ms Danielle Lewis-Clarke	Portfolio Support Specialist	FAOSLC	Implementing agency
28 November 2024			
Dr Malachy Dottin	Director (Government nominated)	Grenada Co-Operative Nutmeg Association	Key partner for project management and implementation
Mr Dillon Palmer	Forestry Officer	Ministry of Agriculture, Lands, Forestry, Marine Resources and Cooperatives	Key partner for project management and implementation
Ms Johnelle McDonald	Land Use Division	Ministry of Agriculture, Lands, Forestry, Marine Resources and Cooperatives	Key partner for project management and implementation
Ms Alicia Lett	Quality Assurance Officer	Grenada Co-Operative Nutmeg Association	Key partner for project management and implementation
Mr Roderick St. Clair	General Manager	Grenada Co-Operative Nutmeg Association (represents 3,000 nutmeg farmers)	Key partner for project management and implementation
Mrs Neila Bobb-Prescott	Climate and Environment Finance Specialist	FAOSLC	Implementing agency
Ms Danielle Lewis-Clarke	Portfolio Support Specialist	FAOSLC	Implementing agency
29 November 2024			
Mr Trevor Thompson	Member	St Andrew's Development Organisation (SADO) St. Patrick's Environmental and Community Tourism Organization (SPECTO)	Target stakeholders for communications of lessons learned and best practices

Name	Position	Organisation	Role in project
Ms Sandra Ferguson	Head	Inter-Agency Group of Development Organisations (IAGDO)	Target stakeholders for communications of lessons learned and best practices
Ms Abigail Ellis	Representative	Caribbean Youth Environment Network (CYEN)	Target stakeholders for communications of lessons learned and best practices
Mr Raheem Smith	Deputy Chair	CYEN	Target stakeholders for communications of lessons learned and best practices
Ms Shadel Stafford	Representative	CYEN	Target stakeholders for communications of lessons learned and best practices
Ms Natasha Boldeau	Secretary	Grenada Community Development Agency (GRENCODA)	Important beneficiary, specifically for the inclusion of women and vulnerable groups
Ms. Theresa Marryshow	President	Grenada Rural Women Producers (GRENROP)	Important beneficiary, specifically for the inclusion of women and vulnerable groups

A stakeholder engagement strategy will be developed in cooperation with the above stakeholders as well as other stakeholders listed in Section B to ensure co-design and project consensus throughout the project lifecycle.

(Please upload to the portal documents tab any stakeholder engagement plan or assessments that have been done during the PIF development phase.)

Private Sector

Will there be private sector engagement in the project?

Yes

And if so, has its role been described and justified in the section B project description?

Yes

Environmental and Social Safeguard (ESS) Risks

We confirm that we have provided indicative information regarding Environmental and Social risks associated with the proposed project or program and any measures to address such risks and impacts (this information should be presented in Annex D).

Yes

Overall Project/Program Risk Classification

PIF	CEO Endorsement/Approval	MTR	TE
Medium/Moderate			

E. OTHER REQUIREMENTS

Knowledge management

We confirm that an approach to Knowledge Management and Learning has been clearly described in the Project Description (Section B)

Yes

ANNEX A: FINANCING TABLES

GEF Financing Table

Indicative Trust Fund Resources Requested by Agency(ies), Country(ies), Focal Area and the Programming of Funds

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	Grant / Non-Grant	GEF Project Grant($)	Agency Fee($)	Total GEF Financing ($)
FAO	SCCF-A	Grenada	Climate Change	SCCF-A Country allocation	Grant	863,243.00	82,007.00	945,250.00
Total GEF Resources ($)						**863,243.00**	**82,007.00**	**945,250.00**

Project Preparation Grant (PPG)

Is Project Preparation Grant requested?

true

PPG Amount ($)

50000

PPG Agency Fee ($)

4750

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	Grant / Non-Grant	PPG($)	Agency Fee($)	Total PPG Funding($)

FAO	SCCF-A	Grenada	Climate Change	SCCF-A Country allocation	Grant	50,000.00	4,750.00	54,750.00
Total PPG Amount ($)						**50,000.00**	**4,750.00**	**54,750.00**

Please provide justification

Sources of Funds for Country Star Allocation

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Sources of Funds	Total($)
Total GEF Resources					**0.00**

Indicative Focal Area Elements

Programming Directions	Trust Fund	GEF Project Financing($)	Co-financing($)
CCA-2-1	SCCF-A	863,243.00	4414560
Total Project Cost		**863,243.00**	**4,414,560.00**

Indicative Co-financing

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount($)
Recipient Country Government	Ministry of Economic Development, Planning, Tourism, Creative Economy, Culture, Agriculture and Lands, Forestry, Marine Resource and Cooperatives	Grant	Investment mobilized	4000000
Recipient Country Government	Ministry of Economic Development, Planning, Tourism, Creative Economy, Culture, Agriculture and Lands, Forestry, Marine Resource and Cooperatives	In-kind	Recurrent expenditures	34560
GEF Agency	FAO	In-kind	Recurrent expenditures	150000
Recipient Country Government	Ministry of Economic Development, Planning, Tourism, Creative Economy, Culture, Agriculture and Lands, Forestry, Marine Resource and Cooperatives	Public Investment	Investment mobilized	230000
Total Co-financing				**4,414,560.00**

Describe how any "Investment Mobilized" was identified

The co-financing will be through the following projects from the Government of Grenada:

- Climate Smart Agriculture & Rural Enterprises Programme (SAEP) (2024-2026)
- Grenada Climate Agriculture Adaptation Project (GCAP) (2024-2030)
- Integrated Physical Adaptation and Community Resilience in 3 Eastern Caribbean SIDS (2024-2026)
- Climate Smart Infrastructure Project (2024-2025)
- Integrated Pest Management (2024-2026)
- Spice Replanting Project (2023-2026)
- Agricultural Research (2024-2026)

In addition, the FAO will identify co-financing from its Programme of Work.

ANNEX B: ENDORSEMENTS

GEF Agency(ies) Certification

GEF Agency Type	Name	Date	Project Contact Person	Phone	Email
GEF Agency Coordinator	Jeffrey Griffin	6/10/2024	Neila Bobb-Prescott	8683023739	neila.bobbprescott@fao.org

Record of Endorsement of GEF Operational Focal Point (s) on Behalf of the Government(s):

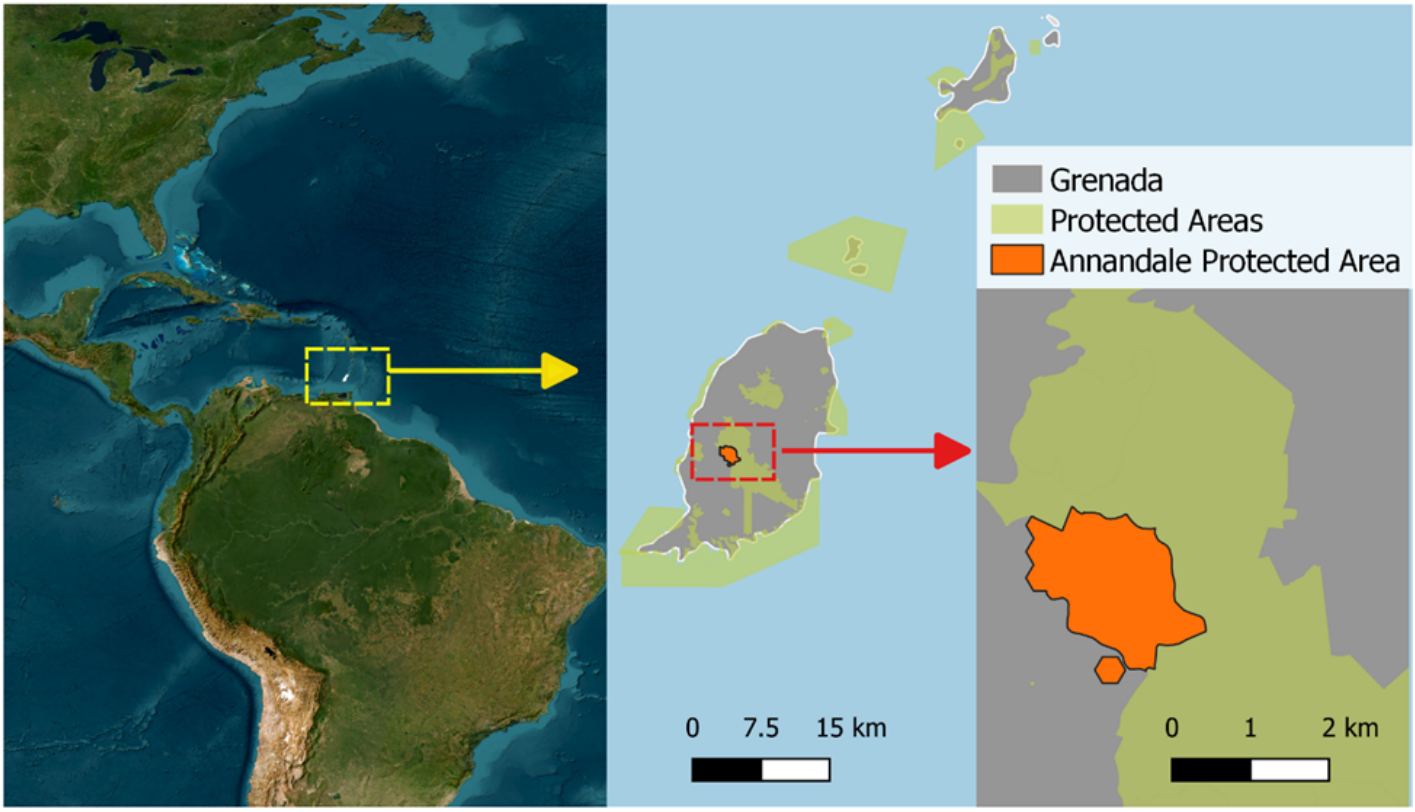
Name	Position	Ministry	Date (MM/DD/YYYY)
Nicole Clarke	Permanent Secretary (Ag.)	Ministry of Mobilisation, Implementation and Transformation	5/14/2024

ANNEX C: PROJECT LOCATION

Please provide geo-referenced information and map where the project interventions will take place

The geo-coordinates for the project area are as follows:

Project Area		Geo-coordinates EPSG:4326			
	Area	Lon min	Lat min	Lon max	Lat max
Annandale Protected Area	236 ha	-61.7178	12.0878	-61.6967	12.1085



ANNEX D: ENVIRONMENTAL AND SOCIAL SAFEGUARDS SCREEN AND RATING

(PIF level) Attach agency safeguard screen form including rating of risk types and overall risk rating.

Title
Annex D_ESS Screen and Rating_February2025

ANNEX E: RIO MARKERS

Climate Change Mitigation	Climate Change Adaptation	Biodiversity	Land Degradation
No Contribution 0	Principal Objective 2	Significant Objective 1	Significant Objective 1

ANNEX F: TAXONOMY WORKSHEET

Level 1	Level 2	Level 3	Level 4
Influencing models			
	Strengthen institutional capacity and decision-making		
	Convene multi-stakeholder alliances		
	Demonstrate innovative approaches		
Stakeholders			
	Private Sector		
		SMEs	
		Individuals/Entrepreneurs	
	Beneficiaries		
	Local Communities		

	Civil Society		
		Community Based Organization	
	Type of Engagement		
		Information Dissemination	
		Consultation	
		Participation	
	Communications		
		Awareness Raising	
		Education	
		Public Campaigns	
		Behavior Change	
Capacity, Knowledge and Research			
	Capacity Development		
	Knowledge Generation and Exchange		
	Learning		
		Theory of Change	
	Knowledge and Learning		
		Knowledge Management	
		Capacity Development	
		Learning	
	Stakeholder Engagement Plan		
Gender Equality			
	Gender Mainstreaming		
		Beneficiaries	
Focal Areas/Theme			
	Climate Change		
		Climate Change Adaptation	
			Small Island Developing States
			Climate Resilience
			Community-based Adaptation
			Livelihoods