ADAPTATION FUND

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Adaptation Fund Board
Project and Programme Review Committee
Thirty-fifth Meeting
Bonn, Germany, 8-9 April 2025

PROPOSAL FOR GRENADA

ADAPTATION FUND BOARD SECRETARIAT TECHNICAL REVIEW OF PROJECT/PROGRAMME PROPOSAL

PROJECT/PROGRAMME CATEGORY: **REGULAR SIZE FULL PROPOSAL**

Country/Region: Grenada
Project Title: Enhancing the resilience of vulnerable small Island Communities to climate change Hazards (ENRICH)
Thematic Focal Area: Agriculture
Implementing Entity: International Fund for Agriculture Development
Executing Entities: Ministry of Economic Development, Planning, Tourism, ICT, Creative Economy, Culture, Agriculture, and Lands, Forestry, Marine Resources and Fisheries and & Cooperatives of Grenada
AF Project ID: AF00000334
IE Project ID: **Requested Financing from Adaptation Fund (US Dollars):** $10,000,000
Reviewer and contact person: Angelica Ospina **Co-reviewer(s):** Hugo Paul Bernard Remaury
IE Contact Person: Mr. Oliver Page, Regional Climate and Environment Specialist

Technical Summary	The project "Enhancing the resilience of vulnerable small Island Communities to climate change Hazards (ENRICH)" aims to reduce exposure and vulnerability to extreme climatic events and strengthen the adaptative capacity of vulnerable rural small island communities. In particular, it seeks to improve access of vulnerable communities to a sustainable use of water and to drought and hurricane-resistant infrastructure, increase the capacity of vulnerable rural households and their most vulnerable members to adapt to climate change, as well as to improve the capacity of local institutions and vulnerable communities to manage and share climate adaptation knowledge and cope with adverse climatic shocks. This will be done through the three components below: Component 1: Drought and hurricane resilient infrastructure for vulnerable rural communities (USD 3,452,884). Component 2: Climate-resilient innovations and investments for vulnerable rural households and their most vulnerable members (USD 3,966,726) Component 3: Climate resilient institutions and risk mitigation framework (USD 921,403). Requested financing overview: Project/Programme Execution Cost: USD 875,576 Total Project/Programme Cost: USD 9,216,590 Implementing Fee: USD 783,410 Financing Requested: USD 10,000,000

	The initial technical review raised a few issues such as the need for more details on some project activities, the calculation of project beneficiaries, the articulation with other ongoing/planned projects, and the scope of implementation, as discussed in the number of Clarification Requests (CRs) and Corrective Action Request (CAR) raised in the review. This second technical review finds that most of the comments were duly addressed in the updated proposal, which provides a robust overview of the project. There are only a few remaining CRs and CAR to be addressed, related to the estimation of project beneficiaries, consultative process and gender responsiveness, implementation arrangements, and alignment between the results framework, core indicators and the Gender Action Plan indicators, raised in the review.
Date:	February 7, 2025

Review Criteria	Questions	Comments First Technical Review Dec 4, 2024	Comments Second Technical Review Feb 7, 2025
Country Eligibility	1. Is the country party to the Kyoto Protocol, or the Paris Agreement?	**Yes.**	-
	2. Is the country a developing country particularly vulnerable to the adverse effects of climate change?	**Yes.** Grenada is particularly vulnerable to the observed and projected climatic changes, including extreme events, and is already experiencing changes in its climate system, evidenced by increased incidence of drought, longer dry seasons, shorter rainy seasons, increased temperatures, coastal degradation and intrusion of saline water into aquifers, among others.	-
Project Eligibility	1. Has the designated government authority for the Adaptation Fund endorsed the project/programme?	**Yes.** As per the Endorsement letter dated November 5, 2024.	-
	2. Does the length of the proposal amount to no more than Fifty pages for the project/programme	**Yes.**	-

	concept, including its annexes?		
	3. Does the project / programme support concrete adaptation actions to assist the country in addressing adaptive capacity to the adverse effects of climate change and build in climate resilience?	**Yes, but further information is needed.** The proposal is structured in a way that addresses key entry points for enhanced resilience across scales—by improving communities' access of sustainable water use and hurricane-resistant infrastructure, the capacity of rural households to adapt through climate resilient innovations and investments, and the capacity of institutions and farmers to manage and share climate adaptation knowledge and mitigate risk. Concrete adaptation actions at the community level are included mostly under Components 1 and 2. The Theory of Change provides a clear overview of the project components and the way in which they will tackle the underlying challenges to resilience in Grenada. The linkages between expected outputs and desired outcomes are generally clear. Each component is tied to specific, measurable outputs and outcomes, providing a cohesive trajectory to the achievement of the project's objective. However, some clarifications are required to strengthen the rationale and the implementation approach of the proposed activities, as per the CR	

		provided below: **CR1:** The proposal refers to the results of 'Water for irrigation' tool for Grenada study done under the AGRI project as being key in the selection of targeted 9s for the ENRICH project. Please summarize the main results of the study, that informs the location selection to strengthen the rationale of the geographic targeting. **CR2:** Under Activity 1, the proposal states that in addition to technical training, 50 workshops will be organized to foster local ownership of water infrastructure, and community empowerment. This is in addition to 24 Farmer Field Schools. Kindly clarify the rationale behind the proposed number of workshops, their overall methodology/approach, including their location and sequencing throughout the life of the project. **CR3:** Please consider the engagement of a training & communications specialist as part of the PMU, given the emphasis placed by the project on capacity building across the components. This Specialist could be also in charge of developing the Communications Plan proposed (page 86). **CR4**: The budget allocated to output 2.1.1. appears particularly high (USD 1,261,039) given the activities supported	**CR1: Cleared.** The revised proposal includes a summary of the "Water for Irrigation" tool, including the way in which the findings were used to inform the geographic targeting of the project, in page 31 of the proposal. **CR2. Cleared.** Under Output 1.1.1., page 40, the proposal clarifies the ratione behind the number of workshops planned, and their location, as well as their overall approach, in line with the objectives of the project. **CR3. Cleared.** In Part III, Implementation Arrangements, the proposal indicates that 'a policy and institutions technical specialist' will also support capacity development aspects, particularly in Component 3. This position will not be part of the PCU (page 87) **CR4. Not cleared.** Under Output 2.1.1., the project will train **300** unemployed and

		(i.e., entrepreneurship training and business development services). The proposal should justify the budget allocation including information on the number of persons to be trained.	underemployed youth (Activity 2) and **250** youth (Activity 3). According to the budget, the Vocational Training of **300** people amounts to **$852,616**, and the ET course for **150** people amounts to **$400,409**. Please check the budget for Component 2 in page 101: should this be 250 units instead, as per the above?.
		CR5: The proposal should briefly describe how infrastructures intended to be constructed under outputs 1.1.4 and 1.1.2 will be made resilient to the impacts of climate change. Please provide further details on how the project will ensure the use of resilient designs and materials as part of the restoration/rehabilitation of water infrastructure and the construction of hurricane resilient facilities (Component 1), including, as relevant, reference to innovations that would strengthen the project's impact on adaptation.	**CR5: Cleared.** In pages 45-46, the proposal provides a detailed description of how the project will ensure that infrastructures constructed or rehabilitated under Outputs 1.1.4 and 1.1.2 are climate resilient.
		CR6: The implementation of the project activities involves several MoUs and MoA to be prepared and signed with different institutions. Kindly provide further details on the project's approach to avoid potential delays in implementation linked to those agreements being in place.	**CR6. Cleared.** From the response provided to CR6, it is noted that the on-going IFAD financed project (SAEP) has experience preparing signing and implementing various MoU and MoA with implementing partners, including the Ministry of Agriculture, the GIDC, the TAMCC. This has allowed to deliver services in an effective and efficient way and both the RDU and potential service providers are aware of the available modalities.
		CR7: As part of output 2.1.3 description,	

		the proposal should expand on i) the approach to implementation and administration of grants (e.g., would call for proposals be issued?); ii) the CSA grant selection committee composition (e.g., how would members be selected and appointed in a transparent manner; how would the project avoid any conflict of interests which may arise from members of that committee; who would provide oversight on this committee - reflecting this in the implementation arrangement section; iii) the grant selection committee decision-making process (e.g., how would the project ensure that the committee ensure a participatory, impartial, and transparent procedures for grants' review, selection, and approval?). **CR8:** Related to output 2.1.3., Activity 2, Financing resilience-enhancing technologies/CSA practices, the project will finance at least 875 initiatives (pg. 49). Kindly clarify how was this number identified, what will be the average duration of those initiatives, and the project's approach to monitoring/assessing them, providing technical support during implementation, and extracting lessons from their implementation. How will the project ensure efficiency in the procurement process, considering the high number of initiatives to be supported? **CR9:** The proposal should reinforce the cohesion of some project outputs among	**CR7. Cleared.** In page 53, the updated proposal provides details on the project's approach to the implementation and administration of grants, including the composition of the CSA grant selection committee, the criteria for ranking proposals, and the oversight of the process by the PCU. **CR8. Cleared.** The updated proposal provides clarification on the approach to support 480 backyard gardens and 480 erosion and storm protection, as way of one-off matching grants (page 51). Please ensure that the proposal includes reference to the procurement lessons from the SAEP project, regarding the development of a list of pre-approved equipment with clear specifications, within a menu of alternatives, to allow procurement in bulk and economies of scale. This is a key strategy to mitigate implementation risks related to delayed procurement processes.

		themselves, as their alignment is currently not straightforward. For instance, it is unclear whether the public ponds restoration under output 1.1.2 would directly benefit the individuals trained and supported through outputs 2.1.1, 2.1.2, and 2.1.3. **CR10:** The proposal should briefly describe how the project will avoid non-climatic barriers identified in the background section to impede the achievement of relevant project activities, notably unregulated land use and an inefficient land tenure system (e.g. in the case of Farmer Field Schools established under output 2.1.2). **CR11:** Given that there are contradictory figures across different sections, the proposal should clarify throughout the proposal whether 250 or 300 youth would benefit from the Entrepreneurship Training (ET) and Business Development Services (BDS) activities. **CAR1**: Kindly ensure that all Annexes are referenced in the main text of the proposal, in the correct sequential order. Please ensure consistency in the reference to PMU (it is referred to as Project Coordination Unit, PCU in Figure 15 and in other parts of this section).	**CR9. Cleared.** The updated proposal clarifies that the farmers benefiting from outputs 1.1.2 and 1.1.3 will be eligible to participate in the 2.1.2 and 2.1.3, thus strengthening the cohesion between outputs under Components 1 and 2 (page 43). **CR10. Not cleared.** The response to CR10 is well noted. However, this clarification has not been reflected in the updated proposal. Kindly integrate accordingly. **CR11. Not cleared.** The project clarifies that the target is 250 women and youth receiving ET and BDS training Page 47). Kindly ensure that this number is also updated in the Results Framework, page 97, under output 2.1.1. (currently it indicates 450 as the target), as well as in Table 11 (page 78), and in Table 22 of the Gender Action Plan, to ensure consistency. **CAR1. Cleared.** The term PCU is used consistently in the updated proposal. .

	4. Does the project / programme provide economic, social and environmental benefits, particularly to vulnerable communities, including gender considerations, while avoiding or mitigating negative impacts, in compliance with the Environmental and Social Policy and Gender Policy of the Fund?	**Yes, but further information is required.** The beneficiaries targeted under the Project will include stakeholders from strategic agrifood systems in Grenada, with particular attention to cocoa agroforestry systems and associated value chains, particularly vulnerable to climate change. It is estimated that women will make up about 40% of the direct beneficiaries of the project and that young people 15% of the total beneficiaries. The Assessment of Gender and Social Inclusion and Gender Action Plan is included in Annex 5. However, the assessment and action plan could be better integrated in the main proposal. **CR12:** One of the constraints identified in the proposal relates to the aging farming community in rural areas (estimated at 9,300 farmers). Please clarify if/how will the project address adaptation challenges faced by aging farmers, and if these challenges were brought up during the consultations held. **CR13:** Please clarify: 1. How the fee structure for the compulsory Water Users Association (WUA) (Component 1, output 1.1.1) will be established for communities	**CR12. Cleared.** The updated proposal makes reference to the results of the consultations held regarding inclusive access to mechanization and equipment, and makes reference to the project's approach to address the needs of aging farmers (page 48). **CR13. Cleared.** The updated proposal clarifies the project's approach to determine the fee structure for WUAs, as well as to ensure an equitable distribution of benefits (page 40-41).

		benefiting from irrigation infrastructure and ponds under this sub-component. 2. how the project will ensure the equitable distribution of benefits to vulnerable communities, households, and individuals. **CAR2:** Please ensure that the gender-related activities and indicators identified in Annex 5 are integrated throughout the proposal, in the respective sections (i.e., description of project activities, results framework, ToC), so as to demonstrate that these aspects were considered in the project's design.	**CAR2. Cleared.** New references related to gender inclusion have been integrated in the description of the project's outputs (1.1.1, 1.1.4, 2.1.1, 2.1.2, 2.1.3., and 3.1.2.), and sex-disaggregated targets were added in the Results Framework (page 96-97), strengthening the link between the project's design and the Gender Analysis and Action Plan (Annex 5)
	5. Is the project / programme cost effective?	**Yes, but requires further clarification.** The proposal includes a description of alternative options to the proposed measures, indicating overall cost effectiveness. However, the cost effectiveness of activities under output 2.1.1. could be further clarified: **CR14:** Section C, pg. 60, indicates the amount of $1,261,039 for the training 450 beneficiaries (output 2.1.1). The amount seems high in relation to other budget lines, and the alternative measure (i.e., 'providing grants without training') requires further clarification.	**CR14. Not cleared.** The proposal does not integrate further clarification on the cost of the training under output 2.1.1. In other words, please consider adding a brief reference to what is included in the training (e.g. duration, modality) to provide a better understanding of the unit cost (VST $2,842; ET course $2,669). In page 62, the updated proposal makes

		CAR3: Please note that the proposal indicates that the Economic Analysis considered 7 years of project implementation (as opposed to 5) (see first paragraph in pg. 64) and integrated the total project cost for 'both' components (as opposed to three). Kindly correct.	reference to **450** people trained in VST (300) and BDT (150). The Results Framework (page 97) indicates "**500** (270)" as target for Output 2.1.1. The project activities description (pages 46-47) makes reference to **550**. The Budget table in page 101 makes reference to 450. Kindly check for consistency and clarity. **CAR3. Cleared.** The project implementation timeline has been corrected (page 66)
	6. Is the project / programme consistent with national or sub-national sustainable development strategies, national or sub-national development plans, poverty reduction strategies, national communications and adaptation programs of action and other relevant instruments?	**Mostly.** The proposal makes reference to alignment with national strategies in several sections, including reference to alignment with the National Adaptation Plan (NAP) and the Nationally Determined Contribution (NDC) as part of the description of project activities (Part II). Strategic alignment with relevant national policies and plans is detailed in section D. **CR15:** Grenada's Nationally Determined Contribution (submitted in 2020) should be added to Section D, Strategic Alignment, and consistency of the project with the NDC be demonstrated.	**CR15. Cleared.** Reference to the country's NDC was added in page 68, including referenced to the strategic alignment with ENRICH.
	7. Does the project / programme meet the relevant national technical	**Yes.** The project will comply with all relevant	**-**

	standards, where applicable, in compliance with the Environmental and Social Policy of the Fund?	national technical standards as outlined in its laws and regulations, particularly concerning climate, environmental and social aspects (Section E). These laws and regulations are presented in detail in the ESMP annex of the proposal.	
	8. Is there duplication of project / programme with other funding sources?	**Not likely.** The proposal includes a table addressing synergies with other programmes and projects being implemented in Grenada, or in the pipeline (Section F), and identifies the complementarity potential for the ENRICH project. However, further information is needed to avoid duplication with the *Advancing Transformative Agricultural Systems in Grenada through the Promotion of Integrated and Resilient Ecosystem* approaches throughout the cocoa value chain (ASPIRE) project, as IFAD is the Implementing Entity of both, and the same government unit will be implementing both projects. **CR16**: Given the potential overlap between the two projects, please provide further details on the boundaries between ASPIRE and ENRICH, including targeted beneficiaries and scope. Additionally, briefly expand on how the ENRICH project will coordinate and ensure synergies with the AG ADAPT initiatives. The statement "*During funding proposal preparation, IFAD will coordinate with FAO to identify*	**CR16. Cleared.** The updated proposal includes reference to the lack of overlap with the ASPIRE project, and to the project's approach to ensure articulation with the AG ADAPT initiative (page 72).

		areas of complementarity and overlap and define effective approaches to avoid duplication and maximize benefits to Grenadian farmers" should be revised accordingly. **CR17:** In light of the grant-making related mechanism to be established under Component 2, please consider exploring synergies with the GEF-funded Small Grant Programme (SGP) in Grenada to build complementarity with such an existing grant mechanism.	**CR17. Cleared.** The response to CR17 indicates that the SGP has a different scope of beneficiaries (CSOs and NGOs) with grants that are higher than those planned under the ENRICH project.
	9. Does the project / programme have a learning and knowledge management component to capture and feedback lessons?	**No.** **The project does not include a specific learning component although** Section G of the proposal detail the approach to learning and knowledge management **CAR4:** Please include a specific knowledge and learning component as required by the AF.	**-** **CAR4. Cleared.** Knowledge is also explicit in the description of Outcome 3.1., Component 3. Knowledge management was integrated in the title of output 3.1.1., and activity 3.1.1.4. (page 54-55).
	10. Has a consultative process taken place, and has it involved all key stakeholders, and vulnerable groups, including gender considerations in compliance with the Environmental and Social Policy and Gender Policy	**Yes, but further details are needed.** Section H of the proposal provides details on the consultative process conducted, including two missions and preliminary consultations with a number of stakeholders, including women. Annex 2 provides an overview of the consultation process and participants (including women and youth). Further	

	of the Fund?	details are needed regarding the outcomes of the process and their integration into the project's design, including gender aspects. **CR18:** Kindly confirm whether the consultation carried out and summarized in Annex 2 have addressed safeguard processes and outcomes (both the AF ESP as well as IFAD SECAP). **CR19:** Kindly confirm whether the project ESMP was made available for public consultations in a timely, effective, inclusive, and held free of coercion manner. **CR20:** Please clarify in which way was the consultative process was gender-responsive, and provide further details on gender-specific challenges. Please elaborate on the key consultation findings (in particular suggestions and concerns raised, and the way in which these were integrated in the project's design).	**CR18. Cleared.** Reference to the inclusion of safeguard processes and outcomes as part of the consultations has been added in Annex 2. **CR19. Cleared.** The ESMP has not been publicly disclosed yet. The response provided to CR19 indicates that it will be publicly disclosed upon completion of the review process, ensuring public consultation in an effective, inclusive and free of coercion manner. **CR20. PartiallyNot cleared.** Gender challenges are included in Annex 5, as part of the gender analysis. However, no further details were added on how the consultative process was gender responsive as part of Annex 2 on Stakeholder Consultation, or in section H of the updated proposal, on the Consultative process. Please refer to the AF Gender Guidance Document for further reference to the concrete principles, suggestions and recommendations on gender-responsive stakeholder participation and consultation: https://www.adaptation-fund.org/document/guidance-document-implementing-entities-compliance-adaptation-fund-gender-policy-2/

	11. Is the requested financing justified on the basis of full cost of adaptation reasoning?	**Yet to be demonstrated.** **CAR5.** Please clarify how output 3.1.2 would deliver its outcomes regardless of the success of the Caribbean Catastrophe Risk Insurance Facility Segregated Portfolio Company (CCRIF SPC), through which microinsurance products would be made available to smallholder farmers via Guardian General Insurance Limited and Hannover Re in the context of ENRICH.	**CAR5. Cleared**. The response provided to CAR5 indicates that in case that an agreement cannot be reached with the CCRIF, there are other institutions that can lead the process (i.e., UNDP's Insurance and Risk Finance Facility).
	12. Is the project / program aligned with AF's results framework?	**Yes.** The proposal specifies the alignment with Adaptation Fund revised strategic results framework adopted in 2019 (Section F). However, the table provided in part III.F has to be revised as per the instructions provided in the Annex 5 of the OPG. **CR21:** Kindly ensure that the table includes: i) project objective(s) indicator(s) have to be inserted in the "Project objective indicator(s)" column; ii) corresponding grant amounts have to be provided in the "Grant amount (USD)" columns (ensuring that the total figures equal the project activity cost); iii) the project outcomes have to be inserted in the "project outcome(s)" column and their corresponding indicators provided in the "project	**CR21. Cleared.** The updated proposal includes disaggregated amounts per Fund output.

		outcome indicator(s) section; and iv) the corresponding grant amount should be provided for each Fund output listed in the "Grant Amount (USD)" column (ensuring that the total figures equal the project activity cost). Please note that the grant amount needs to be disaggregated for each of the outputs.	
	13. Has the sustainability of the project/programme outcomes been taken into account when designing the project?	**Yes.** The proposal details the project's approach to sustainability for each of the outcomes in Section J, including replicability of the outcomes and exit strategy, to ensure that the benefits continue after project completion. Further details could be provided regarding the role of institutional partners in sustainability. **CR22:** The proposal states that "*institutional partners will assume responsibility for key governance and monitoring functions*", to ensure that climate-resilient agricultural systems are sustained (pg. 80). Kindly explain the arrangements through which this would be achieved.	**CR22. Cleared.** The updated proposal includes further details on institutional roles and sustainability arrangements (page 82).
	14. Does the project / programme provide an overview of environmental and social impacts / risks identified, in compliance with the Environmental and Social Policy and Gender Policy of the Fund?	**Yes, but additional clarifications are required.** The project was screened against the Adaptation Fund's fifteen Environmental and Social Principles and IFAD's nine Environmental, Social, and Climate Standards using the SECAP screening tool, and it was classified as Category B	

		(moderate risk). The project contains USP, with adequate provisions to ensure that the USPs will also be compliant with the ESP (explained in Section K and Annex 3). Specific type of activities to be financed under output 2.1.3 have been fully defined, resulting in only partially unidentified subprojects where only their location remains to be determined which already allows a pre-identification of environmental and social risks. A gender assessment and action plan is included in Annex 5 of the proposal. **CR23:** **1.** Please tick the column "No further assessment required for compliance" only for those principles for which no risks were identified (i.e., for Principles 7, 9 and 13). **2.** For Principle 3/Marginalized and Vulnerable Groups, please clarify in the "Potential impacts and risks" column what impacts and risks were identified vis-à-vis this principle. **3.** Please confirm whether or not an environmental management document for the proposed construction of hurricane resistant facilities is required, including specific permits for the construction. Specify the steps that will be taken to comply with the regulation and secure the	**CR23. Cleared.** Clarifications were added in the updated proposal, as follows: 1. Corrected in Table 12, Overview of ESP Risk Assessment (page 83-84) 2. Clarification on the risk related to Principle 3 was added in Table 12, Overview of ESP Risk Assessment, page 83. 3. Prior to any construction and rehabilitation works under ENRICH including the hurricane resistant facilities under outcome 1.1, the PMU will obtain relevant permits and approvals from the Physical Planning Unit (PPU). Clarifications added as part of the ESMP (page 154) and in page 142 of the updated proposal.

		permits, if applicable. **CAR6:** Noting that Principle 4 always applies, please demonstrate compliance with this principle, referring to the relevant guidance document, as necessary.	**CAR6. Cleared.** Compliance with Principle 4 was detailed as part of the updated proposal, page 83.
Resource Availability	1. Is the requested project / programme funding within the cap of the country?	**Yes.**	-
	2. Is the Implementing Entity Management Fee at or below 8.5 per cent of the total project/programme budget before the fee?	**Yes.**	-
	3. Are the Project/Programme Execution Costs at or below 9.5 per cent of the total project/programme budget (including the fee)?	**Unclear.** The Project Execution Cost is detailed in page 99 and is below 9.5% of the total budget (including fee). However, not all the staffing positions of the PMU are included. **CAR7.** Please check that staff positions and consultants, as well as travel, have been adequately grouped as part of the project's execution costs.	**CAR7. Not cleared.** Kindly clarify if the budget table in page 103 includes the Project Manager position. Please ensure that the names of these positions correspond to those included in page 87.
Eligibility of IE	1. Is the project/programme submitted through an eligible Implementing Entity that has been accredited by the Board?	**Yes.** Accreditation Expiration Date: **21 December 2025**	-

Implementation Arrangements	1. Is there adequate arrangement for project / programme management, in compliance with the Gender Policy of the Fund?	**Partially.** Section A, Part III, provides a description of the roles and responsibilities of the Project Sterring Committee (PSC) and the Project Management Unit (PMU), as well as an organization chart. Details on the role of key Specialists is missing. **CR24**: 1. Please specify the specialists and consultants that will be engaged as part of the PMU, including the 'Infrastructure Specialist' mentioned in the description of Component 1. Please ensure consistency and alignment between the proposed PMU roles, the proposed activities, and the budget. 2. Please provide additional information on how the arrangement for project management incorporate gender-responsive elements in compliance with the Gender Policy of the Fund.	**CR24. Not cleared**. The updated proposal identifies the list of PCU staff, as well as consultants (3) that will support Components 1-3, specifying that they will not be part of the PCU as they will be tasked with specific technical activities under each component (page 86-87). This includes the role of the 'rural infrastructure engineer' that will be supporting activities under Component 1. It also indicates that safeguards (ESMP) and gender aspects (GAP) will be conducted by consultants included in the M&E budget (page 94). However, as part of the PCU positions, the M&E Officer position was removed, and replaced by an 'Administrative Officer' position, who, in addition to administrative functions, would be responsible for: (a) M&E, (b) Knowledge management and communications, plus the oversight of the (c) ESMP implementation, GAP, and GRM (as per table 14, page 94),. This is a very wide range of technical skills and expertise, and it is unlikely that it can all be combined under the skillset of an Administrative Officer position. Kindly

		CAR7bis: Please ensure that the role of the stakeholders mentioned in the organizational chart are adequately explained in the proposal, including the Technical Working Group, and that there is consistency in the use of abbreviations (e.g., POC, PCU) and clarity in	consider disaggregating the tasks, so as to engage candidates with the necessary experience and skills to ensure robust oversight and implementation. **CAR7bis. Cleared.** The updated proposal includes details on the Technical Working Groups and the Project Sterring Committee (page 86) and uses the PCU abbreviation consistently.
	2. Are there measures for financial and project/programme risk management?	**Yes.** The proposal identifies all major risks (pg.86-88), their impact, probability and mitigation measures to manage them. **CR25:** Please categorize the risks identified in table 13 (e.g., financial, environmental, social, institutional etc.).	**CR25. Cleared.** Table 13 has been updated with a categorization of the risks identified (page 90-91)
	3. Are there measures in place for the management of for environmental and social risks, in line with the Environmental and Social Policy and Gender Policy of the Fund?	**Yes. However, additional information is needed.** An environmental and social risk analysis has been conducted as part of the project design, identifying potential environmental and social risks and impacts associated with project activities, including for those that are partially unidentified (small grants financed under Output 2.1.3). The analysis outlines expected impacts and mitigation measures. An ESMP has also been developed, included in Annex 3 of the proposal. ENRICH was screened against the Adaptation Fund's 15	

		Environmental and Social Principles, and a meaningful grievance mechanism will be put in place for the project. Annex 3 provides details on the screening and justification for the moderate risk classification (category B). It also provides details on the approach to Unidentified Sub-Projects (USP), given the demand-based approach of the small grants in component 2 (the type of interventions to be financed has been thoroughly identified as described in the activities' description, the specific locations of these interventions cannot be identified at the design stage). **CR26:** Please kindly state which ESP principle is triggered for each of impact/risk listed in the "Environmental, Social and Climate impacts" column of the ESMP (Annex 3, section 6). **CAR8**. Although the proposal indicates that the type of interventions to be financed has been thoroughly identified, the nature and characteristics of interventions planned under outputs 1.1.2, 1.1.3, 1.1.4, 2.1.3, and 3.1.2 remain largely unspecific (e.g., "Small works (e.g., irrigation systems, drainage)"; "Inputs (seeds, organic fertilizers)"; "Equipment (solar pumps, drip irrigation systems)"; "post-production processing facilities"). As a result; 1. the proposal should either	**CR26. Cleared.** ESP principles have been added for each of the impact/risk in the ESMP table, Annex 3, section 6, pages 154-156. **CAR8. Cleared.** The updated proposal acknowledges that specific technical characteristics of certain activities (outputs 1.1.2, 1.1.3, 1.1.4, 2.1.3) remain to be identified during implementation. Consequently, the proposal contains details about each these activities in Section 4, page 139 (Screening and categorization), and under Section 7, page 157-159 (Framework for E&S Management for USPs), in Annex 3, ESMP.

		expand on the nature and characteristics of such interventions by providing additional technical specifications (in case they are known) or acknowledge that the nature and characteristics of such interventions are yet to be determined during implementation, 2. reflect this in sections 4 and 7 of the ESMP accordingly, and describe in Part II.A how the nature and characteristics of these activities will be determined. **CAR9**. The proposal should describe in Part II.A how the exact locations of outputs 1.1.3, 1.1.4, 2.1.2 and 2.1.3 activities will be determined during implementation, acknowledge in the ESMP that these locations are yet to be determined during implementation ESMP and reflect this in relevant sections of the ESMP, notably 4 and 7. **CR27:** The ESMP should describe how activities funded in output 3.1.2 will be screened against the 15 principles of ESP, and mitigation measures included in the ESMP during implementation. **CR28:** The total budget for the implementation of the ESMP and	**CAR9. Cleared.** The updated proposal explains that location of outputs 1.1.3., 1.1.4, 2.1.2 and 2.1.3, will be determined through a participatory and evidence-based approach during implementation. This is described in Part A, page 30, in section K, page 85, and in Annex 3, ESMP. Including details on each of the outputs in page 157-158. **CR27. Cleared.** The updated proposal includes clarification on the screening of activities related to output 3.1.2., specifically the access to the microinsurance scheme, in Annex 3, page 143, related to Principle 2 on Access and Equity. The activity is also covered in the ESMP as part of ESP3. **CR28. Cleared.** The response provided

		project-level GRM is $74,100. Kindly consider if the allocated budget is sufficient, considering the scope of implementation detailed in Annex 3 (pg. 164).	to CR28 indicates that the allocated budget amount is deemed sufficient for implementing the ESMP and GRM. It clarifies that costs associated with implementing specific mitigation measures are already integrated into the budgets of related project activities, and that the day-to-day operation, implementation, and monitoring of the ESMP and GRM will primarily utilize PMU staff time, which is not included in the $74,100 allocation. The response also indicates that, at MTR, the situation will be assessed, and adjustments made as needed.
	4. Is a budget on the Implementing Entity Management Fee use included?	**Yes.** A breakdown of the Implementing Entity Management Fee is provided in page 99.	**-**
	5. Is an explanation and a breakdown of the execution costs included?	**Partially.** A breakdown of the Execution costs is included in page 99. However, the breakdown clarity can be improved. **CAR10:** Please ensure that the Execution costs include Staffing costs that are consistent with the PMU staffing positions identified in page 83 of the proposal, and explain any discrepancies.	**CAR10. Not cleared.** Please see CAR7 regarding the Program Manager position in the budget table in page 103, and CR24.
	6. Is a detailed budget including budget notes included?	**Yes. However additional information is required.** The proposal includes a detailed breakdown of each components' budget, at activity level, a detailed budget for the project execution costs (PMU), as well as for the Implementing Entity fees.	

		CAR11: Please add budget notes to clarify adequate resources are allocated in the project budget for gender-responsive implementation.	**CAR11. Cleared.** The updated proposal includes budget notes in Annex 5, Gender Analysis and GAP, Table 22, page 193.
	7. Are arrangements for monitoring and evaluation clearly defined, including budgeted M&E plans and sex-disaggregated data, targets and indicators, in compliance with the Gender Policy of the Fund?	**Partially** The proposal outlines preliminary arrangements for monitoring and evaluation and key milestones (section D), as well as a tentative budget for monitoring M&E (pg. 91) with provision for mid-term and terminal evaluation. The M&E is missing reference to the ESMP implementation. **CR29:** The proposal should clarify what budget lines would be used to cover costs of the M&E officer and M&E specialist, keeping in mind elements included in table 1 of the relevant AFB/PPRC document. **CAR12:** Please specify how the M&E plan and budget will address the management of the environmental and social risks.	**CR29. Cleared.** The updated proposal includes further details on the M&E budget, reflected in Section D, M&E arrangements, Table 14, page 94-95. **CAR12. Cleared.** The updated proposal includes reference to the oversight of environmental and social risks as part of the M&E workshop (Section D, M&E arrangements, page 94).
	8. Does the M&E Framework include a break-down of how implementing entity IE fees will be utilized in the supervision of the M&E function?	**Partially.** The proposal includes an M&E component budget in page 91, including IE fees. However, the budget breakdown can be strengthened. **CR30:** Please clarify if the M&E budget includes ESMP implementation (included in Annex 3).	**CR30. Cleared.** The updated proposal includes a revised M&E budget (table 14, p.93), including ESMP implementation, GAP and GRM implementation oversight.
	9. Does the project/programme's	**Partially.**	**CR31. Not cleared.** The revised proposal includes a second core

	results framework align with the AF's results framework? Does it include at least one core outcome indicator from the Fund's results framework?	The proposal includes a results framework with realistic, quantified expected results with indicators and targets (Section E), and includes a table (Table 16) showing the alignment between ENRICH's project Outcomes and output indicators, with those of the AF. However, several indicators and targets need to be adjusted to include gender responsive and disaggregated by sex as appropriate. **CR31:** Please note that the project result framework must include estimations for direct and indirect beneficiaries. Kindly clarify if both are reflected in the 8,000 indicated as 'total beneficiaries'. A second core indicator must be added if the project includes activities targeting the areas identified in AF results framework, namely (1) Early Warning System; (2) Assets Produced, Developed; Improved, or Strengthened; (3) Increased income, or avoided decrease in income or (4) Natural Assets Protected or Rehabilitated. Please refer to this document for guidance https://www.adaptation-fund.org/wp-content/uploads/2016/04/AF-Core-Indicator-Methodologies.pdf **CAR13:** Please note in addition to complying with CR31 above information must be included for the selected core indicators, completing the baseline and initial target information. https://www.adaptation-fund.org/wp-	indicator on linked to AF "*Assets Produced, Developed; Improved, or Strengthened*". The indicator is reflected in the updated Results Framework, in section E of the proposal. The estimation of total (direct) beneficiaries (8,000) requires further clarification. Please check the disaggregated numbers of beneficiaries provided in Section B, Project benefits (page 58), and clarify where needed (towards the 8,000 estimation of direct beneficiaries). Please ensure that they are aligned with the targets reflected in the Results Framework. Please add the total number of estimated indirect beneficiaries. The ha under improved management (which corresponds to the core indicator "natural assets protected or rehabilitated": this is an indicator at project goal level, however there are no subset of indicators at output level tracking impact against ha as unit of measurement. The table showing the project alignment with the AF SRF needs to include related output indicator for output 2.1, which is now missing. **CAR13. Not Cleared.** Please insert dedicated tables for the core indicators as per Methodologies for reporting Adaptation Fund core impact indicators

		content/uploads/2016/04/AF-Core-Indicator-Methodologies.pdf **CR32:** Please reflect gender responsive indicators and disaggregate indicators by sex, as appropriate. **CAR14**. Please review the 'Source' included in the Results Framework, and clarify what is the RIPES Program Report. Regarding Responsibility for reporting, please ensure consistency in the reference to 'PCU' (vs. 'PMU'). **CR33:** Please amend AF grant amount in Table under Part III Section F so that the costs for Component 3 as the indicator costs for AF outcomes 2 and 1 are lumped. **CAR15.** Please ensure that the budget is identified by each associated AF output/indicator on its own, and that budget totals of output indicators are not lumped together.	(For fully-developed proposals) (78 kB, DOC) **CR32. Not cleared.** While the Results Framework has been updated to include gender responsive indicators and disaggregation by sex, it is not completely aligned with the gender indicators and targets included in the GAP, Annex 6, page 190. Kindly ensure that all gender-related indicators and targets have been reflected accordingly in the RF (including using the same formulation for the indicators in both tables, to avoid confusion). **CR14. Cleared.** Reference to RIPES was removed, and PCU is now used consistently. **CR33. Cleared.** Table 16 in Part III section F has been revised accordingly, and budget figure has been disaggregated by Fund output. **CAR15. Cleared.** The budget is identified by AF output/indicators, and the totals of output indicators have been disaggregated (table 16, Section F, page 98-99).
	10. Is a disbursement schedule with time-bound milestones included?	**Partially** The proposal includes a disbursement	

		schedule (pg.99), however it does not include time-bound milestones relative to project inception and the annual reporting requirement. **CAR16.** Please include a description of milestones relative to project inception and the annual reporting requirement. Kindly ensure that the disbursement table complies with the prescribed AF format, available at *Disbursement Schedule Template* (***For fully-developed proposals***) *(18 kB, XLS)*	**CAR16. Cleared.** Table 18, Disbursement Milestone, has been added in page 103, using the AF format.

ADAPTATION FUND

FULLY DEVELOPED PROPOSAL FOR SINGLE COUNTRY

PART I: PROJECT INFORMATION

Title of Project/Programme: Enhancing the resilience of vulnerable small Island Communities to climate change Hazards (ENRICH)

Country: Grenada

Thematic Focal Area: Agriculture

Type of Implementing Entity: Multilateral Implementing Entity

Implementing Entity: International Fund for Agriculture Development

Executing Entities: Ministry of Economic Development, Planning, Tourism, ICT, Creative Economy, Culture, Agriculture, and Lands, Forestry, Marine Resources and Fisheries and & Cooperatives of Grenada

Amount of Financing Requested: $ 10,000,000 (in U.S Dollars Equivalent)

Letter of Endorsement (LOE) signed: Yes ☒ ☐ No ☐ ☐

NOTE: The LOE should be signed by the Designated Authority (DA). The signatory DA must be on file with the Adaptation Fund. To find the DA currently on file check this page: https://www.adaptation-fund.org/apply-funding/designated-authorities

Stage of Submission:

☐☒ This proposal has been submitted before including at a different stage (**concept**, fully-developed proposal)

☐☐ This is the first submission ever of the proposal at any stage

In case of a resubmission, please indicate the last submission date: 4/3/2023

Please note that fully-developed proposal documents should not exceed 100 pages for the main document, and 100 pages for the annexes.

Table of Contents

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Abbreviations and Acronyms

AR5	IPCC 5th Assessment Report
AR6	IPCC 6th Assessment Report
BNTF	Basic Needs Trust Fund
CATIE	Tropical Agricultural Research and Higher Education Center
CARICOM	Caribbean Community
CCCCC	Caribbean Community Climate Change Centre
CDB	Caribbean Development Bank
CIAT	International Center for Tropical Agriculture
CMIP5	Coupled Model Inter-comparison Project - Phase 5
CSA	Climate Smart Agriculture
ENSO	El Nino South Oscillation
ESMP	Environmental and Social Management Plan
ET	Entrepreneurship Training
FAO	Food and Agriculture Organization of the United Nations
FFS	Farmer Field School
G-CREWS	Climate Resilient Water Sector in Grenada (G-CREWS)
GDP	Gross Domestic Product
GEPAP	Gender Equality Policy and Action Plan
GIDC	Grenada Investment Development Corporation
GOG	Government of Grenada
GREP	Grenada Rural Enterprise Project
IFAD	International Fund for Agricultural Development
IMF	International Monetary Fund
IPCC	Intergovernmental Panel on Climate Change
IPM	Integrated Pest Management
ITCZ	Inter-Tropical Convergence Zone
M&E	Monitoring and Evaluation
MAREP	Market Access and Rural Enterprise Development Programme
MED	Ministry of Economic Development, Planning and Cooperativesof Economic Development, Planning, Tourism, ICT, Creative Economy, Culture, Agriculture, and Lands, Forestry, Marine Resources and Fisheries and & Cooperatives of Grenada
MOUs	Memorandums of Understanding
NAP	National Adaptation Plan
NAWASA	National Water and Sewage Authority
NCCC	National Climate Change Committee ()
NCCP	National Climate Change Policy
NDC	Nationally Determined Contributions
NDMA	National Disaster Management Agency
NSADP	National Sustainable Agriculture Development Plan
OECS	Organization of Eastern Caribbean States
PSC	Programme Steering Committee
RCP	Representative Concentration Pathway
RDU	Rural Development Unit
RWH	rainwater harvesting
SAEP	Climate Smart Agriculture and Rural Enterprise Programme
SALF	Secretariat of Agriculture, Lands and Forestry within MED
SDGs	Sustainable Development Goals
SECAP	Social, Environmental and Climate Assessment Procedures
SED	Secretariat of Economic Development, Planning, Tourism, Creative Economy within MED
SIDS	Small Island Developing State
SLR	sea-level rise
SPI	Standard Precipitation Index
SST	Sea Surface Temperature
UMIC	Upper Middle-Income Country
UNDESA	United Nations Department of Economic and Social Affairs
VST	Vocational and Skills Training

Map of the project area

IFAD

The designations employed and the presentation of the material in this map do not imply the expression of any opinion whatsoever on the part of IFAD concerning the delimitation of the frontiers or boundaries, or the authorities thereof.

Map compiled by IFAD | 15-10-2024

A. Project Background and Context

Sensitivity and adaptive capacity to climate change in Grenada

Country context

Grenada is a Small Island Developing State (SIDS), highly vulnerable to external shocks and climate change (CC) effects. Grenada's population is 113,703 (as of 2021 statistics) living on 344 square kilometers (95% on the main island of Grenada and 5% on the two minor islands of Carriacou and Petite Martinique, which account for 34 square kilometers).

The country's population has remained fairly stable for decades. There are approximately 36,600 households, with 71,238 living in rural areas in 2019 (Rural Population 19-2021, 2020). Around 63% of the total population lives in rural communities spread across 7 parishes: Saint Mark, Saint Patrick, Saint Andrew, Saint David, Saint George, and Saint John, as well as the dependency of Carriacou. The median age is 32.[1]

Economic, social and environmental considerations

Grenada is a service-based economy. The main driver is the hospitality industry which accounts for over 40% of employment. The agricultural sector contributes with 54% of exports and provides employment to 10% of the employed population[2]. The country has been negatively impacted by external shocks in the past 15 years. In 2004-2005 hurricanes Ivan and Emily devastated the main export commodity, the nutmeg industry. In total, Grenada lost 90% of their nutmeg trees (Windward Islands Research and Education Foundation Research Institute Annual Report, 2004, as quoted by UNDP[3]). The observed increase in the number of more intense storms (Category 4 and 5 hurricanes) (CCCCC, 2015), is likely to have large impacts in Grenada's economy and livelihoods.

The country's economy showed a consistent upturn trend when the Covid-19 pandemic halted tourism inflows, with severe implications for the tourism sector, which is a key pillar for Grenada's economy. The Covid-19 pandemic was confirmed to have reached Grenada on March 22, 2020. Despite having reached the level of community spread within one month, lockdowns, curfews and social distancing protocols contributed towards a decline in cases and, by June 18, the Ministry of Health declared zero active cases. The second half of the year saw 41 reported cases by December 5th, with 2 active cases and 39 recoveries. Although the Government of Grenada (GOG) was successful in keeping the spread of the virus under control, the pandemic had devastating effects on the economy and employment. Real GDP shrank by 14 percent in 2020, mainly due to the adverse impacts on the tourism industry, which accounts for over 80 percent of Grenada's total exports.[4] A stimulus package announced by the government on March 20, 2020 offered payroll support to businesses, income support to self-employed persons, and an unemployment benefit, among other measures, for a three-month period to eligible citizens.

However, real GDP is estimated to have expanded by 5.6 percent in 2021. Stay-over tourist arrivals picked up strongly in the last months of 2021 but remained at only 25 percent of pre-crisis levels for the year as a whole. Construction and agriculture did, though, rebound faster. The fiscal balance excluding interest payments is estimated to have maintained a surplus of around 2 percent of GDP and public debt declined to 70 percent of GDP in 2021 compared to 108% in 2013, which was mainly the result of growth-friendly fiscal consolidation and sustainability measures by the

[1] The World Bank Data, 2021 : https://data.worldbank.org/indicator/SP.RUR.TOTL.ZS?locations=GD

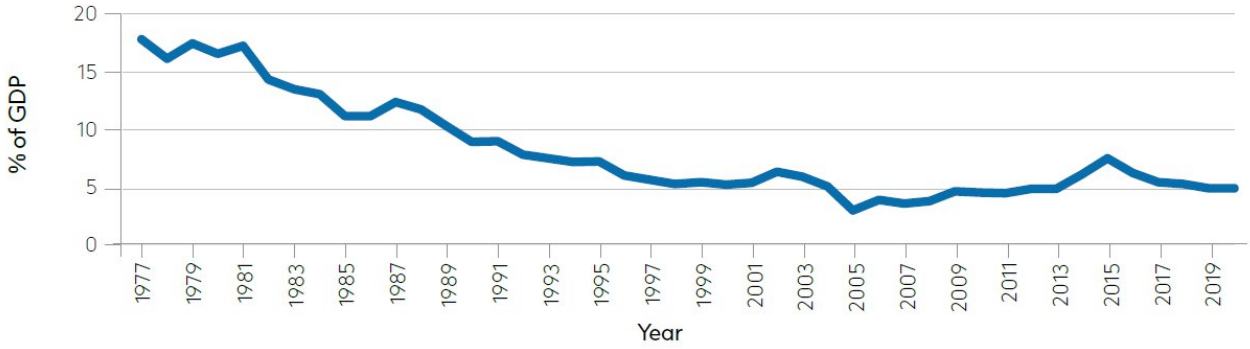
[2] IFAD, 2021 : https://www.ifad.org/documents/38711624/40089510/CSN+Grenada+2610+FINAL+with+map.pdf/142d0bcc-1372-5c34-f174-2d8a5905b5a9?t=1637232683452

[3] https://www.bb.undp.org/content/barbados/en/home/ourwork/environmentandenergy/successstories/bringing-growth-and-health-to-the-grenadian-nutmeg-industry-.html#:~:text=In%20total%2C%20Grenada%20lost%2090,Institute%20Annual%20Report%2C%202004).

[4] IMF, 2022 : https://www.imf.org/en/News/Articles/2022/02/25/grenada-staff-concluding-statement-of-the-2022-article-iv-mission

government.[5] Real GDP is projected to expand by 4.8 percent in 2023[6]. Agriculture is the only sector with positive growth rates in both scenarios. Agricultural exports would become the main source of foreign exchange in the next two years in the absence of tourism inflows. However, the contribution of agriculture to GDP in Grenada is declining in the past decades (figure 1).

Figure 1: Contribution of agriculture to GDP in Grenada 1977 to 2020. Source: CANARI-NEA, 2023.



In 2020, approximately 30% of the population were poor, with 3.5% living in extreme poverty[7]. Unemployment levels have been extremely high since 2008: average unemployment rates have been consistently over 20% for several years and is a concern particularly among youth, whose unemployment rates are above 40%, and even higher for females.[8]

Table 1 Basic Statistics and Population – Grenada.

Physical areas	**Value**	**Year**
Area of country (Sq.km)	340	2020
Agricultural land (permanent meadows and pasture + cultivated land) (Sq.km)	80	2020
As percentage of total area of the country (%)	23.5	2020
Population		
Total population	113,015	2021
Rural population	71,545	2021
Rural population (%)	63	2021
Population density (People per sq. km)	331	2020
Economy and development		
Gross Domestic Product (GDP) (current US$ million)	1,120	2021
Value added in agriculture, forestry (% of GDP)	5.1	2021
GDP per capita	9928.6	2021
Human Development Index (highest = 1)	0.6	2020
CPIA Gender Equality Rating (1 = low, 6 = high)	3.5	2021

Source: World Bank Data, 2022

As a SIDS, Grenada has inherent characteristics that make it vulnerable to the adverse impacts of climate change and extreme weather events. Given that its economy depends on a relatively limited number of economic activities and outputs that are largely climate-dependent and climate sensitive, Grenada is and will be disproportionately impacted by it. Available climate screening studies indicate that in 2018, "13.5% of national budget was at risk of being negatively affected by

[5] World Bank, 2022, Grenada - Recovery and Resilience Development Policy Credit (English). Washington, D.C. : World Bank Group. http://documents.worldbank.org/curated/en/143161651761820410/Grenada-Recovery-and-Resilience-Development-Policy-Credit
[6] IMF, 2022 : https://www.imf.org/en/News/Articles/2022/02/25/grenada-staff-concluding-statement-of-the-2022-article-iv-mission
[7] UNICEF, 2021 : https://www.unicef.org/easterncaribbean/media/2961/file/GenU%20Grenada%20fact%20sheet.pdf
[8] World Bank, 2022 : https://data.worldbank.org/indicator/SL.UEM.TOTL.NE.ZS?locations=GD

climate change and 86% of the economy had an active link to climate change". That is, the large majority of the economic sectors, and a seventh of the national budget are exposed to climate risks, including extreme events such as more intense storms (Category 4 and 5 hurricanes).

Although Grenada is classified as an Upper Middle-Income Country (UMIC), as a SIDS it is vulnerable to external environmental and economic shocks. In particular, the country was affected by hurricanes in 2004-2005 and by the downturn in tourism following the global financial crisis of 2008-2012. Grenada's economy was also impacted by the Covid-19 pandemic, especially after the closing of borders in March 2020, which affected the economy, especially due to the impacts on the tourism industry.[9] In 2024, Hurricane Beryl dealt a severe blow to Grenada's economy. The hurricane caused widespread damage to infrastructure, homes, and businesses, further straining the nation's economic resources. The tourism sector, which is crucial to Grenada's economy, was particularly hard hit as the destruction led to cancellations, a decline in visitor arrivals, and significant financial losses. In addition to physical damages, the hurricane also disrupted agricultural activities, leading to losses in crop production, which compounded the economic challenges faced by the island. The recovery from this disaster has added pressure on the government's fiscal capacity, necessitating increased international aid and further highlighting the vulnerability of Small Island Developing States (SIDS) to extreme weather events.

Grenada retains considerable natural forest cover in highlands, which is important for the protection of watersheds that serve as sources of irrigation in periods of water scarcity. Forest and protected areas cover 30% of the main island, with perennial crops (spice and fruit plantations) accounting for a further 31%. Annual crops cover just 5% of land area and there are no permanent pastures. A notable feature of Grenada land use is the large amount of unproductive land, i.e., abandoned cropland and shrub and grassland, which account for 20% and 5% of the total land area, respectively. On the second largest island, Carriacou, the climate is drier and almost 60% of the island is classified as shrub and grassland. Pasture and grazing accounts for almost 25% of land area, and forests only 5%.[10]

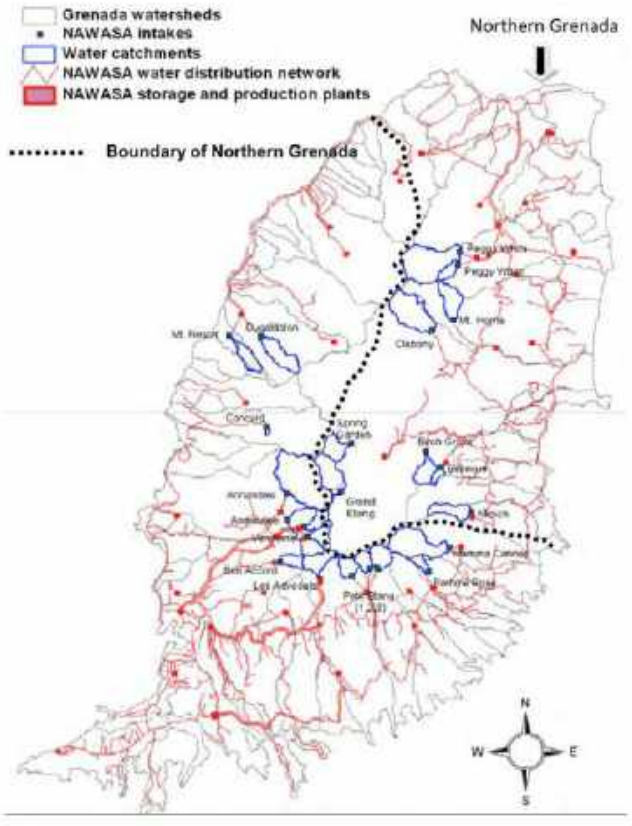
Water resources

Overall, there are 71 watersheds within Grenada's forested areas. All of the major watersheds have perennial flows, though these are greatly reduced during the dry season. Grenada's natural water resources include lakes (Grand Etang, Lake Antoine, Levera Pond), waterfalls (Concord, Seven Sisters, Annandale, Tufton Hall, Mt. Carmel), and their rivers and streams. The magnitude of variability and the timing and duration of periods of high and low supply are increasingly unpredictable, particularly during the dry season.

According to the Grenada National Water Policy[11], approximately 98% of Grenadians have access to improved water supply, with most domestic users now metered. Drinking water primarily comes from dams in the northern mountain ranges and is distributed via gravity systems. Groundwater contributes only about 7% of the annual total of 14.1 million m³ and is mainly used during dry seasons when surface water drops by 25%. Two major private entities use desalination, and rainwater harvesting supplements domestic supplies in Carriacou and Petite Martinique. All public water is treated to WHO standards, and NAWASA and the Ministry of Health monitor water quality (UNDESA, 2012). Wastewater reuse in Grenada is limited but gaining attention due to water scarcity. Efforts are needed to improve public perception through education and ensure wastewater treatment meets quality standards for hygiene and public health.

Figure 2 Grenada's water supply and distribution network (NAWASA and SALF-Land Use Division)

[9] Ibid.
[10] Copernicus Global Land Cover, 2019
[11] GoG, 2020 : https://climatefinance.gov.gd/wp-content/uploads/2019/10/Grenada_National_Water_Policy_Dec20.pdf



Still according to the Grenada National Water Policy, Grenada's agriculture relies mostly on rainwater (98% of arable land), with agricultural water demand estimated at 15% of the total. Large-scale farms use river water (92%), while small gardens use treated public mains water (6.5%). Livestock production also relies on public water, but wastewater treatment before discharge is minimal. Rainwater harvesting (RWH) is common in northern Grenada and the smaller islands of Carriacou and Petite Martinique, where it serves as a primary potable water source. RWH is also used in livestock production and vegetable farming and is promoted for climate-smart agriculture and to supplement public water supply.

The increased understanding of the impacts of seasonal variations in water supply and the increased demands have, over time, heightened levels of awareness of watershed management issues. While the reliability of potable water supply has improved over the past ten years in Grenada, concerns remain over levels of pollutants and watershed degradation, water shortages during the dry season, the state of water storage and distribution infrastructure, inadequate financial and technological resources and poor human resources capacity, all of which place constraints on sustainable water management. Additionally, Carriacou and Petite Martinique, which are both smaller in size compared to Grenada and are both located at lower elevations, receive less rainfall, with intermittent stream formations. There is heavy reliance on rainwater harvesting and cistern systems to meet water demands. Agricultural production on both islands is significantly impacted by a lack of suitable water supply.[12]

Rivers have traditionally provided an important source of rural household water. The continued

[12]CARIBSAVE, 2012: https://climatefinance.gov.gd/wp-content/uploads/2021/01/CARIBSAVE-Climate-Change-Risk-Profile-for-Grenada-Summary-Document.pdf

importance of the source of water supply is manifested during severe dry seasons and in the aftermath of hurricanes and tropical storm induced disasters.

An important source of water use of crop and livestock production are rainwater harvesting (RWH) and abstractions from rivers. RWH has declined with the improvement of public water supply. RWH ponds have been used in livestock production and, in a few cases, for the provision of water for intensive vegetable production[13].

Forest and biodiversity

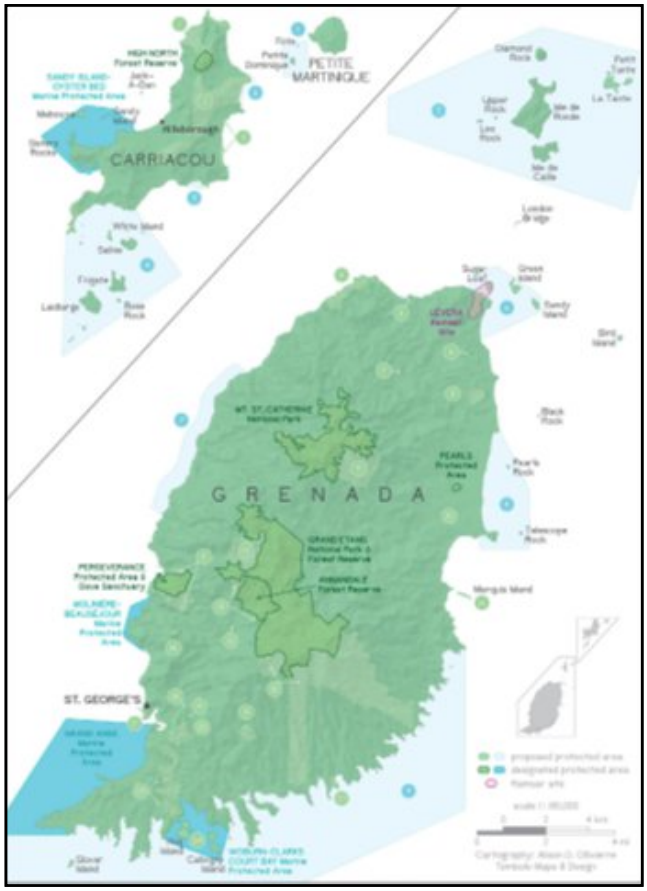
Most terrestrial forest ecosystems in Grenada are currently in a recovery phase dominated by secondary forest with pockets of climax forest. According to Beard's classification, these include six forest communities: cloud forest; rain forests and lower montane rain forest; evergreen and semi evergreen seasonal forest; deciduous forest and dry woodlands; littoral woodland; and mangrove forest. Although the national forest cover is estimated at 17%, currently protection exists for approximately six (6) forest areas, known as reserves in Grenada, and not all forest types are represented in these areas. Several communities are located within and in close proximity of the forested areas, which support their livelihoods. Non-timber forest products, primarily screw pine (Pandanus utilis) and bamboo (Bambusa vulgaris) are harvested and utilized for making baskets and other handicrafts. In Carriacou, a major obstacle to the regeneration of natural vegetation, other than the conversion of land for development, is the effect of grazing by livestock. Where grazing is intense, particularly in the dry season, soil erosion becomes more severe[14]. Trees and forests in Grenada are also economically important for their role in ecotourism and recreation.

From 2000 to 2012, Grenada had an average annual deforestation rate of 0.29%. Research on land-based pollution in Carriacou highlighted deforestation as a cause of erosion and sedimentation[15,16]. Studies also observed that clear-cutting near the Beausejour River often exceeded the area actually used, leading to erosion, sediment runoff, and increased nutrient levels in the river after rainfall, indicating the presence of agricultural chemicals.[17] Clearing land near rivers for agriculture exacerbates soil erosion, which can cause landslides and impact both the quality and quantity of domestic water supplies by reducing reservoir capacity through sedimentation. For example, Grand Etang Lake is shrinking, partly due to sedimentation, despite the presence of dams.[18]

Despite its small size, Grenada possesses a high degree of biodiversity, with natural ecosystems ranging from natural rain and dry forests, terrestrial agricultural systems to fresh water systems, mangroves forests, and coastal and marine ecosystems. Like other Small Island Developing States (SIDS), Grenada faces threats to its biodiversity from national, regional, and global sources. Although Grenada has sovereign control over its land and offshore Exclusive Economic Zone (EEZ), many significant stressors—such as climate change, ocean acidification, pollution, overharvesting of marine species, and marine habitat degradation—are beyond its control and exceed its national institutional capacity to manage effectively.[19]

Figure 3: Marine and Terrestrial Protected Areas in Grenada.

[13] IFAD, 2019 : https://www.ifad.org/en/w/projects/2000001475
[14] Ibid.
[15] Williams, E.A 2007. Land Based Sources of Marine Pollution in the Grenadine Islands. MS Thesis. Cave Hill: University of the West Indies. &
[16] Moore, G. E., Gilmer, B. F. and Schill, S. R. (2015) 'Distribution of Mangrove Habitats of Grenada and the Grenadines', Journal of Coastal Research, 31(1), pp. 155– 162. doi: 10.2112/JCOASTRES-D-13-00187.1.
[17] Nimrod, S., Franco, C. and Andrews, C. (2013) Nutrient and Sediment Inputs of the Beausejour River and the Impacts It May Have on the Adjacent Coral Reef System in the Moliniere Beausejour Marine Protected Area. Washington D.C.: Organization of American States (OAS).
[18] Cooper, B., Mings, L., Lindsay, K. and Bacle, J. (2011) Environmental and Socioeconomic Baseline Studies Grenada Site Report for Grand Etang and Annandale Forest Reserves. OPAAL.
[19] GoG, 2023 : https://canari.org/wp-content/uploads/2024/06/CANARI-NEA-Report-2023_Summary_Final-Digital.pdf



Source: GoG-NEA, 2023

These ecosystems house many endemic, threatened and endangered species and are the source of various ecosystem goods and services which support the livelihood of the Grenadian population. These systems are also threatened by the impacts of climate change and natural disasters infrastructure development, habitat degradation and loss, use of genetically modified organisms, unsustainable production and consumption, over exploitation of resources among other factors. Additionally, the country's biodiversity is characterized as particularly fragile and vulnerable to external shocks, such as extreme weather like the hurricanes Ivan (2004), Emily (2005) and Beryl (2024), the global economic slowdown that began in 2008, and extreme drought conditions in 2009, 2010, and 2024.[20] Taking these factors into consideration, the preservation of germplasm for specific crops such as cocoa, nutmeg, and other tree crops is of great importance for the continuity of their production. The management of plant genetic resources is limited in Grenada, with no effective mechanism in place to record and monitor activities in this area. While emphasis is being placed on the revitalization of the cocoa and nutmeg industry, the contribution of other crops such as coconut, mangoes, paw-paw, cassava, yams, dasheen, tannia, sweet potato and beans towards food security, value added and income generation cannot be overlooked. At the same time, population growth, infrastructural development, particularly for housing and tourism, as well as unsustainable regional and local production and consumption patterns, drive the increasing demand for, and extraction of raw materials and other natural resources, as well as conversion of natural environments to generally unsustainable productive systems.

[20] IFAD & IFRC, 2024: https://www.ifrc.org/article/hot-and-dry-small-caribbean-island-nation-grenada-struggles-drought-heatwaves-and-fire

Agriculture

The agriculture sector employs 24 percent of Grenadian citizens[21] and contributes primarily to the wellbeing and livelihood of the nation. Grenada has a diverse agricultural sector consisting of permanent crops, such as nutmeg, cocoa, banana, sugar cane, citrus, avocados, spices, breadfruit, mangoes, soursop, and other fruits, as well as temporary crops such as pigeon peas, beans, peppers, sweet potatoes, dasheen, yam, tannia, cabbage, tomatoes and other vegetables. There are relatively few large areas under crop monoculture, which indicates high agricultural biodiversity. Attempts are currently being made by the Pest Management Unit to develop less chemically dependent pest and disease control systems known as Integrated Pest Management. There are initiatives to increase organic farming thus reducing fertilizer use in Grenada as a whole.

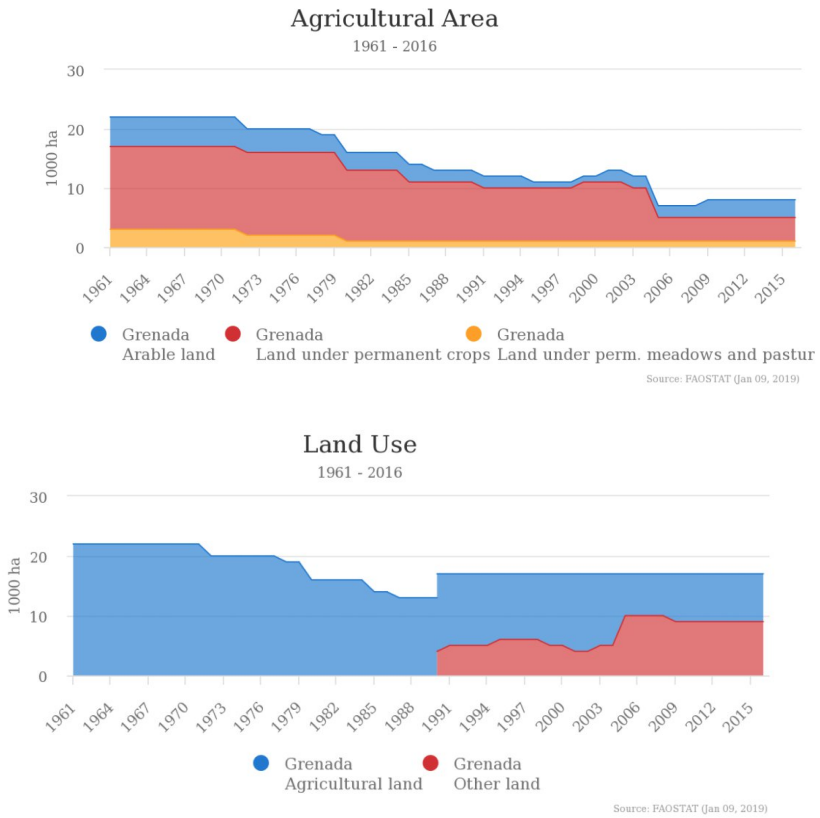
The principal permanent crops in Grenada in terms of production value and land-use coverage are nutmeg and mace, other spices, tropical fruits and vegetables, cocoa, and livestock. Grenada is the world's second largest exporter of nutmeg. In 2011, production of nutmeg was twice as high as in the aftermath of the hurricanes Ivan (2004) and Emily (2005), but still less than 15% of 2003–2004 volumes. In contrast, cocoa production had almost recovered to pre-hurricane levels by 2011. The top exports of Grenada are nutmeg, mace and cardamom ($9.01 million in 2020), non-fillet fresh fish ($8.8 million), cocoa beans ($2.85 million), and other fruits ($2.23 million).[22] Soursop is considered by the Government of Grenada to be a promising area and the country is currently the only one permitted to export the fruit to the US market. These crops are cultivated alongside other tropical fruits in more extensive plantations in upland areas, typically 5-7 hectares in size. Small ruminant farming is the principal agricultural activity on the island of Carriacou. Over 80 percent of farmers in the fruits, vegetables, and roots and tubers subsectors are considered small-scale farmers, farming on less than half an acre or 0.2 hectares. Production of fruits, vegetables, and roots and tubers at this scale is primarily for subsistence and occasional sale in local markets, and there are just a few larger, commercial growers. The area of agricultural land has fallen markedly since the 1960s due to conversion to manufacturing, tourism, and residential uses, as well as abandonment of lands owned by absentee landlords. For many smaller landowners, farming is no longer their principal economic activity.

Some of the crops grown have increased slightly both in terms of the number of farms reporting and the area. It is important to note that there has been an increase in the area of cocoa by well over 324 hectares and of bananas by almost 227 hectares. The aforementioned crops were significant contributors to the island export earnings. These increases were a result of a number of government interventions taken after Hurricanes Ivan and Emily in 2004 and 2005 respectively.[23] However, in spite of these productivity improvements, the total number of arable land (hectares) has been decreasing since 1961 due to increased urbanization and land demand for tourism facilities (Figure 2).

Nutmeg, which is one of the island's most important crops (in quantity and value), provides significant earnings from exports. However, this crop has not been as successful in increasing the area under production; instead, it has declined. Nevertheless, the number of farms has increased by approximately 28%. Plantain on the other hand experienced a decline in farms.[24]

[21] NSDP, 2019 : https://www.finance.gd/docs/NSDP2020-2035i.pdf
[22] OEC: https://oec.world/en/profile/country/grd
[23] Grenada Agriculture Census: https://microdata.fao.org/index.php/catalog/1600
[24] Ibid.

Figure 4 (A) Agricultural Area 1961 - 2016; and (B) Land Use Change 1961-2016.



Source: FAOSTAT, 2019

Soursop, a tropical fruit, is another highly relevant crop, both for domestic consumption and for export. There are also about ten small processors of soursop-cottage type operators for agro-tourism. Over the last four years, the Secretariat of Agriculture, Lands and Forestry within MED (SALF) and the Marketing and National Importing Board, have invested significant resources in the expansion of soursop cultivation given the opening of the US market.

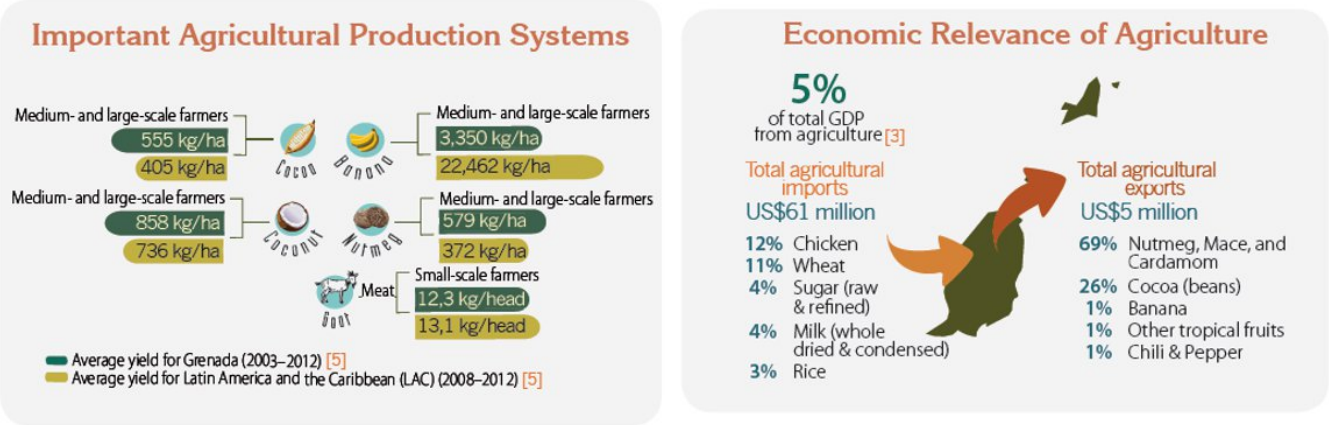
A potential opportunity to increase the climate change resilience of Grenadians lies in the agricultural sector. Even though agriculture and fisheries represent between 4%-7% of GDP in the past five years, their contribution to exports is significant: Fish, nutmeg, cocoa, mace, soursop and spices are the main export commodities representing approximately 90% of the sector's international sales. Overall, however, Grenada remains a net food importer, with approximately 80% of the food consumed not being produced domestically and local production faces serious challenges[25].

Unsustainable agricultural practices pose a significant threat to Grenada's environment. The clearing of land for commercial agriculture has resulted in the most severe environmental impacts[26]. These poor land-management practices are exacerbated by governance challenges, the lack of modernization in the agricultural sector through appropriate national development policies, the absence of key land policies, incomplete sectoral strategies, land tenure issues,

[25] IFAD, 2021 : https://www.ifad.org/documents/38711624/40089510/CSN+Grenada+2610+FINAL+with+map.pdf/142d0bcc-1372-5c34-f174-2d8a5905b5a9?t=1637232683452
[26] Convention on Biological Diversity (CBD) (2020) Grenada- Main Details. Available at: https://www.cbd.int/countries/profile/?country=gd

climate variability, and other external factors[27].

Figure 5. (left) Agricultural Production Systems; (right) Economic relevance



Source: (WB et al., 2014).

The availability and accessibility of the country's limited land resources are further constrained by its steep topography, high rainfall levels, inefficient land tenure system, uncontrollable land prices, and unregulated land use, among other factors. Growing competition and demands among multiple land users are increasing the pressures on this limited and diminishing resource. For example, land degradation due to overgrazing is a critical issue on Carriacou and Petite Martinique. During the dry season, livestock are left to roam freely in search of pasture, leading to excessive grazing. This has resulted in significant damage to the land, making it increasingly challenging for farmers to sustain crop and livestock production[28].

Another important constraint relates to an aging farming community in rural areas (estimated at 9,300 farmers), using traditional technologies and approaches. Large parts of the farming community are part-time farmers who are retired or employed in other sectors and regard agriculture as an additional source of income. The aging farming community also affects land use: at present around 28 percent of the available agricultural land is left uncultivated, while access to land remains a constraint for young people[29].

[27] GoG, 2019: Grenada Drought Management Plan. St. George's, Grenada: https://knowledge.unccd.int/sites/default/files/country_profile_documents/1%2520FINAL_NDP_Grenada.pdf

[28] Cashman, A. and Yawson, D. (2019) 'Water, livelihoods, and migration in SIDS: Climate Change and Future Prospects for Carriacou, West Indies', Resources, 8(4), 174. https://doi.org/10.3390/resources8040174

[29] IFAD, 2021 : https://www.ifad.org/documents/38711624/40089510/CSN+Grenada+2610+FINAL+with+map.pdf/142d0bcc-1372-5c34-f174-2d8a5905b5a9?t=1637232683452

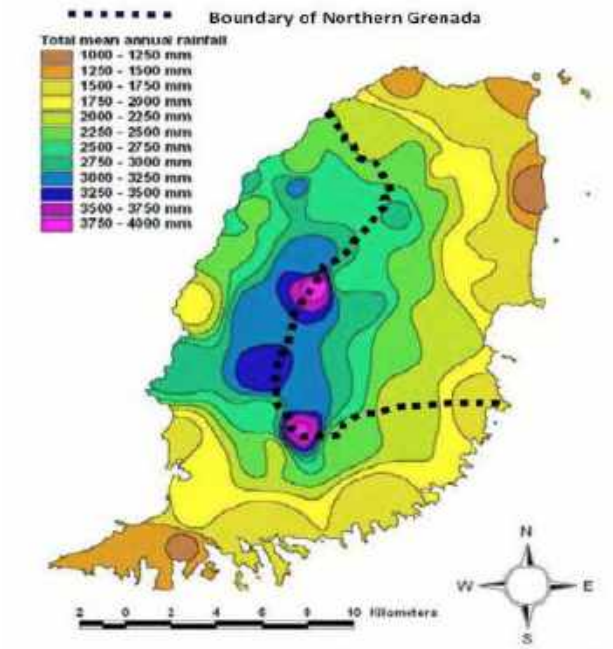
Exposure to climate change: current climate, observed and projected changes

Climate characterization.

According to the Köppen classification, most regions in Grenada lie in the Tropical Savanna Climate zone. The climate is influenced by Tropical North Atlantic Hurricane activity, the North Atlantic Sub-Tropical High, the North-East Trade Winds, and weather associated with the migrating Inter-Tropical Convergence Zone (ITCZ) by the El Nino South Oscillation (ENSO) phenomenon (Government of Grenada, 2017).

Observed data from the World Bank for Grenada[30] shows that Grenada's annual average temperature is around 27°C, with slight variation during the annual cycle. The mean maximum temperature is 31°C, while the mean minimum is 24°C. Annual rainfall ranges from 1000 to 1500 mm in drier coastal locations to approximately 4000 mm in the central mountainous areas. The dry season typically goes from January to May and the rainy season from June to December.

Figure 6 Mean annual rainfall on Mainland Grenada

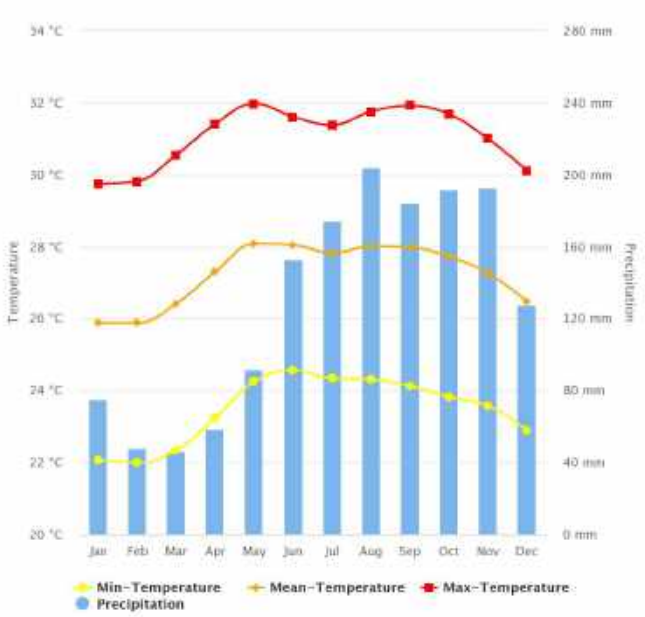


source: adapted from Land Use Division, Secretariat of Agriculture, Land and Forestry within MED

Carriacou and Petit Martinique generally receive lower levels of rainfall and, during the dry season, can experience severe drought conditions. Seasonal temperature and precipitation can be seen in Figure 4. Evaporation rates, particularly in the dry season, are high. The areas where the difference between the monthly rainfall and potential evapotranspiration is negative, are vulnerable to droughts and from time to time can experience severe water shortages due to extremely low rainfall.

[30] World Bank CCKP : https://climateknowledgeportal.worldbank.org/country/grenada

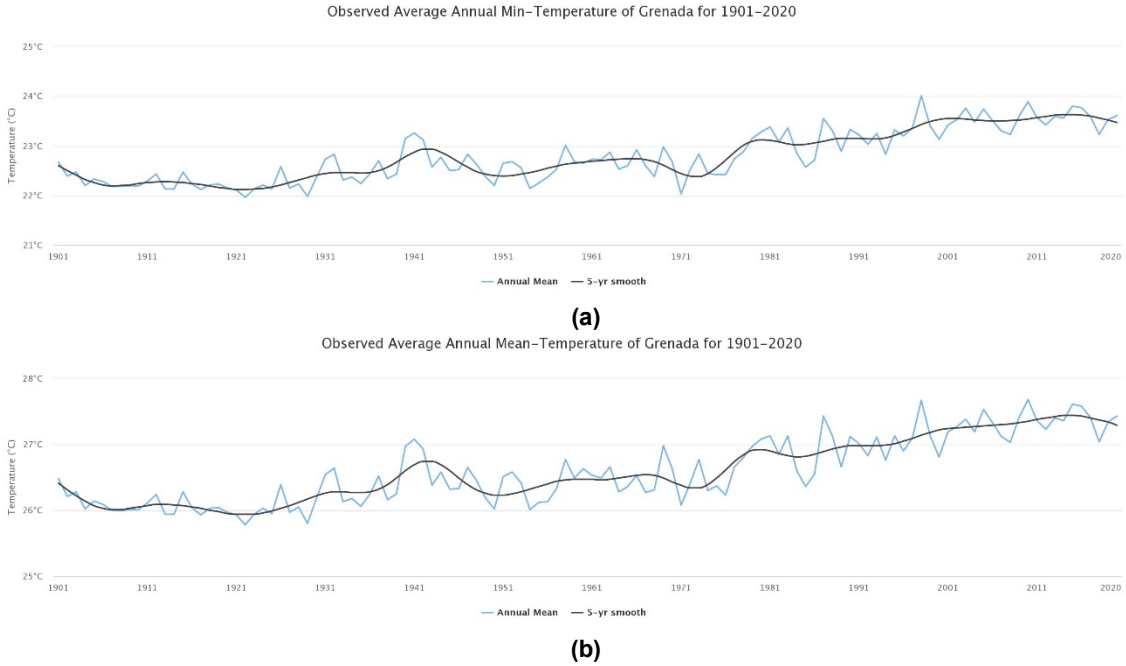
Figure 7: Monthly climatology of minimum, mean and maximum temperature and precipitation over 1991-2020.

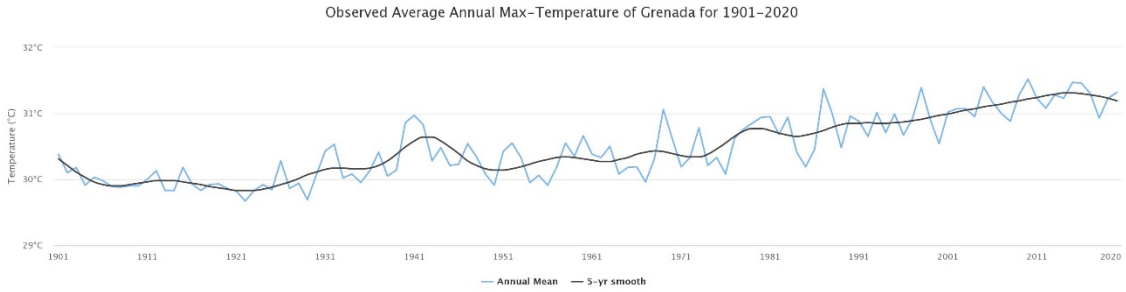


Source: World Bank Group, Climate Change Knowledge Portal.

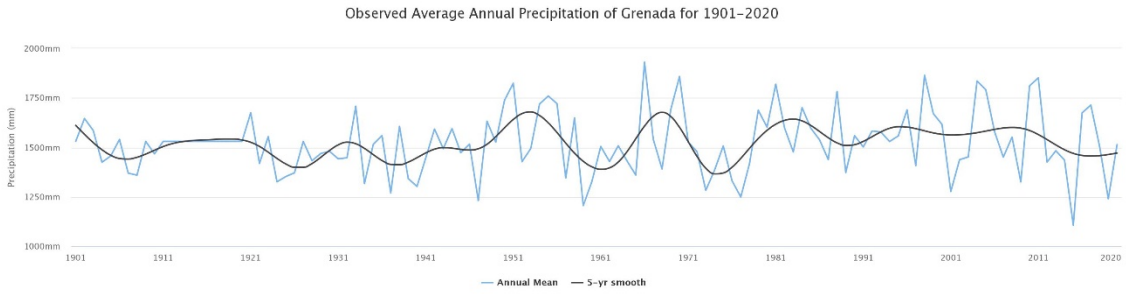
The mean annual temperatures have increased over time (minimum, mean, and maximum) since 1901 (Figure 5a, 5b, and 5c), while precipitation has not presented a significant trend (Figure 5d) but, it can be noted that 2015 was the driest year on record (see Figure 5d).

Figure 8: Observed average annual minimum, mean and maximum temperature and precipitation over 1901-2020.





(c)



(d)

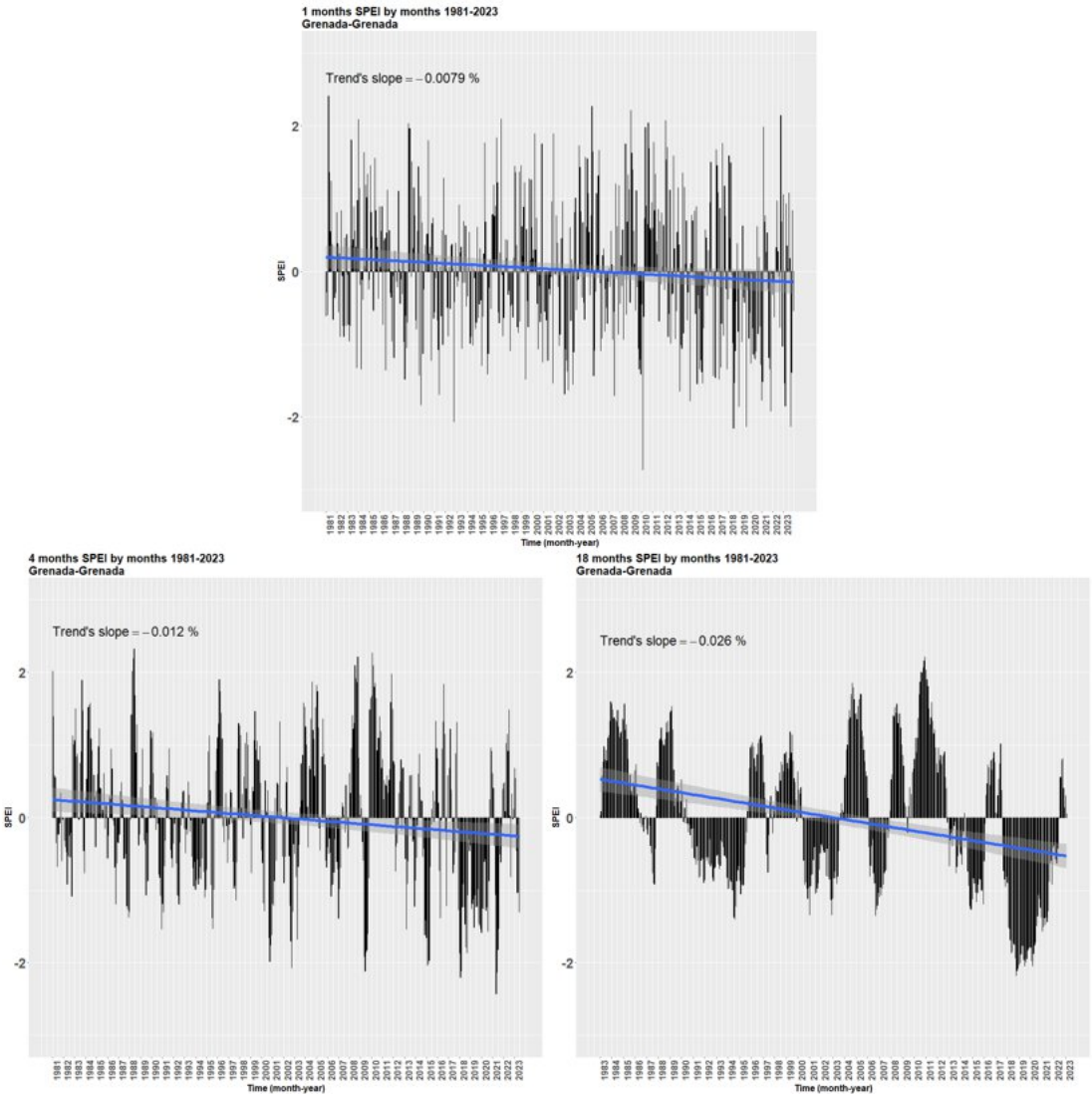
Source: World Bank Group, Climate Change Knowledge Portal.

There has been a change in rainfall observed throughout the year, particularly during the wet season of Grenada. The result has been a shift in rainfall climatology across decades. Though the beginning of the wet season has not shifted substantially, there has been a fluctuation in the number and timing of rainfall peaks observed. For example, the driest decade for Grenada since 1986 occurred in the 1990s when monthly rainfall did not exceed 140 mm, throughout most of the main rainy season. However, the November peak has become more consistent over time. Overall, the unimodal climatology of the island has varied, but the general pattern of dry early months has been retained. Decadal temperature climatology shows that temperatures have risen over time but have remained consistent since the 1990s. The most expressive changes occurred from August to October. Historical precipitation trends indicate a net decline during the wet season (June-August), fewer consecutive dry days, and an increase in heavy rainfall events.

Consequently, the Standardised Precipitation-Evapotranspiration Index (SPEI, drought index) is decreasing significantly for the period 1981-2023 for 1-month, 4-months and 18-months time period, respectively short-term, medium-term and long-term drought as presented in the figure below[31].

[31] The short-term SPEI is useful for detecting short-term precipitation deficits that may impact soil moisture and crop establishment. The medium-term SPEI is useful for monitoring precipitation deficits during the growing season, which can impact crop development and yield. The long-term SPEI is useful for assessing longer-term precipitation deficits that may have implications for irrigation water availability and overall agricultural productivity. A value lower than -2 or -1.5 characterize, respectively, an extremely or severely dry period.

Figure 9: SPEI in Grenada for the period 1981-2023. Source: CHIRPS & TerraClimate



Source: CHIRPS & TerraClimate

The droughts are more severe in time and continue in 2024. Indeed, in 2024 Grenada was going through the most severe water crisis in the last 14 years. Alarmed by unprecedented low water levels in reservoirs, the Government of Grenada officially declared a water crisis on May 10, 2024, leading to significant temporary water rationing measures[32].

Climate trends and projections

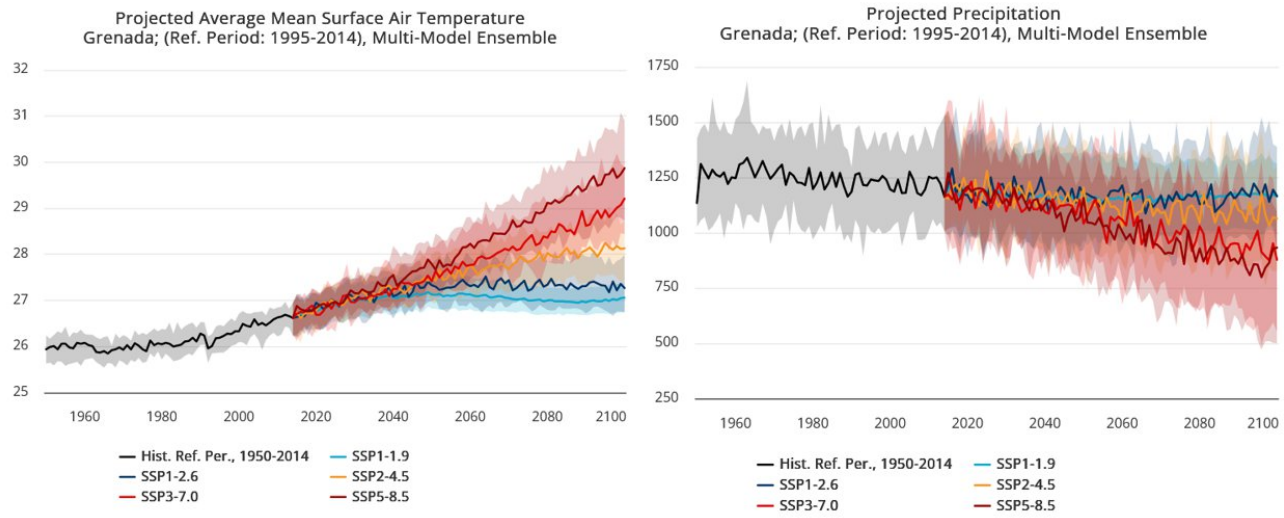
Climate change projections for Grenada include an increase in average annual temperature; reduced average annual rainfall; potential for an increase in the intensity of tropical storms; and increased sea surface temperatures. These hazards are expected to affect all dimensions of the country's socioeconomic landscape, including human settlements, agricultural production, food supply, water supply, health and tourism.

[32] IFRC, 2024: https://www.ifrc.org/article/hot-and-dry-small-caribbean-island-nation-grenada-struggles-drought-heatwaves-and-fire

Climate projections from the CMIP5 (Coupled Model Inter-comparison Project - Phase 5), included in the IPCC's Fifth Assessment Report (AR5), indicated an increase in mean temperature compared to the baseline period (1986-2005). A multi-model ensemble shows an increase from 0.67°C to 1.26°C in monthly temperature for RCP4.5 in the near (2020-2039) and middle (2040-2059) future. July is the month presenting the most expressive increase in temperature. Monthly precipitation is projected to be most affected during the rainy season, with a sharp projected reduction in July and a subsequent delayed start and shortening of the rainy season in the future, with severe implications for mace and nutmeg as well as other agriculture commodity production, if not addressed by appropriate adaptation interventions. For the RCP 8.5 scenario, the increase in mean monthly temperature is projected to be 0.73°C to 1.65°C in the near (2020-2039) and middle (2040-2059) future, relative to the reference period 1986-2005. Monthly precipitation presents a negative anomaly in the rainy season, except from August, which has an increase of about 12mm in the near-term (2020-2039).

Recent climate projections from the IPCC's Sixth Assessment Report (AR6) and CMIP6 indicate that Grenada will experience a significant rise in mean temperatures, with increases of 0.8°C to 1.5°C by 2039 and 1.5°C to 2.5°C by mid-century under the SSP2-4.5 scenario. For the more extreme SSP5-8.5 scenario, temperatures could rise by 1.0°C to 2.0°C by 2039 and 2.5°C to 3.5°C by 2059. August remains the month with the most notable temperature increases. Precipitation during the rainy season is expected to decrease, particularly in June, leading to a delayed and shortened rainy season. These projections are consistent with previous forecasts and recent Regional Climate Models.[33] Additionally, more recent models suggest up to a 25% decline in precipitation by the end of the century in the Caribbean, especially from November to January and in the southern islands like Grenada.

Figure 10 Projected Mean temperature (left) and Annual precipitation (right) from CMIP6 multi-model Ensemble.



Source World Bank Group, Climate Change Knowledge Portal.

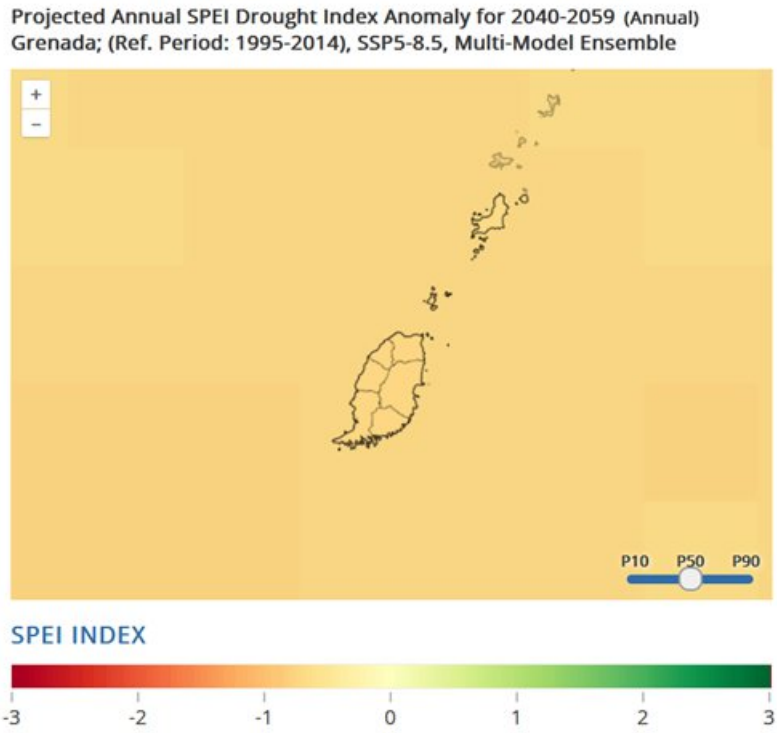
The country is expected to undergo a warming and drying trend and, in addition, to experience more frequent heat waves and droughts, as well as heavy precipitation. As mean temperatures

[33] Climate Studies Group Mona (CSGM) (2020) The State of the Caribbean Climate. Caribbean Development Bank: http://socc.mona.uwi.edu/sites/default/files/The%20State%20of%20the%20Caribbean%20Climate%20Report.pdf

are expected to increase in the Caribbean according to the most recent AR6 report[34], Grenada will have to prepare its agriculture sectors and livelihoods for drier conditions. Drying occurring in the traditional wet season (June–October) and lengthening of seasonal dry periods and increasing drought frequency are expected to increase demand for water throughout the region, with implications for agriculture production and food and nutrition security, especially of the poor and most vulnerable inhabitants of Grenada.

The SPEI under the SSP2-4.5 and SSP5-8.5 (AR6) for the period 2040-2059 (Multi-Model Ensemble) is expected to decrease of 0.55 and 0.70 in average respectively (meaning more acute droughts in time) compared to the 1995-2014 referenced period.

Figure 11: Projected SPEI Drought Index Anomaly for 2040-2059 (Annual) for Grenada.



Ref. Period: 1995-2014, SSP5-8.5, Multi-Model Ensemble. Source: World Bank CCKP

Main impacts

As a small island developing state (SIDS) Grenada is particularly vulnerable to climate change and variability as evidenced by recent extreme weather events and the occurrences of increased forest fires, crop loss, water shortages and incidence of pests and diseases.

Droughts. The Caribbean region, including Grenada, experiences drought-like conditions annually, significantly affecting water availability for agriculture and other resources, often leading to numerous bush fires[35]. These droughts, characterized by extended dry seasons, shortened rainy periods, rising temperatures, coastal degradation, and saline water intrusion into aquifers, have become more frequent and. During the severe 2009/2010 drought, water production centers in Grenada saw reductions of up to 65%, severely impacting agriculture, tourism, and daily life,

34 IPCC : https://www.ipcc.ch/report/ar6/wg1/
35 Peters EJ. The 2009/2010 Caribbean drought: a case study. Disasters. 2015 Oct;39(4):738-61. doi: 10.1111/disa.12123 . Epub 2015 Mar 5. PMID: 25754334.

with the northern regions, Carriacou, and Petite Martinique being the hardest hit. The National Water and Sewage Authority (NAWASA) struggled to meet demand during these drought months. The worst drought in Grenada's history lasted 20 months between 2009 and 2011, and the IPCC's Sixth Assessment Report (2023) predicts with high confidence that such droughts will become more frequent, highlighting the urgent need for climate change adaptation in Grenada's agricultural sector. The declaration and ensuing water restrictions was prompted by a combination of prolonged drought conditions, insufficient rainfall, and aging water infrastructure. Collectively, this led to critically low water levels in reservoirs. The government implemented several emergency measures to manage the crisis and mitigate its impacts on the population. The 2024 water crisis in Grenada is noted as the most severe in 14 years. This crisis is marked by unprecedented low water levels, significant water rationing, and stringent restrictions on water usage for non-essential activities. The declaration highlighted the extreme nature of the drought and the urgent need for conservation and improved water management strategies to ensure the availability of safe drinking water for the island's residents[36].

Floods and erosion. Urban expansion in Grenada has increased flood risk due to deforestation, loss of vegetative cover, and the proliferation of impermeable surfaces, leading to higher surface runoff. This risk became especially pronounced after Hurricane Ivan, which destroyed much of the watershed vegetation, raising concerns about downstream flooding, soil erosion, and impacts on water reservoirs. Inadequate drainage systems are ill-equipped to handle the rising frequency of extreme flood events anticipated with climate change. Poor communities, often building on riverbeds, floodplains, and steep terrains due to limited land access, are particularly vulnerable, increasing their exposure to landslides, rockfalls, and vector-borne diseases like Dengue, Zika, and Leptospirosis during prolonged floods [37]. The destruction of coastal infrastructure, such as coral reefs and mangroves, further exacerbates the impacts of coastal flooding, particularly during storm surges. Without stricter land-use planning and investment in climate-resilient infrastructure, such as the green/hybrid projects envisioned for The Carenage, the southern corridor to the international airport, and Grenville, effective disaster risk reduction will remain challenging[38]. Areas such as Telescope, Big/small Bay, Soubise and Marquis in St Andrew are already experiencing acute land erosion, while the towns of St. George's and Grenville are prone to serious flooding[39].

Hurricanes. According to the Caribbean Community Climate Change Centre, there has been an increase in the number of hurricanes passing within a 100-km radius of Grenada[40]. An increase was also noted in the number of more intense storms (Category 4 and 5 hurricanes) starting in 2002. The impacts of these hurricanes damaged ecosystems and infrastructure and caused economic declines. The report also noted that between 1950 and 2014 the islands of Petite Martinique and Carriacou have been impacted by two hurricanes that passed within a radius of 50 km. Over the past 100 years Grenada experienced less than 10 hurricanes; the three most devastating events in the last 20 years were Hurricanes Ivan in 2004, Emily in 2005 and Beryl in 2024. Ninety-five per cent of the water supply was disrupted after Hurricane Ivan, and it took up to one month to restore 95% of the pre-hurricane supply. Overall damage for both events was estimated to be as high as 2.5 times the GDP. The country's annual average loss from hurricanes is US$ 8.2M (0.9% of GDP)[41]. Most settlements and infrastructure in Grenada are located on or near the coast, including government, transportation, and commercial facilities. The storm surges

[36] IFRC, 2024 : https://reliefweb.int/node/4064984/
[37] GoG, 2017 : Grenada, Carriacou & Petite Martinique: Second National Communication to the United Nations Framework Convention on Climate Change.
[38] Department of Economic and Technical Cooperation (DETC) (2018) Readiness and Preparatory Support Proposal: https://www.greenclimate.fund/sites/default/files/document/readiness-proposals-grenada-nyu-strategicframeworks.pdf
[39] NSDP, 2019: https://www.finance.gd/docs/NSDP2020-2035i.pdf
[40] CCCCC : https://www.caribbeanclimate.bz/blog/2024/03/26/managing-climate-risk-in-grenada/
[41] World Bank : https://data.worldbank.org/country/grenada

also generate coastal erosion risks in low-lying areas and are of particular concern to the primary road that links coastal and interior communities.

Hurricane Beryl, which struck Grenada on the 1st of July 2024, was a devastating event, particularly for the islands of Carriacou and Petite Martinique. The hurricane made landfall as a high-end Category four hurricane and later intensified to a Category 5, making it one of the strongest early-season hurricanes on record in the Atlantic[42]. In Grenada, the hurricane caused catastrophic damage, especially on Carriacou and Petite Martinique, where 70% and 97% of buildings were damaged or destroyed, respectively[43]. Infrastructure was severely impacted, with the destruction of desalination plants, cell towers, and fiber optic cables, leaving the islands isolated and without basic utilities. The local economy, heavily reliant on tourism and small-scale agriculture, was also severely disrupted, as most businesses were destroyed.

The recovery efforts were hampered by rough seas and damaged infrastructure, making it difficult to deliver aid. Relief operations were complex, with assistance coming from neighboring countries and international organizations. The United Nations, for instance, allocated emergency funds to support the recovery efforts.

As described in the Climate Smart Agriculture & Rural Enterprise Programme (SAEP) - Hurricane Beryl damage assessment report[44], farmers reported extensive damage to crops, particularly cocoa, nutmeg, soursop, bananas, and plantains, which are crucial for both local consumption and export. The heavy rains and strong winds that accompanied Beryl led to the uprooting of plants, the destruction of young crops, and the washing away of fertile soil. This not only reduced immediate crop yields but also threatened long-term agricultural productivity, as the loss of topsoil and the destruction of immature plants delayed the next harvest cycle.

In interviews, farmers expressed deep concern about the financial losses they incurred. Many of them rely solely on their farms for income, and the hurricane left them with little to no produce to sell. The loss of crops also meant that there was less food available locally, leading to increased prices and food insecurity for the island's residents. Some farmers also reported damage to infrastructure, such as irrigation systems and farm buildings, further complicating recovery efforts.

In response, the government and local organizations have been working to provide support to the affected farmers. This includes financial assistance, technical support for replanting, and efforts to improve the resilience of the agricultural sector through better planning and infrastructure. However, the path to recovery is expected to be long and challenging, especially as farmers try to rebuild their livelihoods while preparing for future hurricanes.

This situation underscores the need for more robust disaster preparedness and support systems for farmers in Grenada, as well as the importance of addressing climate change, which is expected to increase the frequency and intensity of such storms. The experience of Beryl serves as a reminder of the ongoing challenges faced by small island nations like Grenada in balancing economic development with environmental sustainability.

Sea Level Rise (SLR). Low-lying coastal areas across the Caribbean, including Grenada, face significant risks from Sea Level Rise (SLR) due to their high population densities and concentration of critical infrastructure. Increase in SLR have been observed over the past years in the Caribbean region. SLR is expected to increase salinity in coastal habitats, threatening airports, coastal aquifers, and up to 3% of agricultural lands, especially when combined with seasonal events like

[42] NOAA, 2024 : https://www.weather.gov/lch/2024Beryl
[43] ReliefWeb : https://reliefweb.int/report/grenada/hurricane-beryl-update-3-12-july-2024
[44] SAEP, August 2024, not available online

storm surges, winter swells, and the El Niño Southern Oscillation.[45] Coastal aquifers are threatened by seawater intrusion from sea-level rise, and this is exacerbated by a decrease in groundwater recharge through over-abstraction and decreasing rainfall. The major open wells in Carriacou and Petite Martinique are within 100m of the shoreline thus making them highly vulnerable to salt water intrusion from sea-level rise. Storm surge events caused by tropical storms and hurricanes can also cause extensive damage to aquifers. This risk of damage increases with higher sea-levels since this makes it easier for contamination to occur during storm surges.[46] Expected losses from SLR for Grenada include 1% of total land and roads, 3% of agricultural land, 8% of turtle nesting sites, 11% of major resorts, and 100% of ports[47].

Projected increases in Sea Surface Temperature and wind speed indicate that hurricane intensity, but not necessarily frequency, over the North Tropical Atlantic has the potential to increase in the coming decades. Also, the frequency and intensity of tropical storms and hurricanes will continue to be heavily influenced by the state of the ENSO phenomenon well into the future, and this phenomenon will likely intensify. According to Grenada's Second National Communication (2017), some of the impacts of future climate change and sea-level rise on coastal resources are:

- Increased coastal erosion due to sea-level rise and the increased frequency and intensity of storm surges and intense rainfalls: continued coastal erosion, exacerbated by SLR, would very likely disrupt coastal villages like Gouyave, Grand Mal, Duquesne, Soubise, and Marquis, damaging critical fish habitat (mangroves), and destroying coastal property and aquaculture ponds.
- Prolonged dry periods, higher temperatures, and increased evapotranspiration rates will also negatively impact the water supply systems of the islands, and increase episodes of drought, based on the SPI (Standard Precipitation Index), especially in the dry season would severely affect the calendar of farmers.
- Increasing ocean acidification and inhibiting primary production processes and disrupting fisheries.
- Coral bleaching and the loss of fish habitats and tourist activities.
- Destruction of vital coastal ecosystems (mangroves and sea grass) that are not only essential fisheries habitats but also facilitate stabilization of the coast against erosion.
- Increased frequency and intensity of flood events caused by storm-surges intense rainfalls and damages to coastal infrastructures (roads and bridges), beaches for tourism, agricultural lands and crops (nutmeg and cocoa) and the proliferation of mosquito vectors that lead to health problems.
- Saltwater intrusion into low-lying estuaries and aquifers that would affect surface and ground water quality.

[45] IPCC : https://www.ipcc.ch/report/ar6/wg1/
[46] National Climate Change Adaptation Plan (NAP) For Grenada, Carriacou And Petite Martinique, 2017.
[47] Simpson et al. (2010) Quantification and Magnitude of Losses and Damages Resulting from the Impacts of Climate Change: Modelling the Transformational Impacts and Costs of Sea Level Rise in the Caribbean (Key Points and Summary for Policy Makers Document). Barbados, West Indies: United Nations Development Programme (UNDP).

Vulnerability of ecosystem and economy to climate change impacts

Economy

According to the NAP (2017), Grenada is vulnerable to the observed and projected climatic changes, including extreme events, and is already experiencing changes in its climate system, evidenced by increased incidence of drought, longer dry seasons, shorter rainy seasons, increased temperatures, coastal degradation and intrusion of saline water into aquifers, among others. Grenada economy depends on a relatively limited number of economic activities and outputs that are largely climate-dependent and climate-sensitive, Grenada can be disproportionately impacted by any change in its economic activities, and therefore the negative impacts of climate change pose an additional financial burden for the tri-island state with adverse effects on the country's socio-economic development.

The potential costs of inaction for Grenada comparing an optimistic (low impact, reduced emissions) and a pessimistic scenario (business as usual) indicates that inaction would cost about 21% of the current GDP by 2025, 46% by 2050, 76% by 2075 and 111% by 2100.

Human impact across Grenada is extremely high, with an average Human Footprint Index of 17.83 (where a score above 7 indicates intense impact). This index reflects the cumulative pressures on ecosystems from factors such as the built environment, agriculture, population density, roads, and night-time lighting[48]. The degradation of ecosystems due to these human activities is significantly worsened by the effects of climate change.

Agriculture

The expected impact of CC on agriculture is an increased risk of crop failure induced by an overall variation of average climatic variables, with above-average temperatures and below-average dry-season rainfall. Access to seeds and planting materials with the ability to withstand the adverse weather conditions--heat and humidity--is an ongoing challenge for farmers. This can significantly impact the country's food security and increase its reliance on food importation. According to Grenada's National Agricultural Plan, over 70% of available food for consumption is derived from imports.

Due to the mountainous topography, direct effects of rising sea levels on agriculture would be less severe; 3% of the agricultural land would be lost if sea levels rose by one meter. However, more widespread damage to agricultural systems can be expected as a result of saline intrusions into coastal aquifers, a problem that is already being experienced in some areas[49].

The agriculture sector is particularly susceptible to the impact of hydro-meteorological hazards such as hurricanes, windstorms, floods, and droughts, as well as secondary hazards such as landslides. The increasing frequency and magnitude of these events have had devastating and dislocating impacts and, within the past three decades, an unprecedented number of incidents have incurred debilitating losses in the agriculture sector. For instance, Hurricane Ivan in 2004 incurred over EC$100million in losses to the agriculture, forestry and fisheries sector, causing severe livelihood dislocations. Likewise, an extended period of drought in 2009/2010 resulted in serious dislocation in agricultural livelihoods through production reduction and increases in food prices. Reduced rainfall also poses challenges to agriculture.

The vulnerability of the agricultural sector in Grenada is not only a function of its geophysical location and hydro-meteorological hazards but it is also due to the shortcomings of the current disaster risk reduction and response mechanisms to effectively mitigate the impacts. In addition to

[48] Venter et al. (2016) 'Global terrestrial Human Footprint maps for 1993 and 2009' Scientific Data, 3(1), pp.1-10. doi: 10.1038/sdata.2016.67
[49] IFAD, 2019 : https://www.ifad.org/en/w/projects/2000001475

its already existing high exposure to natural hazards, the country is one of the SIDS classified as most vulnerable to climate change. According to the NAP, the expected climate change impact on the main commodities are the following:

Table 2: Impact of CC by agriculture subsector. Source: NAP (2017), FAO (2021)

Subsector	Impact of climate change
Nutmeg	- The nutmeg belt could be pushed to higher elevations reducing the positive effects on the water production of the watershed. - Although it is drought resistant, water availability could limit its growth. - The shallow root system of the nutmeg tree makes it vulnerable to torrential rain and high wind.
Cocoa	Higher temperatures and erratic rainfall changes cocoa farming suitability and causes yield reduction.[50] There is a reduction in current suitable cacao production areas, and a migration of suitable areas for cocoa production with negative ecosystem impacts.
Fruit trees	Reduced water availability would reduce tree growth, including soursop.
Vegetables	- Reduced water availability would reduce production. - Heavy rains can erode soils, damage crops and lead to fertilizer run-off into the marine environment.
Roots and tubers	These are relatively resistant to irregular rainfall and hurricane damage.
Livestock	Drought leads to food scarcity and reduced productivity of grazing pastures resulting in decreased animal yields. High temperatures result in heat related stress, and housing for livestock is vulnerable to extreme events. There is also a high dependence on importation of animal feed which can result in increased vulnerability in respect of a reliable source of feed.

If the projected precipitation in Grenada decreases throughout the year, with a significant reduction during the months of June, July, and August, it could have several critical impacts on cocoa production, as well as on other agricultural activities, including vegetable cultivation and mango tree growth[51].

Cocoa production in Grenada is highly dependent on consistent rainfall to support the various stages of the cocoa tree's growth cycle, including flowering, fruit development, and harvesting. A decrease in precipitation could lead to several challenges[52]:

- **Reduced Flowering and Pod Set**: Cocoa trees require adequate moisture to maintain healthy flowering, which is crucial for pod formation. A reduction in rainfall during the peak flowering season (April to July) could result in fewer flowers and a lower pod set, thereby reducing overall yields.
- **Slower Pod Development**: The growing period for cocoa pods extends over several months, and consistent moisture is necessary to ensure proper pod development. With decreased rainfall, especially during June, July, and August, pods may develop more slowly or not reach full size, leading to smaller and lower-quality beans.
- **Increased Tree Stress**: Prolonged dry periods can stress cocoa trees, making them more susceptible to diseases and pests. This can further reduce productivity and potentially increase the cost of managing these threats.
- **Disrupted Harvest Cycles**: The main harvest season in Grenada traditionally occurs from October to February, with a secondary harvest from June to August. Reduced rainfall could delay or shorten these harvest periods, leading to a decline in overall cocoa output and affecting the livelihoods of farmers who rely on cocoa as a cash crop.

[50] Lahive et al., 2019 : https://doi.org/10.1007/s13593-018-0552-0 & Bunn et al, 2019 : https://hdl.handle.net/10568/103790
[51] Nature, 2022 : https://www.nature.com/articles/s41598-022-22967-7
[52] Anning et al., 2022 : https://www.sciencedirect.com/science/article/pii/S2666049022000743

The impact of decreased precipitation would not be limited to cocoa production. Other agricultural activities, particularly the cultivation of vegetables would also be affected. Vegetables require regular and sufficient water, particularly during the growing season. A decrease in precipitation would likely lead to reduced yields, poorer quality crops, and increased irrigation costs. Farmers may also face challenges in maintaining soil moisture, which could lead to crop failures, particularly during the dry season.

In the context of land use, one of the primary pressures is the need to increase food production, driven by frequent post-harvest losses, food insecurity resulting from poor distribution, widespread market failures, and reduced productivity due to climate variability and change[53]. When combined with sea level rise (SLR) and other climate hazards, the availability of arable land for innovation and expansion of food production is significantly constrained[54]. The magnitude of such extreme events exerts substantial pressure on agroecosystems, extending the time required for their recovery.

High-velocity winds, for instance, have been identified as the primary cause of extensive crop and livestock losses in Grenada.[55] Specifically, 85% of the nutmeg crop was lost, and an estimated 50% of the nutmeg population and 25-40% of cocoa were destroyed, leading to significant alterations in the composition of ecosystems.

While mainland Grenada benefits from both surface and groundwater resources, the generation and storage capacities in Carriacou and Petite Martinique are considerably lower. Water yields fluctuate greatly between the rainy and dry seasons, with an upper limit of 54,600 cubic meters during the rainy season dropping by 42% to 31,800 cubic meters during the dry season[56]. Conversely, water demand is lower in the rainy season at 45,500 cubic meters, increasing to 54,600 cubic meters during the dry season, representing an 18% rise. This situation is exacerbated by a projected decrease in rainfall of up to 21%, heightening the likelihood of droughts.

Non-irrigated subsistence farming systems are vulnerable to droughts, pests and diseases. The country experienced the first drought in 2010, severely affecting agricultural production. Most poor farmers use rain fed production systems that peak in the wet season (June-November) which is becoming less predictable and drier. During the December-May dry season, the absence of irrigation to sustain horticultural production significantly reduces the consistent supply of local produce. Owing to the lack of storage facilities and farmers' lack of conditions to produce in this period, the scarce supply translates into higher prices and farm revenue. On the contrary, the market becomes oversupplied with certain crops in the wet season, leading to low prices, food losses and declining farm revenue.

Water

Climate change poses a severe threat to Grenada's water supply, given that it relies on surface water sources and rainwater catchment. Although there are watershed areas in Carriacou and Petite Martinique, catchment and storage capacity are much less. Hence rainwater harvesting and desalination activities are implemented to supply water needs. Some public buildings (e.g. schools) and private persons (e.g. farmers) have rainwater harvesting systems installed, but this is not standard practice in Grenada. Future projections indicate that rising temperatures and decreasing precipitation will exacerbate drought frequency and severity, increasing wildfire risks and causing

[53] GoG, 2023 : https://canari.org/wp-content/uploads/2024/06/CANARI-NEA-Report-2023_Summary_Final-Digital.pdf
[54] Eckstein, D., Künzel, V. and Schäfer, L. (2021) Global Climate Risk Index 2021. Office Bonn: Germanwatch e.V. https://reliefweb.int/sites/reliefweb.int/files/resources/Global%20Climate%20Risk%20Index%202021_1_0.pdf
[55] Patil, P.G., Virdin, J., Roberts, J., Singh, A. (2016) Toward a Blue Economy: A Promise for Sustainable Growth in the Caribbean. World Bank Group: https://documents1.worldbank.org/curated/en/965641473449861013/pdf/AUS16344-REVISED-v1-BlueEconomy-FullReport-Oct3.pdf
[56] Government of Grenada (GoG) (2018) Grenada National Land Policy: Providing for Sustainable Land Management and Ecosystem Resilience. https://climatefinance.gov.gd/wp-content/uploads/2019/10/DRAFT-National-Land-Policy.pdf

ecological disruptions such as reduced rainforest areas, species migration, soil erosion, declining wild pollinators, and stressed freshwater systems[57]. Freshwater availability, already under pressure from population growth and tourism, is expected to decline further due to reduced groundwater recharge, lower river flows, increased dam siltation, and rising groundwater pollution, alongside increased agricultural irrigation demands. Although local adaptation measures like rainwater harvesting are practiced, they are under-implemented in critical tourism and agricultural areas, and access to improved drought-resistant crop and livestock varieties remains limited[58]. While a draft Drought Management Plan exists, it has yet to be adopted, leading to a growing reliance on desalination for potable water.

Although 54,600 cubic meters of water are available on mainland Grenada during the rainy season, yields drop to 31,800 cubic meters during the dry season, whereas demand is 45,500 cubic meters during the rainy season and 54,600 cubic meters during the dry season. Along with the increase in average temperature due to climate change, this deficit causes a serious current and potential threat as annual rainfall is projected to decrease by up to 21%, which will lead increasingly to droughts. Rainwater harvesting in Carriacou and Petite Martinique is the standard traditional practices for water supply. The very first community rainwater harvesting system was commissioned by NAWASA in Blaize, St. Andrew's on mainland Grenada. Some public buildings (e.g., schools) and private persons (e.g., farmers) have rainwater harvesting systems installed, but this is not standard practice in Grenada[59].

Extreme rainfall events in Grenada increase turbidity in the water supply, reducing quality and causing disruptions[60]. While flooding typically occurs during the rainy season from June to November, uncharacteristic, localized flooding has also been observed during the dry season, such as in 2011. Freshwater plumes from rain events following droughts, like the 2009-2010 drought in Carriacou, have led to significant soil loss. Changes in freshwater ecosystems due to these events impact crop yields, threatening food security, economic stability, and vulnerable livelihoods. Additional climate change impacts include reduced drinking water availability (e.g., in St. Patrick) and loss of cultural services, such as river tubing and baptisms. The reduction in water availability and quality not only affects human health and well-being but also leads to increased costs for redistributing potable water and agricultural irrigation, with potential negative impacts on tourism and exacerbation of existing gender inequalities.

Saltwater intrusion into coastal groundwater aquifers, due to sea level rise will further limit the availability of water in the future. In addition, the projected increased frequency of heavy rainfall events will aggravate the problem of more frequent water supply outages due to high turbidity in the raw water supply. Additionally, infrastructural damage from extreme weather events (hurricanes, storms and flooding) may interrupt reliable water distribution during and after a weather even.

Geographic Targeting Based on Vulnerability Assessment

Climate vulnerability, as defined by **the Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report (AR6)**, refers to the susceptibility of systems, populations, and environments to the adverse impacts of climate change. It is determined by three main components: hazard and exposure, sensitivity, and the adaptive capacity of a system or community to cope with or mitigate these impacts.

[57] National Climate Change Adaptation Plan (NAP) For Grenada, Carriacou And Petite Martinique, 2017.
[58] Food and Agriculture Organization of the United Nations (FAO) (2019a) 'The State of the World's Biodiversity for Food and Agriculture', in Bélanger, J. and Pilling, D. (eds.) FAO Commission on Genetic Resources for Food and Agriculture Assessments, Rome, Italy, p. 572.
[59] National Climate Change Adaptation Plan (NAP) For Grenada, Carriacou And Petite Martinique, 2017.
[60] Schuttelaar, M. (2017) Project for a Climate Resilient Water Sector in Grenada (CREWS): Environmental and Social Assessment, Environmental and Social Management Plan (ESMP). German Agency for International Cooperation (GIZ).

In the context of the ENRICH project, the vulnerability assessment focuses on Grenada's main island. Carriacou and Petite Martinique were not included in this specific analysis due to their smaller size, which affects the resolution and quality of the datasets used. However, they are directly included in the project's targeting because these islands were severely impacted by Hurricane Beryl, making them priority areas for intervention. This approach ensures that these regions are supported in the project's overall strategy, even though their smaller size limits the applicability of the same detailed vulnerability analysis conducted for the main island of Grenada.

This analysis integrates hazard, exposure, sensitivity, and adaptive capacity to identify the areas most in need of climate adaptation interventions on Grenada's main island, ensuring that project activities are strategically focused where they will have the greatest impact.

Climate Vulnerability Assessment for ENRICH in Grenada

To assess climate vulnerability in Grenada, a set of indicators was chosen to reflect each of the components of vulnerability. These indicators provide a spatial understanding of where the greatest risks to agriculture, infrastructure, and communities lie, guiding project implementation toward areas most susceptible to climate impacts, both short- and long-term.

Hazard in this assessment focuses on identifying areas prone to extreme weather events that could cause immediate or short-term impacts, particularly high-precipitation events that can trigger flooding. Using data from the **Climate Hazards Group InfraRed Precipitation with Station data (CHIRPS)**, which covers the period from 1981 to 2023 at a spatial resolution of 5 km, the analysis tracks days with more than 20mm of rainfall. These extreme events can lead to flash floods, landslides, and crop damage, posing short-term risks to agricultural productivity and local communities.

Exposure indicators were used to evaluate the long-term impacts of climate change, focusing on chronic stressors like drought and water scarcity. The **Standardized Precipitation-Evapotranspiration Index (SPEI)**, calculated using data from CHIRPS and TerraClimate (1981-2023), identifies areas most exposed to prolonged moisture deficits. These regions, where rainfall is consistently low and evaporation is high, face cumulative long-term impacts such as reduced agricultural output, increased land degradation, and the potential for water scarcity. The 5 km spatial resolution helps to pinpoint these areas for targeted interventions aimed at mitigating long-term vulnerabilities.

The sensitivity component of the assessment identifies areas where populations and ecosystems are most vulnerable to the effects of climate change. In this analysis, **population density** is used as an indicator, with a specific focus on rural areas. Data from **WorldPop (2020)**, at a 100m resolution, excludes city centres to ensure that the project targets Grenada's rural populations, where agricultural activities are concentrated and communities are more directly dependent on natural resources. These rural areas, often with fewer resources and infrastructure, are particularly sensitive to climate-induced shocks, such as droughts, floods, and soil erosion. The sensitivity of the ecosystem itself was assessed using the **Revised Universal Soil Loss Equation (RUSLE)**, which calculates the risk of soil erosion. To ensure the most accurate and relevant data, the RUSLE model was based on satellite data from **ESA Sentinel 2**, captured between July and September 2024—right after Hurricane Beryl. This period provided updated insights into the state of vegetation and land cover, giving a clearer picture of erosion risk following the storm. Combined with other sources like CHIRPS, SOILGRIDS and NASA's SRTM, this data reflects areas where soil loss is a pressing concern.

The final component, adaptive capacity, was measured using socioeconomic indicators such as poverty rates and access to electricity, both of which are proxies for a population's ability to cope with and recover from climate impacts. Poverty data from the Government of Grenada (last census

in 2008), available at the parish level, provides a baseline understanding of financial vulnerability, with poorer communities having fewer resources to invest in climate resilience measures. Similarly, access to electricity data from the 2011 Government census was used to assess infrastructure-related adaptive capacity. Areas with low access to electricity often lack modern facilities that could aid in recovery after climate events, such as irrigation systems or communication networks.

The table below presents the indicators used by Vulnerability Component in the case of Grenada. The detailed analysis and table are presented in the Climate Vulnerability analysis in Grenada Annex 1.

Table 3: Vulnerability components and indicators

Vulnerability Component	Indicator
Hazard	High precipitation events (>20mm/d)
Exposure	SPEI – drought index at 18 months period
Sensitivity	Population density
	RUSLE – Soil Loss by year
Adaptation Capacity	Poverty
	Electricity

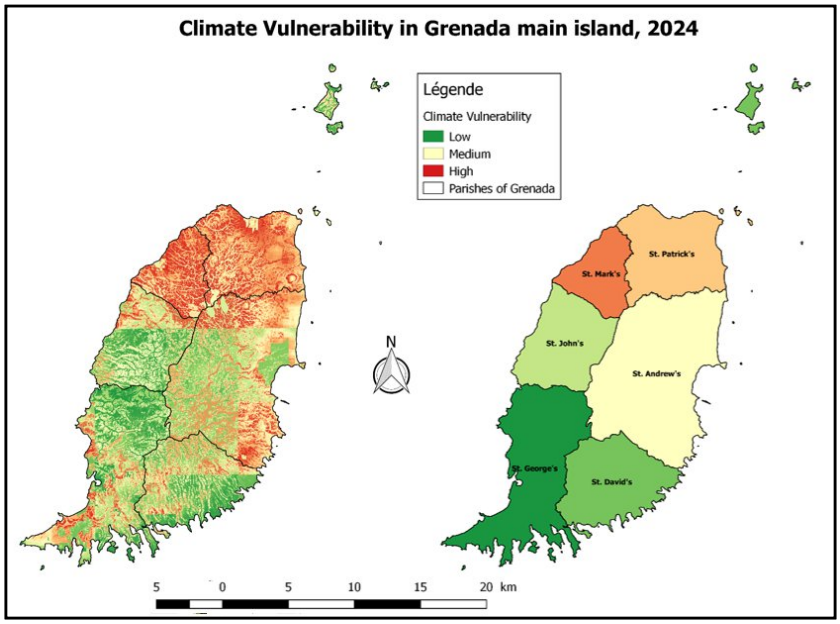
Geographic and Social Targeting

The ENRICH project will be implemented at the national level, with various activities spread across Grenada, Petite Martinique, and Carriacou. However, to maximize the impact of the interventions, specific activities **the first component** will focus on the most climate-vulnerable areas, as identified through the vulnerability analysis.

According to the climate vulnerability assessment presented in figure 1, the most vulnerable parishes in Grenada are **St. Mark's**, which is identified as the most vulnerable, followed by **St. Patrick's** and **St. Andrew's**. These areas experience high hazard and exposure, high sensitivity due to their rural population densities, coupled with significant erosion risks, particularly following extreme weather events such as Hurricane Beryl and lower Adaptive Capacity. As such, these parishes will be prioritized for activities like the restoration of public ponds, water infrastructure rehabilitation, and erosion control measures. Furthermore, even though the vulnerability assessment does not cover Carriacou and Petite Martinique, these would be priority areas.

The exact locations for activities under Outputs 1.1.3, 1.1.4, 2.1.2, and 2.1.3 will be determined through a participatory and evidence-based approach during project implementation. This process will ensure alignment with project objectives, environmental and social safeguards, and local needs. Geographic targeting will leverage detailed vulnerability assessments, such as the Revised Universal Soil Loss Equation (RUSLE) analysis, and other climate vulnerability data already developed under the project. a

Figure 12: Climate Vulnerability in Grenada, 2024



Source: own elaboration

ENRICH will adopt a targeted yet flexible approach to ensure that resources are allocated where they are most needed, balancing long-term climate resilience and immediate recovery efforts, to support Grenada's agricultural landscapes and rural communities across both highly vulnerable and recently affected areas. This vulnerability-driven approach also aligns with Grenada's National Adaptation Plan (NAP) and the Nationally Determined Contributions (NDC) under the Paris Agreement, ensuring that the ENRICH project not only addresses immediate adaptation needs but also supports Grenada's long-term climate resilience and sustainable development goals.

The beneficiaries targeted under this Project will include stakeholders from strategic agrifood systems in Grenada, with particular attention to cocoa agroforestry systems and associated value chains. Cocoa is cultivated in mixed-crop "creole" family gardens, using an agroforestry model that combines cocoa with nutmeg, spices, fruits (i.e. soursop and passion fruit), vegetables and food crops. In terms of capacity building activities under Component 1 and 2, and adoption of improved technologies and practices, the Programme would focus on active farmers and value chain stakeholders for key commodities and livelihoods linked to food systems. Regarding Component 3, the Project would cover government officials, civil society and local government stakeholders that are relevant to implement institutional strengthening and knowledge management activities.

The "Water for Irrigation" tool, developed under the AGRI project, identified and prioritized potential water harvesting and intake sites across mainland Grenada. Using parameters such as terrain concavity, clay soil content, water accumulation, and accessibility, the tool generated maps highlighting high-potential sites for irrigation schemes. Field validation confirmed that over 50% of identified water harvesting sites met critical suitability criteria, while all potential intake sites demonstrated consistent water availability year-round, even during dry periods. These findings were integrated into the geographic targeting strategy for the ENRICH project, under the **fist component**, allowing the identification of sites with high potential for climate-resilient water management interventions. The tool's maps and analyses will also serve as valuable resources during stakeholder discussions to finalize site selections, ensuring that local conditions and community needs are thoroughly considered.

Under the **second component**, beneficiaries will also be targeted according to their climate vulnerability and climate risk exposure. With their limited financial resources and small landholdings, smallholder farmers are particularly vulnerable to climate change. The main direct beneficiaries of the Project will therefore be smallholder farmers. According to the Grenada Agricultural Census (GAC), in 2012 there were 9,200 farmers (30 percent females) and 1,500 fisher folks (mostly males), down from 15,000 farmers in 1961. About 80 percent of the farmers (7,360 people) are smallholders (with less than 0.2 hectares) and only 20 percent are medium and large-scale farmers (above 0.2 hectares). Currently, the Extension Office of the Secretariat of Agriculture, Lands and Forests within MED indicates there are about 6,000 farmers registered, of which 50 percent are active farmers. Most smallholders act individually, and farming is not their main activity. There are over 5,000 cocoa farmers, with an average age of nearly 60 years old. Among these cocoa farmers, there are some 3,000 farmers linked to the Grenada Cocoa Association. The Grenada Co-operative Nutmeg Association (GCNA) integrates 3,500 farmers.

Social targeting

Social targeting is based on the results of geographic targeting and focuses on identifying those groups that require special attention from the project due to their vulnerability and their potential to contribute to the success of the project objectives. ENRICH will primarily address the areas of the country with the greatest climate vulnerability and the strategic agri-food systems of Grenada, with special attention to cocoa agroforestry systems and associated value chains such as nutmeg, spices, fruits (i.e. soursop and passion fruit), small ruminants, vegetables and food crops.

The project will give priority to small farmers (men and women), who have limited financial resources and small properties, being particularly vulnerable to climate change. As part of this group, there is evidence that women producers and young people face the most unfavourable conditions when extreme weather events occur due to their poverty, limited access to land, knowledge and services for production, as well as their limited participation in decision-making.

It is estimated that women will make up about 40% of the direct beneficiaries of the project and that young people will comprise approximately 15% of the total beneficiaries. The project aims at providing young farmers the opportunity to make a living in rural areas, either working with their parents or engaging in their own economic activity.

In the case of women, their participation will be evidenced for each output in the results framework (Part III section F) while in the case of young people, their participation will be concentrated in capacity building on entrepreneurship, business development, and marketing, their training in the management of adaptive technologies to climate change and management of climate information.

Project upscaling and lessons learned

The Climate Smart Agriculture and Rural Enterprise Programme (SAEP) (2018-2025) is the third IFAD financed project in Grenada addressing poverty supporting all economic activities in rural communities, and the first one with a focus on adaptation to CC. The project aims at improving the livelihoods of 7,500 vulnerable rural households through two components, Enterprise and Business Development (EBD) and Climate Smart Agriculture (CSA). The first one focuses on youth, enhancing their skills to become employed or supporting with training, technical services and finance to start new businesses. The CSA component provides training to farmers and rural communities to raise awareness on CC and adaptation, provides extension, finance to adopt CSA practices, and enhances rural infrastructure. The EBD component supported 837 youth (513 F) with training, 353 start-ups and 231 businesses with technical services. The CSA component was highly impacted by the COVID 19 pandemic, when all extension activities in the field were halted.

The awareness activities exceeded the original targets reaching out 2,544 persons (1,298 female), while the extension services could only achieve half of its targets so far. The infrastructure subcomponent was also negatively impacted by the rise in construction prices after the pandemic, so that the budget could not meet the original targets. The ENRICH project would build on the lessons learned by SAEP (Annex 2).

- **Holistic approach to rural development is crucial in SIDS context.** Rural development in Grenada necessitates a comprehensive approach that supports diverse economic activities beyond agriculture, as small businesses and non-agricultural enterprises are vital for improving the livelihoods of the rural poor. Technical support is crucial for microenterprises to transition from subsistence to profitable businesses, and training in entrepreneurship enhances essential skills in technology, marketing, finance, and administration that increase the chances of success. Addressing social needs, such as gender equality and health issues, is equally important and can be achieved through collaboration with various institutions; immediate support is essential for youth to reduce dropouts. Furthermore, projects must incorporate climate change adaptation and disaster preparedness strategies, as rural populations are highly vulnerable to external shocks. Flexibility in responding to unforeseen events, including natural disasters, is key to protecting these vulnerable communities and ensuring sustainable development outcomes.
- **Transforming the agriculture sector requires a new mindset at the micro and macro-level.** Farmers often see organization as a mean to access public programs, yet they typically operate and market their farms individually. While individual support is essential, larger-scale investments, often planned by the government, should be integrated into the overall intervention strategy. Shared infrastructure, like public irrigation systems, requires clear management rules, and farmers need training to empower and participate in their maintenance. The nutmeg and cocoa industries exemplify successful vertical integration, and targeted support for these sectors can enhance exports and benefit numerous small farmers. Many farmers approach agriculture traditionally, overlooking profitability; thus, fostering a business-oriented mindset with technology and investment is crucial for improving income. Engaging youth in adopting agricultural technologies may yield more sustainable results than targeting traditional farmers. However, limited access to land for young men and women necessitates prioritizing production methods that optimize land use or increase yields per unit of land.
- **Supporting vulnerable youth involves addressing basic weaknesses and using new approaches**. When designing interventions for vulnerable youth, it is essential to address their specific constraints, such as deficiencies in basic skills and knowledge gaps that hinder employment and training opportunities. Offering stipends to cover basic needs or childcare during training can help reduce dropout rates among the most vulnerable participants. Additionally, promoting entrepreneurship is a viable alternative to traditional employment pathways and has proven successful in reducing youth unemployment. By encouraging young people to start their own businesses, households can become more resilient to external shocks. With adequate training and support, youth can emerge as leaders in their communities, driving sustainable development and improving rural livelihoods.
- **Promotion of Nutrition Awareness**. Targeting children and their parents in rural schools could effectively promote nutrition awareness. Female farmers showed a keen interest in

improving their backyard gardens, highlighting the need for extension workers to be trained in nutrition to better support local food production. Overall, incorporating nutrition training into extension services, using practical learning methods, and promoting healthy backyard gardening are crucial for improving diets in rural communities.

- **Access to financial services require enabling conditions through grants, improved profit margins and linkages between grant recipients and financial institutions**. In Grenada, financial services for agriculture are primarily offered by the Grenada Development Bank and Credit Unions, focusing on short-term needs, while long-term financing has seen limited success due to various factors. Previous programs struggled to provide credit to farmers due to their inability to meet requirements and the financial sector's perception of agriculture as a high-risk venture. Smallholders often lack land titles or formal agreements, making it difficult for them to access loans, and past political programs have led to widespread delinquencies that further alienate vulnerable populations from formal financial services. Most farmers are reluctant to take loans because low profit margins make financial costs burdensome, creating a vicious cycle of low yields and limited investment. Grant financing is essential to break this cycle, allowing farmers to improve productivity and eventually qualify for loans. Successful projects must promote the connection between grant recipients and financial services from the outset, ensuring that financial institutions are involved and informed about project outcomes.
- **Climate Change Adaptation may improve with innovative approaches and more coordination**. Grenada's small size necessitates collaboration with regional institutions for climate monitoring and meteorological services; however, there is a need for local knowledge on climate vulnerabilities and innovative CSA practices. While the Secretariat of Agriculture, Lands and Forests within MED acknowledges the link between climate change and good agricultural practices, larger scope investments –like reforestation and watershed management- remain scarce. Grenada's vulnerability to climate change presents opportunities for accessing Green Finance, yet the lack of qualified resources hampers successful implementation of multiple overlapping projects. Strengthening policy and technical institutions is essential to monitor climate impacts, avoid duplication of efforts, and create a coordinated local agenda for addressing climate change.
- **Targeting criteria must be specific for the type of support**. Applying one criteria across the board may exclude rural poor or may reduce the scope of the intervention. Criteria that identify rural poor is key to focus finance instruments and measures that offset their disadvantages. Nonetheless, instruments that provide public goods should be open to a vast target audience to increase impact. Projects aiming at increasing resilience to CC should base their targeting criteria on vulnerability indicators.
- **Project Management must address the scarcity of qualified professionals**. Grenada, as a SIDS, aces significant competition for qualified staff, leading to reduced project implementation capacity and prolonged recruitment processes. Maintaining in place trained individuals in future projects enhances efficiency and value for money. Exploring alternative contract arrangements, such as retain contracts for local or regional experts, could provide needed expertise while training PCUs. Additionally, the limited supplier options on the island complicate procurement processes. . Overall, addressing staff shortages, utilizing short-term consultants, and adapting procurement processes are vital for effective project management in Grenada.

B. Project Objective

Project Goal, Objective and Outcomes

Objective: The project objective is to reduce exposure and vulnerability to extreme climatic events and strengthen the adaptative capacity of vulnerable rural small island communities **Outcomes**. The project will achieve the stated goal and objective through three outcomes:

• Outcome 1. Vulnerable communities have improved access to a sustainable use of water and to drought and hurricane-resistant infrastructure

• Outcome 2. Vulnerable rural households and their most vulnerable members have greater capacity to adapt to climate change

• Outcome 3. Improved capacity of local institutions and vulnerable communities to manage and share climate adaptation knowledge and cope with adverse climatic shocks.

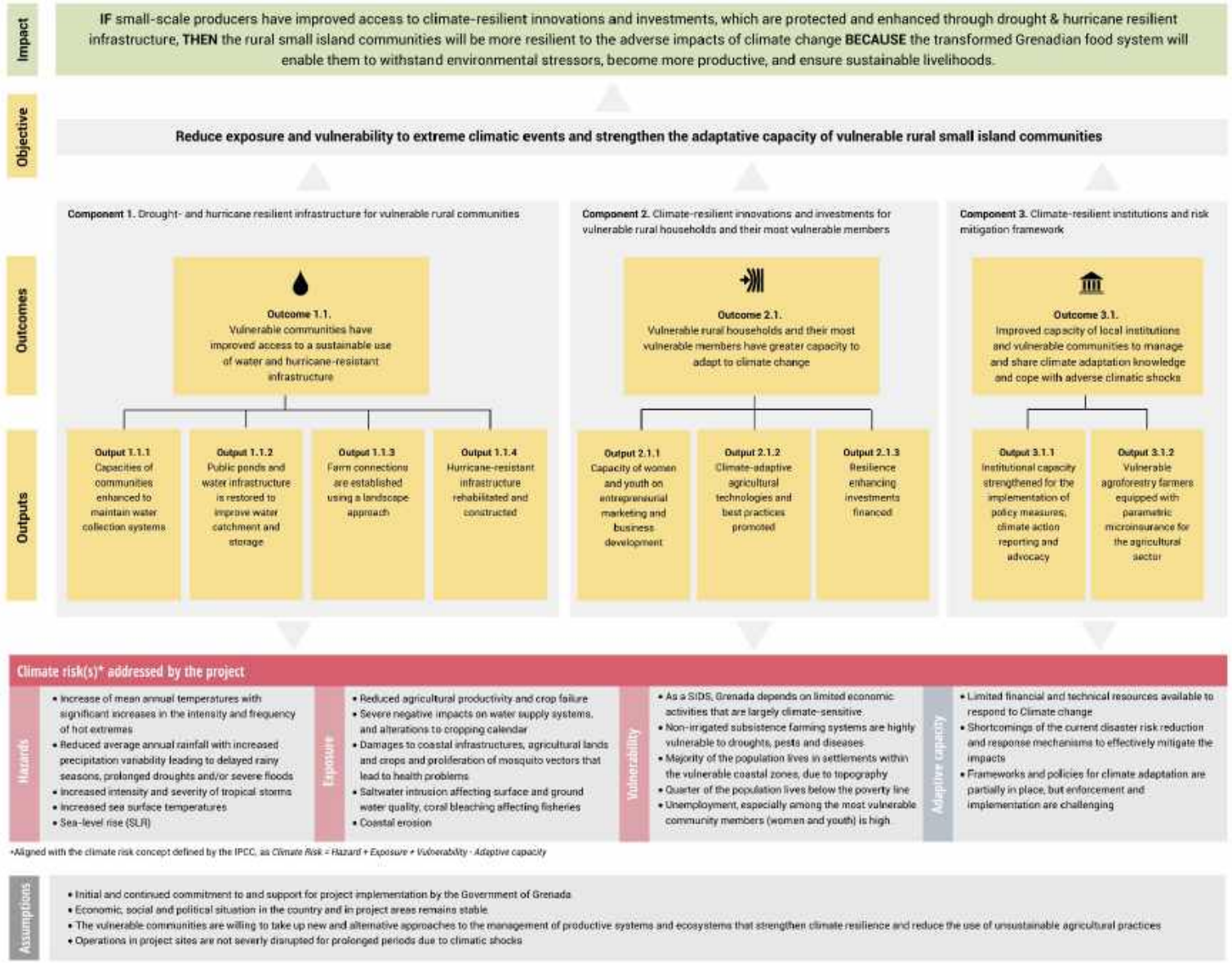
Theory of Change and Approach

Grenada suffers from a high level of vulnerability due to economic downturns and climate change and climate variability. The structural change from an agricultural-based economy to a service-based economy has created a high dependency on food imports, the abandonment of agricultural lands, and high levels of unemployment in rural areas, particularly among youth. Low levels of adoption of agriculture related climate smart technologies and techniques is due to the inability of farmers to access finance from financial institutions to invest in, and adopt those technologies exacerbate their vulnerability, especially in the rural sector. Lessons learned from the SAEP Programme under its Enterprise Business Development Component, will be further complemented and expanded.

For the above reasons, the Government of Grenada has two strong national priorities: (i) improving water storage and management and (ii) investing in climate smart agriculture, to improve incomes and the resilience of its farmers to climate change. ENRICH is designed to assist the Government of Grenada in addressing these two priorities, with a priority on linking youth entrepreneurship and start-up businesses in climate smart agriculture.

The ENRICH project aims to make rural communities more resilient to the adverse impacts of climate change by improving the access of small-scale producers to climate resilient innovations and investments, including water harvesting and distribution to address increased variability in rainfall pattern and the introduction of new climate smart technologies and practices for agriculture. These investments will be protected through drought and hurricane resilient infrastructure, through a stronger institutional framework and improved climate risk management tools. The Theory of change can be found below.

Figure 13 ENRICH project Theory of Change (TOC)



C. Project Components and Financing:

The main components, outcomes, outputs and financing of the ENRICH project are below.

Table 4: Project components and financing

Project Components	Expected Outcomes	Expected Concrete Outputs	Amount (USD)
Component 1 - Drought and hurricane resilient infrastructure for vulnerable rural communities	**Outcome 1.1:** Vulnerable communities have improved access to a sustainable use of water and to drought and hurricane-resistant infrastructure	Output 1.1.1. Capacities of communities enhanced to maintain water collection systems	254,801
		Output 1.1.2. Public ponds and water infrastructure is restored to improve water catchment and storage	1,898,230
		Output 1.1.3. Farm connections are established using a landscape approach	628,963
		Output 1.1.4. Hurricane-resistant infrastructure rehabilitated and constructed	750,568
Total component 1			3,532,562
Component 2 - Climate-resilient innovations and investments for vulnerable rural households and their most vulnerable members	**Outcome 2.1:** Vulnerable rural households and their most vulnerable members have greater capacity to adapt to climate change	Output 2.1.1. Capacity of women and youth on entrepreneurial marketing and business development	1,273,274
		Output 2.1.2. Climate-adaptive agricultural technologies and best practices promoted	804,885
		Output 2.1.3. Resilience-enhancing investments are financed	1,848,517
Total component 2			3,926,676
Component 3 – Climate resilient institutions and risk mitigation framework	**Outcome 3.1**: Improved capacity of local institutions and vulnerable communities to manage and share climate adaptation knowledge and cope with adverse climatic shocks.	Output 3.1.1. Institutional capacity strengthened for the implementation of policy measures, climate action reporting, advocacy and knowledge management	463,192
		Output 3.1.2. Vulnerable agroforestry farmers equipped with parametric microinsurance for the agricultural sector	418,585
Total component 3			881,777
Total Project activity costs			8,341,014
Project Execution cost (9.5%)			875,576
Total Project Cost			9,216,590
Project Cycle Management Fee charged by the Implementing Entity (8.5%)			783,410
Amount of Financing Requested			10,000,000

D. Projected Calendar:

Table 5 Project calendar

Milestones	Expected Dates
Start of Project Implementation	2025 (June)
Mid-term Review	2028 (February)
Project Closing	2030 (June)

Terminal Evaluation	2030 (Feb/Mar)

PART II: PROJECT JUSTIFICATION

A. Project components

The Project is structured around three components:

- Component 1: Drought and hurricane resilient infrastructure for vulnerable rural communities (3.45 million USD)
- Component 2: Climate-resilient innovations and investments for vulnerable rural households and their most vulnerable members (3.97 million USD)
- Component 3: Climate resilient institutions and risk mitigation framework (0.92 million USD)

Component 1. Drought- and hurricane resilient infrastructure for vulnerable rural communities

Outcome 1.1 Vulnerable communities have improved access to a sustainable use of water and to drought and hurricane-resistant infrastructure

Grenada's agricultural sector is highly vulnerable due to its heavy reliance on rain-fed systems, with approximately 98% of arable land dependent on rainfall. Although agriculture accounts for an estimated 15% of the total water demand, most of this water is sourced from rivers, while smaller producers rely on treated water from public mains. However, expansion in the tourism and agricultural sectors, along with the increasing impacts of climate change, have placed additional strain on Grenada's water resources. Challenges such as silting of dams, damage to distribution lines during intense rainfall, and increasingly severe dry seasons have exacerbated the situation.

This component is designed to increase the resilience of agricultural infrastructure against the increasingly unpredictable and severe climatic conditions in Grenada, including extended drought periods and more intense and unpredictable hurricanes. It is aligned to Measure 4.13 of the National Adaptation Plan (2017) which supports implementation of rainwater harvesting (RWH) and water storage and distribution projects that adopt water management practices and technologies, including developing RWH ponds in such a way that one pond can be used by a number of farmers, and hence minimum land area is lost.

This sub-component is also closely aligned with the findings of the *Report on Damage and Needs Assessment and Rehabilitation Plan for the Agricultural Sector in Grenada following Hurricane Beryl (2024)*, conducted by the Secretariat of Agriculture, Lands and Forests within MED. The report highlights the immediate recovery needs, including the repair and reconstruction of damaged farm buildings, irrigation systems, and other critical infrastructure. ENRICH directly addresses these priority areas, ensuring that the agricultural sector can recover and become more resilient to future climate-related shocks.

The main activities of the sub-components are:

- **Water Quality Assurance and Community Capacity Building:** Implement initiatives to upgrade water collection systems and ensure water quality testing, in collaboration with the Bureau of Standards.
- **Public Ponds Restoration and Water Infrastructure Rehabilitation**: Restore public ponds and rehabilitate water infrastructure to improve water catchment and storage, benefiting farmers during dry seasons. The sites have been selected in coordination with NAWASA and

the MoA. The restoration will also consider ecosystem-based approaches, such as planting vegetation around ponds to reduce erosion, enhance biodiversity, and create microhabitats.

- **Farm Connections**: Using a landscape approach, procure connections from public ponds and restored/rehabilitated water infrastructure to farms. Farms will directly benefit from the rehabilitated water infrastructures by procuring materials in bulk for efficient water access.
- **Hurricane-Resistant Facilities**: Construct and upgrade public storage facilities and pens, including warehouses and processing facilities to withstand hurricane impacts.

These efforts align with ongoing initiatives to improve water governance and infrastructure, such as the GCF-funded Programme targeting water system improvements (G-CREWS, GIZ) and the Climate-Smart Agriculture and Rural Enterprise Development Programme (SAEP, IFAD). Through these integrated approaches, the sub-component seeks to mitigate the risks posed by climate change, thereby enhancing the resilience of Grenada's agricultural landscapes.

Geographic targeting: the ENRICH project has strategically targeted locations for the restoration and rehabilitation of water infrastructure by overlaying its vulnerability analysis with the results of 'Water for irrigation' tool for Grenada study done under the AGRI project. This ongoing initiative, which assesses the potential for improving water harvesting reservoirs and irrigation systems, has been crucial in identifying key sites for intervention under ENRICH.

Through this integrated approach, **at least 10 existing sites** in the parishes of **St. Patrick's** and **St. Andrew's** have been identified for **public pond restoration** and **water harvesting system improvements**. These parishes were selected as they are among the most climate-vulnerable areas on the main island of Grenada, according to the ENRICH vulnerability assessment, which highlights regions particularly prone to **drought** and **water scarcity**. Additionally, in **St. Mark's parish**, where no existing water harvesting ponds were identified, the project will prioritize **water harvesting system improvements** at key water intake locations to enhance water security. Furthermore, one site on the island of **Carriacou** has been included for intervention due to the severe damage caused by **Hurricane Beryl in 2024**, making it a priority area for recovery efforts.

These areas were chosen to maximize the impact of ENRICH interventions, focusing on improving irrigation systems, water retention, and overall water distribution in the most at-risk agricultural regions. The map included here illustrates the **rainwater harvesting sites** (blue icons) and **water intake sites** (purple icons) identified in the original study, which with an overlay of vulnerable areas based on ENRICH' own analysis allowed to select the sites. This geographic focus on **St. Patrick's**, **St. Andrew's**, **St. Mark's** and **Carriacou** ensures that the interventions are targeted where the impacts of climate change and recent storm events have been most severe.

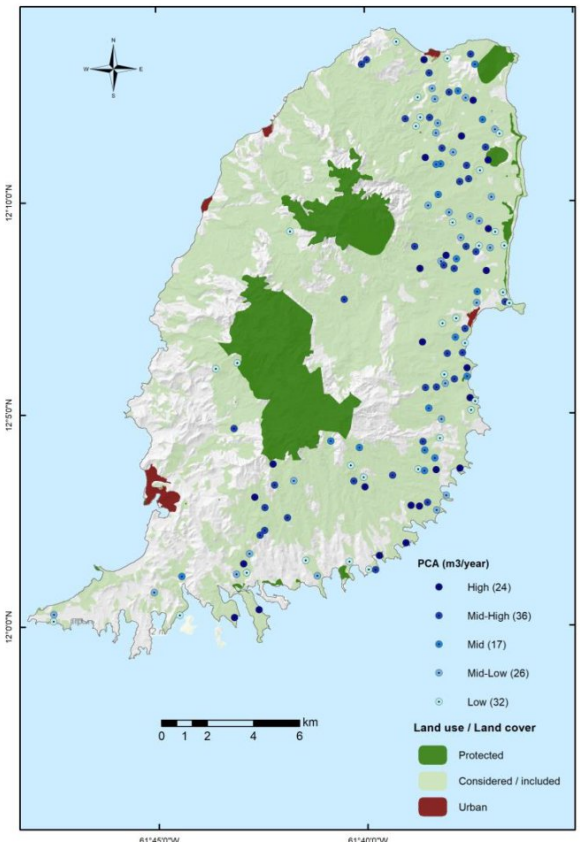


Figure 14: Map of sites in the field under the AGRI project. Source: Final report AGRI Water for Irrigation.

Output 1.1.1 Capacities of communities enhanced to maintain water collection systems

This activity is designed to ensure that local communities and farmers have the knowledge and tools to manage water infrastructure effectively and sustainably. This initiative will provide communities with the capacity to ensure continued water quality testing and water management while also enhancing the sustainability of agricultural systems through the adoption of water-efficient practices.

The activity is aligned with **National Goal #1** of Grenada's National Sustainable Development Plan (NSDP) 2020-2035, which emphasizes *building a skilled and resilient society*, and **National Goal #3**, which supports *environmental sustainability through resilient water management and conservation practices*.

Activity 1: Training programmes on water collection systems

Workshops and Trainings. Communities will participate in **50 workshops** over the course of the project to build their skills in maintaining and upgrading water collection systems, such as rainwater harvesting and pond management. The proposed number of workshops is based on the plan to organize two workshops per targeted watershed, covering the 23 watersheds identified on the main island of Grenada, along with one workshop each for the islands of Petit Martinique and Carriacou. This ensures comprehensive geographic coverage and targeted community engagement. These trainings will empower local farmers to ensure water systems are sustainable and meet the growing demands due to climate variability.

To further strengthen the sustainability and effective management of these water resources, a **compulsory Water Users Association (WUA)** will be established for communities benefiting from irrigation infrastructure and ponds under this sub-component. The WUA will be responsible for **installing water meters** to monitor individual consumption, ensuring that each user is accountable for their water usage. **Members of the WUA will also commit to a nominal fee structure** to cover the operational and maintenance costs associated with the water systems. This approach promotes responsible usage, provides funds for upkeep, and encourages community-led management of the resources.

Fee Structure for WUAs. To strengthen the sustainability of irrigation infrastructure and restored ponds under this sub-component, the Water Users Associations (WUAs) will adopt a participatory approach to establishing the fee structure. The nominal fees will be calculated based on a combination of water consumption levels (measured through installed water meters), the operational and maintenance costs of the water infrastructure, and the ability to pay of the community members. To ensure transparency and community buy-in, the WUA will organize consultations with beneficiaries during workshops to discuss and approve the fee structure. These consultations will emphasize affordability and inclusivity, with provisions for waivers or reduced fees for vulnerable households, ensuring equitable access to the benefits of water infrastructure.

Equitable Distribution of Benefits. The Project is committed to equitable distribution of benefits by ensuring the active inclusion of vulnerable groups, such as women, youth, and smallholder farmers, in all aspects of water resource management. During the workshops and WUA consultations, specific efforts will be made to identify and address the needs of these groups. Additionally, the Project will integrate gender-sensitive approaches and provide targeted capacity-building initiatives for women and youth. The involvement of diverse stakeholders in WUA governance will prevent elite capture and promote fair decision-making processes. Regular monitoring by the Project Coordination Unit (PCU) and external reviews will further ensure that the benefits of the water systems are distributed equitably across all beneficiary communities. The project is expected to facilitate access to water for agriculture purpose for 200 women, and train at least 250 women (40% of farmers trained in water access).

The fee structure will take into account different factors such as the area to irrigate, the amount of water used and the socio-economic characteristics of the HH. The fee structure would also consider waivers for members of vulnerable groups (i.e. single mothers) or in-kind contribution through participation in maintenance works (i.e.for the poorest farmers).

To further strengthen the sustainability and effective management of these water resources, the WUA will be responsible for installing water meters to monitor individual consumption, ensuring that each user is accountable for their water usage. Members of the WUA will also commit to a nominal fee structure to cover the operational and maintenance costs associated with the water systems. This approach promotes responsible usage, provides funds for upkeep, and encourages community-led management of the resources.

A crucial component of this activity is **fostering local ownership of water infrastructure**. By engaging local communities and farmers in the management and maintenance of water collection systems, the Project will build a strong sense of ownership, which will, in turn, help ensure the long-term sustainability of these infrastructures. Proactive management by community members will reduce reliance on external technical support and extend the lifespan of the restored systems.

In addition to technical training, **50 workshops** will focus on fostering **local leadership and community empowerment**. These workshops will cover critical areas such as water management governance, collaborative water use strategies, and ways to maximize the collective benefits from water infrastructure and resilient infrastructure (hurricane-resistant facilities). Inclusive participation is a priority, and the Project will ensure that **women, youth, and vulnerable groups** are actively involved in water management initiatives. These groups will play a central role in contributing to both water security and community resilience.

Farmers participating in the capacity-building efforts of this activity will also need to engage in **Farmer Field Schools (FFS)** under Sub-component 2.1, where **24 FFS will be set up to support 600 farmers** in sustainable water and resource management. Through FFS, participants will gain additional hands-on experience in applying **water use efficiency techniques** alongside other climate-smart agricultural practices, further strengthening their capacity to manage water resources sustainably and improve farm productivity.

A dedicated **infrastructure specialist** will oversee these capacity-building initiatives while also monitoring the restoration of critical areas connected to ponds (such as upstream reforestation) and the construction/rehabilitation of hurricane-resistant facilities. This will ensure water quality is maintained and the environmental benefits of restored ponds are maximized. The infrastructure specialist will work for the whole period of the Project.

Output 1.1.2 Public ponds, water infrastructure is restored to improve water catchment, storage

Activity 1: Public Ponds Restoration and Water Infrastructure Rehabilitation

This activity aims to restore public ponds and rehabilitate water infrastructure to enhance water catchment and storage capacity, addressing the growing challenge of water scarcity during prolonged dry seasons and improving resilience to flooding during storms. This initiative is critical for safeguarding Grenada's agricultural sector against the impacts of climate change. It is aligned with the **National Goal #2** of Grenada's National Sustainable Development Plan (NSDP) for 2020-2035, which promotes climate- and disaster-resilient infrastructure. Additionally, the activity supports **National Goal #3** by enhancing climate resilience and reducing hazard risks across the country. The **Public Ponds Restoration and Water Infrastructure Rehabilitation** activity aligns with priorities outlined in Grenada's **Drought Management Plan (2019)**, which emphasizes:

- **Rehabilitating Public Ponds** to restore their capacity for irrigation and livestock watering.

- **Developing Rainwater Harvesting Systems** in drought-prone areas like Carriacou and Petite Martinique.
- **Expanding Water Storage Capacity** in strategic locations such as the Great River watershed (within St. Andrew parish).

Grenada's agricultural sector is highly vulnerable to climate change impacts such as droughts, unpredictable rainfall, and intense storms. Given the strain on water infrastructure, increasing water storage capacity is essential for ensuring drought resilience and agricultural productivity. Many public ponds have suffered from neglect, siltation, and reduced capacity, limiting their effectiveness in supporting local agricultural needs. Through the rehabilitation of public ponds and improvement of the rainwater harvesting (RWH) systems, this activity will improve water availability, support agricultural operations during dry spells, and enhance resilience to extreme weather events.

Feasibility studies and stakeholders engagement. A comprehensive feasibility study of selected public ponds and water infrastructure will be conducted across Grenada, Carriacou, and Petite Martinique to identify the specific restoration needs. This will be completed through a series of stakeholder engagement workshops, involving local farmers, NAWASA, and the MoA, to ensure that at least 10 prioritized sites address water demand and agricultural productivity. At least two workshops will be conducted by site to engage local communities in identifying water infrastructure rehabilitation needs.

Public Ponds Restoration: Pond restoration works will target an estimated 150,000 square meters of pond surface across the island. These ponds will support 20% of the 3,000 active farmers in Grenada, each of whom requires 500 m^3/acre of water during the dry season. Restoration efforts will involve:

- **Desilting and Excavation:** to increase pond depth to enhance water storage capacity, ensuring that ponds can meet dry season irrigation needs.
- **Lining and Sealing:** ponds will be lined with impermeable materials to reduce water loss through seepage.
- **Reforestation of Critical Areas:** Restoration will include the reforestation of **30 hectares** of critical areas surrounding ponds, using assisted natural regeneration methods to reduce erosion, protect water resources, and enhance biodiversity.

Water Harvesting Structures (Check Dams): 600 check dams will be constructed to enhance water harvesting from rainfall and surface runoff, directing it into the restored public ponds. These check dams will help capture runoff during heavy rains and improve flood resilience.

Integration with Existing Water Systems: To ensure coordination and sustainability, restored ponds and infrastructure will be integrated into Grenada's broader water management system, overseen by NAWASA and the MoA Extension Department. A total of 50 workshops will be conducted to ensure that water systems are efficiently connected, focusing on both technical integration and community engagement (see FFS activities under Component 2).

The restoration of public ponds and water infrastructure will provide significant long-term benefits to Grenada's agricultural sector. These improvements aim to address challenges posed by climate change, such as irregular rainfall, drought, and flooding, while promoting sustainable agricultural practices. The key benefits are as follows:

Table 6 Benefits of restoring public ponds

Benefit	Details
Increased Water Security for	The restoration of ponds will ensure a reliable water supply for irrigation, livestock, and other agricultural activities, particularly during dry spells. This will help reduce

Agriculture	the risk of crop failure and livestock losses due to drought. Additionally, by increasing water storage capacity, the Project creates a buffer against climate variability, helping farmers manage irregular rainfall and prolonged dry seasons.
Enhanced Agricultural Productivity	With consistent water access, farmers can stabilize crop yields throughout the year, ensuring food security and supporting livelihoods. The reliable water supply may also encourage the expansion of irrigated agriculture, enabling farmers to grow a wider variety of crops and increase productivity, even in areas that previously faced water scarcity.
Reduced Vulnerability to Flooding	By improving water catchment and storage, the Project mitigates the risk of flooding during heavy rains, protecting agricultural lands from waterlogging and erosion. In coastal and low-lying areas, enhanced water management infrastructure can also reduce the impacts of storm surges, safeguarding both agricultural lands and human settlements from inundation.
Support for Ecosystem Services	The restoration efforts will enhance local biodiversity by providing habitats for wildlife and supporting ecological health. Furthermore, access to water for irrigation will promote sustainable practices like crop rotation and cover cropping, which improve soil health and fertility over time.

Output 1.1.3 Farm connections established using a landscape approach

Activity 1: Connections from the restored ponds and rehabilitated infrastructure to the farms

This activity will connect farms to rehabilitated public ponds and restored water infrastructure, ensuring a reliable and efficient water supply for agricultural production. In a predominantly rain-fed agricultural system like Grenada's, where water scarcity during droughts is a recurring challenge, this activity is critical for improving water distribution and enhancing agricultural resilience. Using a landscape approach, this activity will ensure that water is distributed efficiently across agricultural lands, minimizing losses and promoting sustainable water management practices. The farm connections activity is aligned with **National Goal #2** of Grenada's National Sustainable Development Plan (NSDP) 2020-2035, which focuses on *modern, climate-resilient infrastructure that supports the agricultural sector's productivity and sustainability*.

Design of Efficient Water Distribution Networks: ENRICH will support the design and install water distribution systems that transport water from restored public ponds to farms across Grenada, Carriacou, and Petite Martinique. By the end of Year 3, a total of **600 acres** will be connected to rehabilitated water infrastructure, supporting farmers who are most vulnerable to drought. The water distribution systems will consist of pipelines, pumps, and other irrigation technologies that minimize water loss through leakage and evaporation, ensuring more water reaches the crops during dry spells.

The farmers benefiting from investments under output 1.1.2. and 1.1.3 (component 1), will also be eligible to participate in Farmer Field Schools (2.1.2) and will be considered for financing (2.1.3). In the case of FFS, a specific module will focus on strengthening water users associations and managing small water harvesting and distribution systems, and how to recover operations and maintenance costs.

Activity 2: Water Quality Assurance testing

Grenada Bureau of Standards (GBS) will oversee formal water quality assessments, focusing on monitoring for chemical residues, salinization, and other indicators of water quality that could affect agricultural productivity and environmental health. The PCU and NAWASA will provide additional support to ensure comprehensive water quality management. This element of the activity will also provide targeted training for local communities and farmers in recognizing and managing potential water quality issues, enabling them to collaborate proactively with the PCU and GBS to address any concerns promptly.

Output 1.1.4 Hurricane-resistant infrastructure constructed and rehabilitated

The construction and upgrading of hurricane-resistant facilities within the **ENRICH Project** is designed to protect key agricultural assets, including crops, livestock, and equipment, from the destructive impacts of hurricanes and storms. This activity supports **National Goal #2** of the **National Sustainable Development Plan (NSDP) 2020-2035**, which emphasizes the *importance of climate-and-disaster-resilient infrastructure for the long-term sustainability of Grenada's agricultural sector*.

Activity 1: Hurricane-Resistant Facilities constructed and rehabilitated

This activity focuses on constructing and upgrading hurricane-resistant infrastructure across the country, in at least **50 communities**, to safeguard key agricultural resources, ensuring farmers can recover quickly and resume operations after extreme weather events. The facilities that will be included are presented in the table below.

Table 7 typology *of hurricane resilient infrastructure*

Facility	Main purpose
Storage Warehouses for Crops	Designed to protect valuable crops like cocoa and nutmeg from wind and water damage, the project will construct **approximately 10 storage warehouses** across the target regions. These warehouses will secure harvested crops, ensuring that farmers can continue post-harvest processing and prevent economic losses from spoilage.
Agricultural Equipment Storage	To protect farm machinery, such as tractors and irrigation systems, the project will build **around 10 agricultural equipment storage units.** This will ensure that farmers can safeguard their machinery from damage during storms, facilitating a faster recovery post-disaster.
Processing Facilities	Post-harvest processing is a critical aspect of value addition in Grenada's agricultural economy. The project will establish **approximately 10 hurricane-resistant processing facilities**, to protect machinery and processed goods, ensuring that production can resume promptly after extreme weather events.
Livestock Pens	Protecting livestock during hurricanes is essential for maintaining meat and dairy production. The project will construct **around 20 hurricane-resistant livestock pens**. These pens will shelter animals and related equipment, minimizing losses and ensuring farmers' livelihoods are preserved.

In total, the ENRICH project will develop **30,000 square meters** of hurricane-resistant infrastructure across Grenada, benefiting smallholder farmers and agricultural communities.

A key basis of this activities involves a participatory approach to decision-making, ensuring that each community has a role in determining the type of infrastructure, its location, and its management (under Output 1.1.1). Led by RDU and guided by a dedicated infrastructure specialist, this process will facilitate community workshops to gather input, assess needs, and define management structures.

To ensure the effective use and maintenance of these facilities, the **ENRICH Project** will provide targeted training for farmers and community members (under sub-component 2.1). These trainings will cover best practices for facility management, maintenance, and usage.

Infrastructure resilient to the impacts of climate change

To ensure that infrastructure constructed under Outputs 1.1.4 and 1.1.2 is resilient to climate

change impacts, the project will integrate innovations in design, materials, and participatory planning. These measures will ensure that facilities can withstand extreme weather events such as hurricanes, heavy rains, and prolonged dry spells, while also promoting sustainability and local ownership. A specific guide for identification and construction of hurricane resistant infrastructure with a gender focus will be prepared

For the hurricane-resistant facilities under Output 1.1.4, the project will incorporate advanced design techniques, such as hurricane-resistant building methods. These methods include ensuring that every major component of a structure is securely tied together from the roof to the foundation, creating a unified structure capable of withstanding hurricane-force winds. This technique has been successfully implemented across the Caribbean[61], offering robust protection against severe storms. Additionally, the project will utilize reinforced concrete, wind-resistant roofing materials, and elevated designs to reduce the risk of damage from both high winds and flooding.

Under Output 1.1.2, the restoration and rehabilitation of public ponds will incorporate cutting-edge techniques to improve water storage and management. Ponds will be lined with impermeable materials to minimize water loss through seepage, and check dams will be constructed to enhance water harvesting from rainfall and runoff. Community workshops will ensure that local stakeholders are actively involved in the design and maintenance of these systems, fostering ownership and sustainability. The project will also include disaster-resilient construction training for local communities, drawing on lessons from initiatives such as Habitat for Humanity's disaster-resilient construction program in the Caribbean[62]. This program has demonstrated success in equipping local communities with the skills to build and maintain infrastructure capable of withstanding hurricanes and other natural disasters.

Component 2. Climate-resilient innovations and investments for vulnerable rural households and their most vulnerable members

Outcome 2.1. Vulnerable rural households and their most vulnerable members have greater capacity to adapt to climate change

This outcome aims to equip farmers with the tools and knowledge needed to adapt to the increasing impacts of climate change in Grenada. It focuses on two critical areas: (i) capacity building such as promoting sustainable, climate-resilient agricultural practices and (ii) providing financing to support the development of these practices and to restore agricultural value chains under emergencies, especially following severe events like Hurricane Beryl.

In Grenada, the largest agricultural production systems, such as nutmeg and spice production, are naturally climate-resilient (or “climate-smart”). These arboreal crops sequester carbon, contribute to soil and watershed protection in upland areas, and demonstrate relative drought resistance. However, nutmeg trees, which are shallow-rooted, are highly vulnerable to hurricane damage. In response, farmers have diversified into alternative export crops, including tropical fruits and cocoa, with mixed effects, as cocoa trees are also shallow-rooted and were heavily affected by Hurricane Beryl. Beekeeping is also emerging as a promising option for lands occupied by forests and perennial crops (World Bank, 2014).

Outcome 2.1 addresses the needs of vulnerable rural households and their members through two main avenues: (i) equipping farmers with climate-smart tools and knowledge for sustainable, climate-resilient agricultural practices and (ii) providing financing and capacity-building support to individuals, including those without land, who wish to start an agricultural activity or business. This

[61] https://dwacaribbean.com/design-guidelines-for-hurricane-resistant-buildings/
[62] https://www.habitat.org/lac-en/newsroom/2018/habitat-teaches-disaster-resilient-construction-methods-caribbean

dual focus ensures that both farmers and aspiring entrepreneurs in rural areas gain the resources and support necessary to adapt to climate impacts, strengthen their livelihoods, and foster economic resilience.

In response to the specific climate change challenges faced by Grenada's rural communities, particularly those most vulnerable to climate impacts, the ENRICH Project will include a robust **Vocational Skills Training** and **Entrepreneurship and Business Development Services** component (See Annex 2 on Lessons learnt). This focus on empowering women and youth by building their capacity to start and manage businesses that are resilient to climate risks will ensure sustainable livelihoods.

In addition, the ENRICH Project will strengthen extension services support to farmers using the Farmer Field School (FFS) approach. This method encourages participatory learning, where farmers work in clusters and engage in hands-on training that focuses on problem-solving through experiential learning in real farm environments. The FFS approach is a proven model in the region for knowledge transfer and has been adapted from the success of group extension services employed in Grenada's SAEP Project. The focus will be on promoting practical application of CSA technologies and ensuring that farmers acquire the knowledge and skills to address climate-related challenges effectively.

The Farmer Field School (FFS) approach under the ENRICH Project aligns closely with Grenada's **National Adaptation Plan (NAP) 2017**, particularly with Measure 4.11 and Measure 4.17. Measure 4.11 emphasizes the establishment of climate-smart agriculture (CSA) demonstration sites to showcase a variety of technologies and techniques aimed at enhancing resilience in the agricultural sector.

Output 2.1.1 Capacity of women and youth on entrepreneurial marketing and business development reinforced

Activity 1: Update training materials and refresh existing trainers

This activity will focus on identifying the partners that will help prepare training material and ensure that its trainers are up to date, or that refresher trainings are organized. A memorandum of understanding or of Activity will be signed with the New Life Organization (https://www.newlo.org/), and organization specialized in vocational skills training in Grenada.

The same dynamic will take place with the Grenada Investment Development Corporation (GIDC) (https://gidc.gd/) on Business Development Services and Entrepreneurship trainings. The GIDC will serve as the key implementing partner, assisting young entrepreneurs in identifying viable markes, building resilience into their business models, and accessing necessary financing.

Activity 2 Vocational Skills Training

The Project will provide targeted Vocational Skills Training (VST) to **300 unemployed and underemployed youth aged 16 to 35 years**, with a particular focus on rural areas to engage in climate-resilient agriculture. At least **50%** of these beneficiaries will be women. Youth from poor households, characterized by larger-than-average family sizes, low educational attainment, and single-headed households, will be prioritized. These beneficiaries will be selected based on specific criteria, including:

- Households with more family members than the national average,
- Households with unemployed adults,
- Households with adults lacking secondary or tertiary education,
- Households headed by single parents.

To align with the national response to climate change, the training will focus on equipping young people with skills in climate-smart agriculture, renewable energy, sustainable tourism, and eco-friendly agro-processing. These skills will help them pursue employment opportunities in sectors that are integral to Grenada's climate resilience strategy. VST service providers will work closely with the **PCU** to ensure that training is aligned with market demand, particularly in green industries like sustainable agriculture and renewable energy. Each VST course will begin with **Life Skills Training**, including nutrition and entrepreneurship modules, to promote holistic development. The Project will also cover the cost of tuition, training materials, and provide allowances for transportation and childcare for single-parent trainees.

Activity 3 Entrepreneurship Training and Business Development Services

The **Entrepreneurship Training (ET)** and **Business Development Services (BDS)** activities aim to provide targeted support to youth and women with the entrepreneurial drive to establish or expand businesses that are climate-resilient and sustainable. This component will help beneficiaries develop and scale up businesses that are aligned with Grenada's climate change adaptation strategy, including ventures in sectors such as organic agriculture, renewable energy, eco-tourism, and agro-processing.

The Project will support **250 youth** (16 to 35 years, 60% female) in following the **ET** course. Participants will be trained to develop business ideas that focus on market opportunities with a strong emphasis on climate adaptation and sustainability. In total the project expects to target at least 270 women under this output 2.1.1

Output 2.1.2 Climate-adaptive agricultural technologies and best practices promoted

The FFS activity is designed to serve as a practical, field-based learning platform, where farmers can observe and test CSA innovations in real-time. Additionally, Measure 4.17 calls for the creation of an FFS programme as a platform for peer-to-peer learning, enabling farmers to exchange knowledge and experiences, particularly regarding the implementation of CSA practices.

The Farmer Field School (FFS) approach is a learning method that differs from traditional extension approaches, which focus on the "training and visit" model. It is participatory and emphasizes self-directed learning, positioning the trainer as a facilitator. Over time, this approach has evolved to include various target groups (farmers, livestock producers, youth, and women) and topics. The goal of learning is to help farmers become better decision-makers on their own farms, businesses, and within their ecosystem. Learning follows a structured format: trained facilitators (trained to facilitate, not teach) organize each session around a learning topic and an observation session, where farmers observe, record, and discuss what happened in the field.Each farmer school is different; farmers gather and decide on the topics to be addressed as well as the appropriate meeting intervals: for seasonal crops like tomatoes, meeting twice a week may be necessary; for perennial crops like coffee, meeting every two weeks might suffice, depending on the crop's phenology. The subjects a farmer wishes to learn will also evolve over time as they become better decision-makers and more autonomous—managing a small backyard garden may no longer be sufficient, and they may want to move toward selling in markets or other more commerce-oriented activities. They may also decide that after learning for a few cycles, they have learned enough to manage independently. Due to the increased social cohesion developed during this process, many schools choose to stay together and engage in other activities, such as savings or value addition. (FFS guidelines, 2016 FAO).

The FFS activity is also closely aligned with the recommendations from the *Report on Damage and Needs Assessment and Rehabilitation Plan for the Agricultural Sector in Grenada following*

Hurricane Beryl (MoA, 2024). In the short term, the report emphasizes the need for soil restoration measures to prevent further erosion and restore soil fertility, which will be addressed through the CSA grants provided under this sub-component. Additionally, the report highlights the importance of providing training and technical support to technical officers and farmers on resilient farming techniques.

ENRICH will ensure that FFS programs provide targeted capacity building on sustainable and climate-smart agricultural practices to equip farmers with the skills necessary for post-disaster recovery and long-term resilience. In line with the long-term resilience-building strategies outlined in the report, the FFS will also promote the diversification of crops and sustainable farming practices, encouraging farmers to inter-crop long-term tree crops with shorter-term vegetables and staples. This diversification will reduce farmers' reliance on a single crop and improve their overall resilience to future disasters. The MoA will collaborate with private nurseries, CARDI, and other stakeholders to provide vegetable and staple crop seedlings and seeds, supporting the establishment of backyard gardens. These efforts will ensure the availability of key crops in the short term, while FFS and CSA grants continue to drive sustainable agricultural practices in the long term.

Consultations highlighted the need to improve access to mechanization and equipment, especially for land preparation, harvesting and other labour-intensive operations, which would make farming more attractive, to older farmers, but also women and youth. The project will provide technical assistance and financing to farmers regardless their age. For older farmers, the focus on FFS and visits will be crucial as they are less likely to become part of virtual activities. Furthermore, the project will promote the incorporation of young men and women to farming. This proved successful through the Entrepreneurship Training of SAEP, where youth were trained to address the economic activity as a business, with updated technologies and using social media to capture new clients. A large proportion of the business opportunities identified by these young entrepreneurs were in agriculture.

Activity 1: Prepare training materials and conduct training of trainers' events

A MoU/MoA will be prepared with University of West Indies (UWI, https://www.uwi.edu/) to prepare FFS training material, train its trainers on a range of technical topics related to Climate Smart agriculture.

In this activity, each partner to the ENRICH project will conduct its Training of trainers events. The FFS will be organized with the support of various agencies, each bringing their specific expertise based on the needs of the farmers and the type of training required. As presented earlier, technicians who will deliver the FFS training will first receive thorough preparation under the **University of the West Indies (UWI)**.

The FFS program will train at least 40 extension officers from the Secretariat of Agriculture, Lands and Forests within MED and the Grenada Cocoa Association (GCA) as well as at least 60 farmer facilitators, selected from respected leaders within farming communities. Priority will be given to women and youth facilitators, supporting the ENRICH project's goal of empowering marginalized groups. All extension staff will be trained methodologies and techniques for the inclusion of beneficiaries with a gender focus. These facilitators will be trained to guide peer-to-peer learning in FFS sessions, focusing on hands-on approaches where farmers actively observe, record, and experiment with climate-smart technologies. The training will include key areas such as integrated soil fertility management, pest and disease control through Integrated Pest Management (IPM), agroforestry, water management, and small-scale mechanization. Farmer facilitators will collaborate closely with extension officers to ensure that FFS sessions are aligned with national

agricultural priorities, fostering knowledge sharing and sustainable practices. Each farmer facilitator will oversee one FFS site initially, with the possibility of expanding to two sites in subsequent years, thereby enhancing local knowledge exchange and innovation in climate-resilient farming.

Activity 2: Scale of the FFS Program

The Project will establish **120** Farmer Field Schools over the course of its implementation, aiming to conduct four FFS sessions per year over a three-year period, beginning in the second year. With each FFS accommodating around 25 farmers, a total of **3,000** participants are expected to benefit directly from this initiative by the end of the project. This activity will ensure that facilitators identified under the FFS are equipped and mobile. An allocation will be set aside to finance motorbikes as well as iPADs, and recurrent expenditure to allow them to perform their support to farmer field schools. Additionally, FFS will have access to targeted grants (under Output 2.1.4 – Activity 3) to demonstrate specific climate-smart technologies. Approximately 1200 women will be targeted for training under this output, representing 40% of all farmers trained under FFS.

Activity 3: Implementation of FFS in Production Areas

The FFS sites will be established in key agricultural production zones, chosen based on the criteria of accessibility, soil health, and climate vulnerability. These sites will act as practical learning environments where farmers, led by their facilitators, will meet regularly to observe and test various CSA practices. The planning process for FFS will involve participatory consultations in each village, allowing farmers to define the topics and activities they are most interested in. This could include water conservation techniques like drip irrigation, rainwater harvesting, and mulching, alongside agroforestry practices and crop diversification.

The parcels chosen for FFS will be representative of the region's agro-ecological conditions, ensuring that lessons learned are applicable across similar farming systems. The FFS will run for approximately 12 months for crops such as cocoa and root vegetables, with frequency of the meetings depending on the type of production. Agroforestry FFS will have a longer duration of 3 years, due to the nature of tree crop development and resilience-building measures, requiring less frequent meetings.

Each FFS will serve not only as a learning platform but also as demonstration plots, showcasing the practical application of climate-resilient techniques. These sites will attract local farmers who may not be direct participants in the FFS but are keen to learn from their peers. The facilitators will maintain close links with extension officers from the MoA and GCA, who will provide technical support and oversight to ensure the successful implementation of climate-smart techniques. The choice of topics to work on will be made in a participatory manner with the concerned producers. The FFS specific technical pathway are presented in the table below:

Table 8 typology of farmer field schools

Type of FFS	Approx. Number of FFS	Specific Technical Pathway	Cross-cutting Technical Pathway
Agroforestry Systems	48	- Climate-resilient cocoa and nutmeg agroforestry systems. - Best practices for cocoa/nutmeg production (grafting, pruning, shade management). - Composting and soil fertility management in agroforestry. - Drought-resistant crops and diversification strategies. - Water and irrigation management systems (drip irrigation, rainwater harvesting).	- Integrated Pest Management (IPM) using eco-friendly biopesticides and natural repellents. - Climate-smart crop diversification and intercropping techniques. - Soil moisture conservation (mulching, organic matter) for drought mitigation. - Introduction to small-scale mechanization tools (e.g., hand-held

		- Integrated water management for dry and wet seasons. - Introduction to agroforestry systems combining cocoa/nutmeg with other nitrogen-fixing crops (e.g., soursop, bananas, legumes) and deep-rooted tree systems (Guava, Moringa, Coconut, Cashew or Tropical Hardwoods) - Species selection for agroforestry: leguminous trees for nitrogen-fixing and erosion control. - Organic tree crop management, pruning, shade regulation. - Agroforestry systems for water retention and erosion control. - Planting techniques for mixed crops in agroforestry systems.	equipment for low-impact tilling). - Erosion control techniques through live barriers and mixed cropping systems. - Soil conservation through agroforestry practices. - Agroecological approaches to maintaining biodiversity within agroforestry systems. - Organic composting and fertilization within agroforestry. - Livestock integration in agroforestry (cut-and-carry fodder systems).
Climate-Smart Livestock	24	- Livestock management in climate-vulnerable areas (Carriacou, Petite Martinique). - Introduction of climate-resilient forage systems (cut-and-carry pastures). - Drought-resistant livestock feed production. - Small livestock management for climate resilience (goats, chickens). - Waste management (composting of livestock manure).	- Integration of livestock into climate-resilient farming systems. - Use of organic composting methods for manure management. - Water management for livestock systems in drought-prone areas.
Organic Farming and Composting	24	- Introduction to organic farming techniques. - Production of organic fertilizers and composting. - Transitioning from conventional to organic production for cocoa/nutmeg systems. - Soil fertility management through composting, cover cropping, and mulching.	- Climate-resilient practices such as using organic fertilizers to improve soil health and water retention. - Managing crop residue for organic mulching to conserve soil moisture. - Integration of small livestock for closed-loop organic systems (composting animal manure).
Water Use Efficiency	24	- Training on water-efficient irrigation methods (drip irrigation, sprinklers, and other precision systems). - Introduction to rainwater harvesting techniques at farm level. - Practical strategies for water use optimization during drought periods. - Soil moisture conservation techniques (mulching, cover cropping). - Promoting drought-resistant crop varieties and water-saving irrigation techniques.	- Climate-resilient water management practices. - Water conservation practices for smallholder farms (rainwater harvesting, drip irrigation). - Ecosystem-based approaches to water use and soil moisture retention. - Community-based water management for agriculture.

Activity 4: Dissemination of Information and Innovation

The project will leverage existing communication networks to disseminate the findings and lessons from the FFS to a broader audience. Local radio stations, farmer networks, and social media platforms will be used to share best practices on CSA technologies and agroforestry. Special attention will be given to environmental challenges such as erosion and deforestation, emphasizing sustainable practices. Facilitators will work with extension services and local NGOs to ensure that the FFS outcomes are shared with the broader farming community, enabling wider adoption of the demonstrated techniques.

Output 2.1.3 Resilience enhancing investments financed

There are two main types of financing investments to be supported by the Project: (i) Start-up

financing; (ii) Resilience-enhancing technologies (known as well as CSA practices).

Activity 1 *Start-up financing*

It is anticipated that at least 200 individuals (80%) will successfully complete the ET/BDS course and receive initial funding, or a "First Push," to develop a concept note for their business idea. Of these, it is expected that 120 individuals (60%) will progress to submit a full business plan and receive financing of up to USD 5,000. The First Push grant supports initial testing of the business idea, while the subsequent Business Grant, awarded to those with a full business plan, aims to establish the enterprise on a sustainable footing. These grants will encourage the adoption of climate-resilient practices in new enterprises.

Proposals will be evaluated based on criteria including scalability, market potential, and the participant's commitment and achievements during the training. More ambitious proposals involving multiple participants within the same business may receive funding up to USD 30,000, with a 10% beneficiary contribution requirement. Funds will be disbursed in tranches directly to vendors or suppliers, contingent on meeting specified milestones in the business plan and subject to positive progress reports.

Activity 2 Financing of Resilience-Enhancing Technologies / CSA Practices

The Project will support small farmers to adopt CSA/CSSF practices, including home gardeners. It is expected that at least 960 initiatives will be financed, of which 480 backyard gardens, and 480 resilience-enhancing technologies – such as Erosion and Storm Protection structures, which will be financed following participation in the FFS under 2.1.2, and will consist in a one-off matching grant (see details in Activity 3). The investment in Climate-Smart Agriculture (CSA) under Activity 3 is aligned with Grenada's National Adaptation Plan (2017) – Measure 4.14, which supports the active involvement of farmers in implementing agroforestry projects to adapt to potential landscape changes.

This activity aligns with the recommendations from the *Report on Damage and Needs Assessment and Rehabilitation Plan for the Agricultural Sector in Grenada following Hurricane Beryl (2024)*, which calls for the procurement of commercial-grade shredders to convert fallen trees into mulch, biochar, and other useful products for sustainable soil management. The report also emphasizes the need to provide machinery, such as shredders and chainsaws, alongside mechanisms for transparency and sustainable use, to ensure that biodegradable debris is transformed into valuable resources for Sustainable Land Management (SLM), Climate-Smart Agriculture (CSA), and biodiversity conservation.

The grants will finance a variety of activities and services, including but not limited to:

- Small works (e.g., irrigation systems, drainage),
- Land access legal advice,
- Land preparation,
- Inputs (seeds, organic fertilizers),
- Equipment (solar pumps, drip irrigation systems),
- Technical assistance,
- Packaging and labelling,
- Certifications, and
- Laboratory analysis.

However, the Project will not fund activities that could have negative environmental effects, such as farming on steep slopes, deforestation, or non-agricultural house improvements. More specifically, ENRICH will support the adoption of **Climate-Smart Agriculture (CSA)** practices, drawing from the experiences of the **Sustainable Agriculture Enterprise Programme (SAEP)** and the **Climate-Smart Agriculture in Grenada** analysis by the **World Bank Group** in

collaboration with the **CGIAR** (2014). These CSA practices focus on increasing water availability, reducing soil erosion, improving soil health, and promoting sustainable farming systems. The Project's CSA investments will include the following:

Activity 3.1 Financing Water Management Practices:

CSA practices will prioritize technologies that increase access to water and improve water use efficiency to address the longer drought periods that are becoming more frequent due to climate change. These include, but do not limit to:

- **Underground cisterns**: To store rainwater and ensure water availability during dry seasons.
- **Rainwater harvesting systems**: Collection and storage systems designed to maximize the capture of rainwater for agricultural use.
- **Storage tanks**: To increase water availability in farming systems, enabling better production planning.
- **Solar pumps**: Solar-powered systems for irrigation and water management, reducing dependency on fossil fuels.
- **Drip irrigation systems**: For precise and efficient watering, especially important for high-value crops.
- **Mulching and terracing**: Mulching material such as shredders, to conserve soil moisture and improve water infiltration, particularly in vulnerable eco-systems such as grazing lands.

For livestock farmers, the Project will support:

- **Pens and fencing**: To manage and protect livestock while preventing overgrazing.
- **Cut-and-carry pastures**: These will ensure fodder availability during dry periods, particularly in **Carriacou**, where the climate is drier, and surface water is scarce.
- **Compost production**: Utilizing livestock droppings to create organic fertilizers that improve soil health and reduce the use of chemical inputs, which have been linked to river pollution in certain parishes like **St George's**, **St John**, **St Patrick**, and **St Andrew's**.

These technologies will enable farmers to plan production more efficiently, targeting higher prices in the dry season.

Activity 3.2 Financing Erosion and Storm Protection

To reduce soil runoff and storm damage in heavy rain periods, the Project will finance the following practices:

- **Live barriers**: Using forest species to create natural barriers that mitigate soil erosion and reduce storm impacts.
- **Intercropping**: Planting fruit trees and vegetables together to improve biodiversity and soil stability.
- To adapt to heavy rainfall, the Project will also support the construction of **small on-farm drainage systems**, encourage the use of **shade houses** for controlled growing environments.
- **Composting facilities**: Establishing facilities for compost and vermicompost production to enhance soil fertility, contributing to overall ecosystem health.
- **Beekeeping**: Promoting the productive use of forest areas required for watershed protection, which will also improve biodiversity and ecosystem services.

Furthermore, The Project will encourage the establishment of **backyard gardens** to improve food security and provide income generation opportunities for vulnerable populations. These backyard gardens will focus on **roots and tubers** production, alongside nutrient-rich crops like **orange flesh sweet potatoes**, **cabbage**, **carrots**, and **green leafy vegetables**. The gardens will also allow for the integration of **fruit trees** or **Moringa** trees and, where feasible, include small livestock such as **goats, chickens, and rabbits** to enhance food security and nutrition. The Project provides flexible

financing for backyard gardens and other CSA investments, with a structured system of grants, beneficiary contributions, and ceilings based on farm size and type of production. Below is a summary table.

Table 9 typology of grants under component 2

Type of Beneficiary	Maximum Grant (USD)	Contribution by Beneficiary	Special Notes
Backyard Gardens	1,500	5% in-kind or cash	Nutrient-rich crops and small livestock
Individual Small Farmers (<2.5 acres)	10,000	10% (5% in cash)	Financing installation and CSA practices
Group Proposals	30,000	10% (5% in cash)	Ceiling depends on group size
Individual Medium Farmers (2.5 - 7 acres)	10,000	20% (10% in cash)	Based on SAEP lessons learned

CSA Grant Selection Committee: The committee will evaluate proposals based on climate vulnerability and socio-economic conditions. Special consideration will be given to young farmers (aged 18-25), single parents, and unemployed or underemployed individuals who may receive a partial or full waiver of their financial contribution. Approximately 40% of all farmers benefiting from finance under ENRICH will be women, and the project is expecting to reach 600 women and your implementing resilience enhancing investments with Project financing

Grant Disbursement: Beneficiaries will not receive direct cash transfers. Instead, the **Project Coordination Unit (PCU)** will manage payments to suppliers based on the decisions of the Selection Committee and the reports of extension workers.

To address the implementation and administration of grants under this output, the Project will adopt a structured approach. Annual calls for proposals will be issued, targeting specific geographic and sectoral priorities, ensuring alignment with the project's overarching goals and climate adaptation needs. The CSA Grant Selection Committee, a multidisciplinary body, will oversee the review, selection, and approval of grants. The committee will comprise representatives from the MoA, the Grenada Development Bank (GDB), the Grenada Bureau of Standards (GBS), the National Climate Change Committee (NCCC), and the Gender Department of the Ministry of Social Development and Housing, with the PCU acting as the secretariat without voting rights. Members will be selected transparently based on expertise and institutional roles, with mechanisms in place to prevent conflicts of interest, such as excluding individuals directly involved in grant proposals or project implementation from voting.

Proposals will be ranked according to predefined criteria, including (a) the severity of the impact of climate change on production and income and (b) the socio-economic condition of the beneficiary, emphasizing contributions to improving livelihoods, income, or nutrition among vulnerable groups. This ensures that grants are awarded to those most affected by climate change and with the greatest potential to benefit from the intervention. The committee will ensure a participatory, impartial, and transparent decision-making process, guided by these criteria. Oversight of the grant administration process will be provided by the PCU, ensuring adherence to project objectives and alignment with environmental and social safeguards.

Component 3. Climate resilient institutions and risk mitigation framework

Outcome 3.1 Improved capacity of local institutions and vulnerable communities to manage and share climate adaptation knowledge and cope with adverse climatic shocks.

Based on the experience of implementing SAEP, innovation and coordination are important ingredient to ensure climate change resilience. Grenada's small size means that it requires the

collaboration of regional institutions for climate monitoring and meteorological services, while at the same time incorporating the lessons from adopting innovative climate smart agriculture practices. Grenada's vulnerability to CC presents opportunities for accessing Green Finance, which leads to multiple overlapping projects. Strengthening policy and technical institutions is essential to monitor climate impacts, avoid duplication of efforts, and create a coordinated local agenda for addressing climate change.

This outcome will focus on capacity building at the policy and institutional levels regarding climate change adaptation and access to finance mechanisms. It will build institutional capacities to support the implementation, monitoring, reporting and verification of Project action within the framework of the Nationally Determined Contribution (NDC) and the National Adaptation Plan (NAP). Key officials and technicians from the following departments will be identified for formal training and on-the-job training. Departments will include the Ministry of Economic Development, Planning, Tourism, ICT, Creative Economy, Culture, Agriculture, and Lands, Forestry, Marine Resources and Fisheries and & Cooperatives of Grenada, in particular the land and water divisions and extension departments in the Secretariat of Agriculture, Lands and Forests, , the Ministry of Climate Resilience, Environment and Renewable Energy, the Ministry of Mobilization, Implementation and Transformation, and the Ministry of Carriacou and Petite Martinique. Activities under this component also take into consideration the need to improve current risk management platforms and tools applied to the agrifood sector, with particular attention to priority areas and beneficiaries targeted by the Project.

In addition, this outcome will promote a pilot parametric microinsurance scheme for vulnerable agroforestry smallholders. Hurricane Beryl has underscored how climate-related extreme events can severely impact agricultural production and the livelihoods of smallholder farmers. This project aims to develop a tailored parametric insurance scheme in collaboration with the Climate Risk Adaptation and Insurance in the Caribbean (CRAIC) program, led by the Caribbean Catastrophe Risk Insurance Facility Segregated Portfolio Company (CCRIF SPC). The scheme will help vulnerable, low-income individuals manage climatic shocks through quick liquidity support, enabling them to avoid coping strategies that could exacerbate poverty or increase vulnerabilities. It is intended to support individuals affected by these events without them having to rely on government aid or remittances. Additionally, the microinsurance product is designed to enhance the long-term creditworthiness of individuals, potentially opening access to financial services that might otherwise be inaccessible to them. This pilot also holds significant potential for upscaling, wider access to climate resilience solutions for smallholder farmers across the region.

Output 3.1.1 Institutional capacity strengthened for the implementation of policy measures, climate action reporting advocacy and knowledge management

This output aims to strengthen the capacities of institutional stakeholders to mainstream climate change impacts assessment into key regulatory / policy frameworks and strategic programs, thereby facilitating knowledge management and learning. Overall this output is expected to strengthen the capacities of approximately 50 institutional stakeholders, of which 50% will be women. This will be achieved through the following activities:

Activity 1 Monitoring Reporting and Verification (MRV)

This activity will include the development or strengthening of a Monitoring, Reporting and Verification system on climate change adaptation to inform implementation reports related to the NDC and the NAP, and/or to contribute to baseline data for the next version of these documents. Approximately fifty staff from various departments will be trained in this respect. An inter-departmental working group led by MCRE will be set-up to operationalize this training and to establish effective coordination, share knowledge and review proposals for key regulatory and

policy framework reforms.

Activity 2 Mainstreaming climate change impact assessment into policy and program

This activity will build capacities of the same stakeholders to mainstream climate change impact assessment into key regulatory and policy frameworks, as well as into strategic programs. This will also involve improving coordination and information sharing between relevant departments.

In addition, capacities of key staff will be strengthened so that they can contribute to revisions and proposals for reform, in order to improve the coordination between key regulations and policies, in order to achieve resilient, sustainable agri-food systems, based on the food, water, energy and ecosystem nexus and the needs for enhanced coordination. The project will seek synergies with the ongoing Grenada First Recovery and Resilience Programmatic Development Policy Credit (approved in 2022) and the Grenada Second Recovery and Resilience Programmatic Development Policy Credit (approved in 2023), both financed by the World Bank. The World Bank's budget support aims to build environmental resilience, primarily in the energy sector, through a comprehensive Disaster Risk Management (DRM) framework for extreme climate events. Through this activity, the Adaptation Fund project will complement the DRM framework by focusing on the agricultural sector.

Activity 3 Support Climate Vulnerability Assessment

This activity will aim to strengthen collaboration with the Grenada Development Bank (GDB), in order to engage in a policy assistance exercise, and eventually amend GDB's Climate Financing Policy and to a Climate Vulnerability Assessment (CVA) tool that GDB could use to screen its clients, existing and potential, including agriculture producers, micro, small and medium enterprises, as well as agro-processors. In addition, this activity will include training of GDB and Grenada Investment Development Corporation (GIDC), and other stakeholders to implement the CVA tool, to improve the financing of sustainable investments.

Activity 4 Contribute to the AFOLU climate finance portal with the aim of promoting knowledge management, learning and climate change action

This activity will aim to strengthen the capacity of select government officials, assembled into an inter-departmental working group, to contribute to the development of a climate finance portal for Grenada with a focus on agrifood sector related financing with the aim of promoting knowledge management, learning and climate change action. Grenada has an existing Climate Finance Portal but it focuses only on water and energy at the moment[63], so ENRICH will support expanding that to cover the AFOLU sector as well.

In addition, this activity will support engaging into a national dialogue with a wide range of stakeholders from civil society, private sector and government officials to identify potential innovative financing mechanisms for CSA and define an action plan on the most feasible option.

Output 3.1.2 Vulnerable agroforestry farmers equipped with parametric microinsurance for the agricultural sector

To address risks related to climate-related extreme events holistically, this output aims to complement the adoption of CSA practices under Components 1 and 2 with a parametric insurance for vulnerable agroforestry farmers.

Activity 1 Parametric microinsurance for vulnerable agroforestry farmers

According to the GCA, approximately 3,500 acres of cocoa systems, or about 90,000 trees, have

[63] https://climatefinance.gov.gd/

been completely lost due to Hurricane Beryl. Additionally, around 85% of cocoa-related facilities were affected. Cocoa farmers indicated that the full recovery is projected to take up to 8 years.

Following the passage of Hurricane Beryl, the Caribbean Catastrophe Risk Insurance Facility Segregated Portfolio Company policies for tropical cyclones, excess rainfall, and COAST were triggered, resulting in a payout of USD 55.6 million to Grenada. While this parametric insurance provided short-term liquidity to the government, it is important to note that no specific insurance mechanism exists for the agricultural sector. A payment of USD 3.4 million from the sovereign insurance scheme has rather been allocated to assist cocoa and nutmeg farmers. However, GCA members are experiencing delays in receiving these insurance payments, as the GCA faces liquidity constraints that limit its capacity to respond effectively and comprehensively to the recovery needs of its members.

Under government directives, compensation payments to cocoa and nutmeg farmers have been set at EC 4,500 (USD 1,617) for farmers with less than 5 acres and EC 9,500 (USD 3,519) for those with 5 acres or more. However, this compensation is insufficient to cover the recovery costs. It is estimated that USD 2,650 per acre is needed to initiate the establishment of a cocoa-based agroforestry system. This amount includes initial investments but does not account for other critical costs in the post-Beryl context. Land clearing requires specialized equipment and is labor-intensive, with labor costs high due to scarcity in the agricultural sector. Additionally, early maintenance costs are significant, and income from short-cycle crops within the agroforestry system is insufficient to yield a net positive return in the first year. Hence, the current payment scheme falls short of the investment required to restore one acre of cocoa. Consequently, GCA is concerned about potential membership decline and land-use shifts toward more profitable activities if further actions are not taken in the short to medium term.

In the aftermath of extreme events such as Hurricane Beryl, the government must prioritize which sectors will receive payouts, including residential and commercial buildings, public infrastructure, industrial facilities, healthcare, energy, education, airports, ports, transportation networks, and agriculture. Given the varying replacement costs across these sectors, residential and commercial buildings, as well as industrial facilities, typically incur the highest costs. Consequently, the agricultural sector often does not receive the highest priority in the allocation of funds, despite the fact that the rural population, and especially smallholder farmers are among the most vulnerable and exposed to such extreme events.

In addition, the financial sector in Grenada is not financing agriculture as it is perceived as high risk due to climatic hazards. Most poor farmers do not have access to loans due to lack of land titles to use as collateral. Financial institutions only service those rural clients that show repayment capacity, particularly from income outside of agriculture. Previous efforts to encourage banks to explore agricultural loans trained officers on borrowers' assessment based on the activity repayment capacity, but banks were not willing to take the risks of the operations and the intervention was not successful. The Credit Unions have presence in rural areas, have more information on the potential clients and on their activities. These financial institutions could be more prone to explore new market niches.

In this context, the Government of Grenada sees the Climate Risk Adaptation and Insurance in the Caribbean mechanism as an opportunity to complement the sovereign coverage provided by the CCRIF that is primarily used for restoring infrastructure damages, so that the support to other economic sectors, particularly agriculture, depends on the amount left. Yet to date, CRAIC has not provided microinsurance payouts to individuals in Grenada There is hence a key opportunity for ENRICH to support the mitigation of climate related risks in two ways: the basic risk of agriculture could be addressed by the adoption of CSA practices (under components 1 and 2), while the risk of extreme events could be covered by the LPP (Component 3).

The CRAIC is led by the CCRIF SPC and was established with the financing of the by the International Climate Initiative (IKI) of the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU). The CRAIC initiative partners with various insurance companies and technical assistance facilities, including the Munich Climate Insurance Initiative (MCII), ILO's Impact Insurance Facility, Guardian General Insurance Limited (GGIL), and DHI (formerly known as the Danish Hydraulic Institute). Together, these partners bring expertise in insurance for low-income groups and advanced technical modeling to create climate risk solutions that support communities affected by climate-related events. The project started in 2011 aiming at addressing CC, adaptation and vulnerability by promoting weather-index based insurance as a risk management instrument in the Caribbean. It targets low income people in the Caribbean, national governments and policy makers in the international climate negotiations. The first phase (2011-2014) developed two climate risk insurance products with pilot activities in three countries. Phase II (2017-2020) incorporated other stakeholders aiming at refining the products developed in phase I and raising awareness on disaster risk management and the role of insurance. The CRAIC has currently operations in 5 countries: Belize, Grenada, Jamaica, St Lucia and Trinidad and Tobago.

The two Climate Risk Insurance products developed are as follows:

- Livelihood Protection Policy (LPP). The LPP is a parametric microinsurance product which targets vulnerable low income individuals and helps them protect their livelihood providing payments within 7 days following extreme events. This swift payout is possible as claims are based on an independent, objective index for rainfall and wind speed in a chosen area of coverage. Once an event occurs such that either index breaches a pre-defined trigger level, a cash disbursement is released to the insured party. This immediate support prevents the severe income and asset loss suffered by poor and vulnerable sectors after an extreme event and takes the place of the savings that better-off population use for sustaining the household and recovering their economic activities. In other words, the LPP allows vulnerable, low income individuals to avoid adopting coping strategies that could lead them deeper into poverty or increase their vulnerabilities. The LPP was furtherly refined in phase II, particularly regarding triggering levels. Guardian General Insurance Limited (GGIL) will be the main distribution channel for the Livelihood Protection Policy (LPP).

- Loan Portfolio Cover (LPC). It targets lending institutions and uses the LPP for borrowers as part of the loan, thus reducing the uncertainty and risk perception of activities that are highly vulnerable to extreme events, such as agriculture and tourism.

Throughout its implementation, CRAIC has elicited a number of lessons learned regarding parametric insurance in the Caribbean that relate to four thematic areas: managing expectations of all stakeholders; product design; market development; and, engagement for sustainability. The first one stresses the need for education at all levels regarding the different components of the Climate Risk Insurance (CRI), since this is an innovation for the financial sector, for the policy makers and government institutions and, particularly, for the target population. Understanding the basic terms and conditions of the CRI, its benefits and limitations, and being aware of the events that trigger the payment are crucial to avoid false expectations. Regarding the design of the product, the CRAIC is recommending that the basic product should be adjusted to the specific risk exposure and vulnerability of each target group. A better understanding of the risks and more information on the frequency and impacts of climatic events would allow for accurate pricing and triggering levels. The role of the Government in reducing distribution costs is key to increase access to poor sectors. Targeting groups and organizations may reduce the cost of the policy, as well as may spread the risks over a number of individuals. Insurance is not a common practice in agriculture, particularly for smallholders, making the role of the government essential in promoting

and distributing it. Government involvement can help increase supply, encourage competition, and support product development. Finally, in the long term, the challenge is mainstreaming CRI into risk mitigation policies and strategies as part of the instruments available for the Government and all stakeholders for mitigating the impacts of catastrophic events.

The Project will allocate part of its budget to assist smallholder farmers in the event of natural disasters such as hurricanes, droughts, or other climate-induced events through the LPP. Given Grenada's vulnerability to extreme weather events, including the recent impacts of Hurricane Beryl in 2024, this parametric microinsurance will ensure that farmers can quickly recover and restore their agricultural systems.

Specifically, ENRICH will enter into a Memorandum of Agreement (MoA) with CCRIF to refine and tailor the Livelihood Protection Policy (LPP) product for a targeted group, focusing on vulnerable agroforestry farmers, to cover critical recovery costs for agroforestry systems. To support this, the project will fund a study to define product triggers, pricing methodology, and eligibility criteria. The eligibility criteria will incorporate a group-based approach, enabling individuals to be covered as part of a broader risk-sharing group, potentially including ENRICH beneficiaries segmented by crop type, such as cocoa and nutmeg. In parallel, ENRICH will also provide financing to raise awareness and train both beneficiaries and extension officers on the new microinsurance product. Through the MoA with CCRIF, a tailored parametric microinsurance product will be made available via Guardian General Insurance Limited and Hannover Re, who will provide reinsurance capacity. This product will offer a grant to a selected group of smallholder farmers, triggered by extreme events such as rainfall and/or high wind speeds.

This activity is aligned with the recommendations from the Report on Damage and Needs Assessment and Rehabilitation Plan for the Agricultural Sector in Grenada following Hurricane Beryl (2024), which emphasizes the establishment of financial mechanisms to ensure transparency, accountability, and rapid disbursement for forest ecosystem restoration efforts. These mechanisms are critical for supporting CSA, Sustainable Land Management, and biodiversity conservation, while also ensuring the continued socio-economic, environmental, and ecological functions in the aftermath of climate-related disasters. ENRICH will integrate these principles by establishing efficient and transparent financial systems for emergency response packages, ensuring that farmers receive timely support to restore their farms and ecosystems after extreme weather events. This pilot is expected to cover 100 smallholder farmers, of which 20% are expected to be women.

B. Project Benefits

Beneficiaries

Overall, the project is targeting approximately 8,000 direct beneficiaries. The project expects to target 1,250 water users under component 1, with improved connection to water for agriculture and training, as well as approximately 3,000 farmers, of which at least 33% women, under component 2, with training and investment of which at least 500 vulnerable households. In addition, the project will target 550 youth and women with vocational skills training and entrepreneurship training and seed financing. Finally, under component 3, the project is expected to strengthen the capacity of approximately 100 officials from various departments, as well as representatives from the civil society, and local governments, while the estimate is that approximately 5,000 members of the public that have access to improved climate information. Indirect number of beneficiaries is expected to reach 15,000, with an average size of family household of three.

Social benefits

ENRICH will target vulnerable smallholders, and especially those particularly affected by and vulnerable to climate change impacts and extreme weather events. The project's targeting strategy will ensure that services supported by the project are provided in a fair, equitable and inclusive manner. This section summarizes some of the main social benefits generated by ENRICH Project.

Empowerment of Vulnerable Communities. The project targets smallholder farmers, especially women and youth, who are often marginalized in the agricultural sector. By providing training, resources, and financial support, it empowers these groups to participate more actively in economic activities, fostering greater social equity. With a focus on female-headed households and rural youth, the project enhances skills in entrepreneurship, sustainable farming, and business management, improving their livelihood opportunities and reducing poverty rates.

Strengthening Community Resilience. Through community-based adaptation strategies, such as the restoration of public ponds and erosion control, the project enhances local capacities to manage natural resources sustainably. This approach promotes self-reliance and preparedness against climate-related hazards. Education and awareness campaigns about climate change adaptation practices help communities understand the importance of sustainable resource management, ensuring long-term resilience.

Health and Well-being. Improved water management practices, including clean water access through rainwater harvesting and wastewater treatment, contribute to better public health. The availability of clean water reduces the risk of waterborne diseases and ensures a consistent supply for drinking, agriculture, and sanitation. By supporting local food production, the project helps ensure food security, providing communities with a stable supply of nutritious, locally grown produce. This is particularly important in reducing the dependency on imported food, which can be expensive and less resilient to supply chain disruptions.

Capacity Building and Knowledge Sharing. The project invests in training and education for farmers on climate-smart practices, pest management, and sustainable agriculture, thereby improving their technical skills and knowledge. It also fosters a culture of innovation and adaptation, which is critical for long-term resilience. Collaboration with local stakeholders, including government agencies, NGOs, and community organizations, ensures that the project's benefits are widespread and integrated into existing local development plans. This creates a network of shared knowledge and resources, strengthening the entire community's response to climate change.

Economic benefits

The ENRICH project delivers significant economic benefits by bolstering Grenada's agricultural sector, enhancing water resource management, and promoting the resilience of local communities against climate change. It creates sustainable livelihoods, improves food security, and fosters economic stability, while addressing the pressing challenges posed by climate change on small island nations. This section presents some of the most salient economic benefits potentially generated by the Project.

Agriculture sector resilience and sustainability. The project focuses on enhancing the resilience of the agricultural sector, particularly smallholder farmers who are most vulnerable to climate change. It provides access to improved farming techniques, drought-resistant crops, and climate-resilient infrastructure, which helps reduce crop failures and losses during adverse weather conditions. By promoting climate-smart agricultural practices, the project aids in stabilizing the agricultural and rural economy, increasing productivity, and ensuring steady incomes for farmers

and other stakeholders linked to key agrifood systems. This is crucial as agriculture plays a significant role in Grenada's export economy, especially for crops like cocoa, nutmeg, and spices.

Livelihoods diversification. The project encourages livelihood diversification through activities such as agroforestry, beekeeping, aquaculture, and organic certification, providing farmers with alternative income sources. These activities are designed to be more sustainable and resilient against climate impacts. Support for agro-processing and value addition (e.g., processing cocoa, soursop) opens up new markets, enabling farmers to increase their earnings by accessing high-value markets. This, in turn, supports local enterprises and promotes economic development in rural areas.

Infrastructure and Resource Management. The project invests in building hurricane-resistant storage facilities, irrigation systems, and rainwater harvesting solutions. Such infrastructure helps secure water availability during dry spells and protects agricultural produce from storm damage, ensuring business continuity for farmers. The improved management of water resources benefits not only agriculture but also tourism and other sectors reliant on water availability. Efficient water use contributes to reduced costs and better planning, thus making Grenada's economy more resilient to climate variability.

Access to Finance and Risk Management. By facilitating access to finance, including grants and microloans, the project empowers smallholder farmers and agribusinesses to invest in sustainable practices and infrastructure. This financial inclusion helps build long-term economic stability. Risk insurance mechanisms are promoted to mitigate losses from extreme weather events, reducing financial vulnerability for farmers and encouraging investment in agriculture.

Environmental benefits

The ENRICH project is designed to deliver significant environmental benefits, closely aligned with IFAD's commitment to promoting environmental sustainability and climate resilience in smallholder agricultural systems. All project activities are developed in accordance with the Adaptation Fund's Environmental and Social Principles (ESPs) and IFAD's Social Environmental and Climate Assessment Procedures (SECAP), ensuring that climate adaptation and environmental benefits are central to the project's goals.

ENRICH focuses on addressing environmental vulnerabilities, particularly soil erosion, water scarcity, and biodiversity loss, all of which are exacerbated by the impacts of climate change in Grenada. Under Component 1, the project aims to strengthen the resilience of agricultural landscapes by rehabilitating and improving water management infrastructure, such as public ponds, irrigation systems, and hurricane-resistant facilities. The selection of vulnerable areas prone to drought and hurricane impacts is based on detailed environmental assessments, ensuring that targeted investments are climate-smart and contribute to ecosystem preservation. Participatory approaches involving local communities will help identify erosion-prone areas and high-risk zones for land degradation, raising awareness about the environmental consequences for land users and broader ecosystems.

Through Component 2, ENRICH encourages the restoration of soil fertility and biodiversity conservation, utilizing practices such as agroforestry, rainwater harvesting, and the introduction of climate-resilient crops. Investments in green infrastructure, including reforestation and erosion control measures, are integrated into the project to mitigate environmental degradation and enhance the resilience of natural ecosystems to extreme weather events. These efforts will contribute to increasing carbon sinks, conserving water resources, and maintaining biodiversity in fragile landscapes.

Furthermore, ENRICH is aligned with Grenada's national policies on climate change adaptation, such as the National Adaptation Plan (NAP) and the Nationally Determined Contribution (NDC). Under Component 3, the project strengthens institutional capacities to monitor, report, and verify the environmental benefits of climate action in agriculture. By improving risk management platforms and tools for climate information collection and interpretation, the project enhances Grenada's ability to adapt to climate change impacts and respond to environmental risks effectively.

To ensure compliance with environmental and social safeguards, ENRICH incorporates robust risk assessment and management strategies guided by the Environmental and Social Policy of the Adaptation Fund. An Environmental and Social Management System (ESMS) is in place to identify and mitigate potential adverse environmental and social impacts, and it will be regularly updated throughout the project's implementation. This framework ensures that environmental risks are systematically addressed, contributing to the long-term sustainability of the project and its alignment with Grenada's broader climate resilience goals.

C. Cost-effectiveness of the project

The cost-effectiveness analysis for the "Enhancing the resilience of vulnerable small Island Communities to climate change Hazards" (ENRICH) follows the Adaptation Fund guidelines. It includes a description of alternative options to the proposed measures that could have taken place to help adapt and build resilience in the same sector, geographic region, and/or community. The analysis is detailed by Project Output. The assessment demonstrates that the proposed interventions yield significant cost savings and resilience benefits compared to alternative lines of action.

Component 1: Drought- and Hurricane-Resilient Infrastructure for Vulnerable Rural Communities

Output 1.1.1: Capacities of communities enhanced to maintain water collection systems

- Project Measure and Cost: Train community members on water management practices to support sustainable use and maintenance of water collection systems. Improve the governance of water collection systems. Provide them with water meters and facilitate their participation in monitoring activities. Cost: US$267,222 during Project implementation period (5 years) and around 10% to 5% maintenance costs afterwards.
- Alternative Measure and Cost: Outsource water system maintenance to a private company. Estimated Cost: US$300,000 per year.
- Cost-Effectiveness Summary: Community-led training and improved governance offers sustainable, low-cost maintenance while fostering local resilience. Unlike external contracting, which incurs recurring costs, community training is a one-time investment that enables self-sufficiency and cost savings over the long term.

Output 1.1.2: Public Ponds restored and Water Infrastructure rehabilitated

- Project Measure and Cost: Restore public ponds and water storage infrastructure, and upgrade public / communal irrigation schemes, to improve water availability for approximately 1,200 farmers, especially during droughts. Cost: US$1,937,142.
- Alternative Measure and Cost: Install individual water tanks for each farmer to enhance water storage capacity. Estimated Cost: ranging from US$2,400,000 for 600 acres.

- Cost-Effectiveness Summary: Public ponds provide centralized, scalable water storage, reducing maintenance and distribution costs per beneficiary compared to individual tanks. By maximizing water access with lower upkeep, this centralized solution is more cost-effective and sustainable for long-term drought resilience.

Output 1.1.3: Farm connections are established using a landscape approach

- Project Measure and Cost: Connect farms to shared water resources to improve water distribution across agricultural landscapes. Cost: US$686,920.
- Alternative Measure and Cost: Install individual wells for each farm. Estimated Cost: $4,000 per well for 600 farms, totaling $2,400,000.
- Cost-Effectiveness Summary: Shared water connections use economies of scale, providing efficient water access with fewer environmental impacts compared to individual wells, which are costly and difficult to maintain. The shared infrastructure reduces both installation and maintenance expenses, optimizing water resource use across farms.

Output 1.1.4: Construction of Hurricane-Resistant Agricultural Infrastructure

- Project Measure and Cost: Construct hurricane-resistant storage facilities and livestock shelters to protect agricultural assets from storm damage and other risks. Facilitate community management of these infrastructures. Cost: $760,500 to cover contruction / rehabiltation costs. The economic life of these infrastructures ranges from 10 to 20 years.
- Alternative Measure and Cost: Individual infrastructures and insurance for these infrastructures. Estimated Cost: The Project cannot does not have sufficient resources to cover individual productive infrastructures for storage, processing and livestock sheltering per beneficiary. Moreover, an individual insurance policy per beneficiary for these type of investments could reach $500 per policy annually.
- Cost-Effectiveness Summary: Investing in resilient infrastructure provides reliable protection and minimizes post-disaster recovery needs. While insurance provides financial recovery, resilient infrastructure reduces direct damage and ongoing recovery costs, proving to be more cost-effective in the long run.

Component 2: Climate-Resilient Innovations and Investments for Vulnerable Rural Households

Output 2.1.1: Capacity of women and youth on entrepreneurial marketing and business development reinforced

- Project Measure and Cost: Provide vocational skills training (VST) for 300 youth and women and business development training (BDT) for additional 150 youth and women to diversify livelihoods and reduce economic vulnerability. Cost: $1,261,039.
- Alternative Measure and Cost: Distribute cash grants to youth and women without skills training. Estimated Cost: $1,000 per VST participant for 300 individuals, totaling $300,000; and, $6,000 per VST participant for 150 individuals, totaling $900,000.
- Cost-Effectiveness Summary: Based on SAEP experience, even when training is at the base of the capacity building process, only 80% of the BDT participants decide to develop a business plan and only 50% of those receives approval for financing based on the quality of the Business Plan. Skills training fosters lasting self-sufficiency, offering enduring benefits over temporary financial aid. Training reduces dependency and supports the creation of sustainable income sources.

Output 2.1.1: Promotion of Climate-Adaptive Agricultural Technologies

- Project Measure and Cost: Introduce climate-smart agriculture (CSA) technologies, and practices to 3,000 farmers by means of Farmer Field Schools (FFS). Cost: $854,487. Long-lasting positive effects in terms of increased efficiency and reduced damages and losses.
- Alternative Measure and Cost: Rely on post-disaster recovery aid. Estimated Cost: Assuming at least one extreme event (drought or excess rainfall) occurs during the Project implementation period, the cost could range from US$3,000,000 to USD$6,000,000 for targeted beneficiaries.
- Cost-Effectiveness Summary: CSA practices mitigate crop failure and support food security, reducing reliance on post-disaster aid. This proactive approach yields ongoing benefits, whereas reactive aid incurs recurring costs. CSA adoption thus offers sustainable, cost-effective resilience for long-term agricultural productivity. Moreover, the FFS approach is widely recognized as one of the most effective methods to facilitate CSA adoption.

Output 2.1.3: Financing for Resilience-Enhancing Investments

- Project Measure and Cost: Support at least 900 farmers with direct financing to adopt resilience-enhancing technologies. Cost: $1,851,200. This activity is based on the capacities built under Output 2.1.2.
- Alternative Measure and Cost: Facilitate access to credits. Estimated Cost: Access to credits is best suited for the less vulnerable groups. The Project would facilitate access to credits and other financing sources for some stakeholders, but this method is not the best suited to cover target groups – women, youth, small-scale farmers with medium to high levels of vulnerability. If more vulnerable groups take credits with insufficient financial literacy and entrepreneurial skills, there is high risk of default and relevant losses of assets, family income and welfare.
- Cost-Effectiveness Summary: the financing scheme proposed by the Project, supported by training and access to improved public goods and value chain services, would enable the beneficiaries to increase their net revenues and, over time diversify their livelihoods. Activities under Component three are intended to support the access to less vulnerable groups to financial services. Once graduated, with improved conditions, the beneficiaries targeted by this output would also be able to access credits.

Component 3: Climate Resilient Institutions and Risk Management

Output 3.1.1: Institutional capacity strengthened for the implementation of policy measures, climate action reporting, advocacy and knowledge management.

- Project Measure and Cost: Train government officials and establish policy frameworks for climate resilience. Cost: $484,603.
- Alternative Measure and Cost: Hire external consultants periodically. Estimated Cost: $100,000 annually.
- Cost-Effectiveness Summary: Developing internal capacity creates lasting expertise, eliminating the need for costly external consultants. This approach is more sustainable, reducing recurring expenses and ensuring effective governance, making it more cost-effective for the long term.

Output 3.1.2: Vulnerable agroforestry farmers equipped with parametric microinsurance for the agricultural sector

- Project Measure and Cost: Implement an innovative parametric microinsurance for the agroforestry systems of vulnerable smallholders. Cost: $416,000.
- Alternative Measure and Cost: Use generic, pre-existing coping mechanisms complemented by an increased coverage of the sovereign parametric insurance payouts for extreme events through the CCRIF that can be allocated to farmers. Estimated Cost: per acre, the recovery cost averages $2,650 to reestablish agroforestry systems (not taking into account the land clearing). As the payout from the sovereign parametric insurance only allocated $1,617, it is safe to assume that the % allocation would be similarly high in case of other extreme events (~6%), meaning that a sovereign payout would have to increase by ~$1.7 million to cover the same recovery cost that the microinsurance product would cover.
- Cost-Effectiveness Summary: In the absence of Adaptation Fund funding, the microinsurance scheme would not have the necessary resources to kick-start cost-effective operations. This funding is crucial to subsidize premiums and cover start-up costs, enabling the scheme to operate efficiently while maintaining affordability for smallholder farmers. By providing targeted financial protection, it reduces the long-term costs associated with recovery from extreme events, making it a cost-effective solution for building resilience.

The cost-effectiveness assessment demonstrates that the ENRICH approach is best suited to generate the proposed outputs, which lead to the intended outcomes and Project development objective. This structured approach provides significant long-term benefits compared to the alternative options, which often entail recurring expenses and reactive measures. In order to complement the cost-effectiveness analysis, an incremental cost-benefit analysis is included to assess the incremental net benefits derived from the Project compared to inaction (without Project most-likely scenario).

Incremental cost-benefit analysis (with Project vs with-out Project scenarios)

Introduction. This section presents the methodology, parameters, assumptions and main results applied for the Economic and Financial Analysis (EFA) of the ENRICH Project. The analysis corresponds to the design stage of the Project. The aim is to compare the costs and benefits of the Project in order to assess its viability, both from the point of view of the beneficiaries (financial analysis) and from that of the society as a whole (economic analysis). The economic and financial analysis of the Project follows the International Fund for Agricultural Development (IFAD) guidelines for the economic and financial analysis of investment operations, and is in line with IFAD's vision, strategies and tools for mainstreaming action on climate change.

***The project's Theory of Change (ToC) guides the EFA's approach*.** The ENRICH Project highlights climate risks, lack of access to key services, particularly for women, governance of strategic resources and institutional capacities as major challenges for economic development in the targeted areas. These challenges are exacerbated by climate change. Based on this situation, the Project aims to increase the resilience and sustainability of key agri-food systems.

The EFA focuses on the quantitative assessment of investment models, which represent the main project activities and expected results. The EFA follows an incremental assessment of the investment models, comparing the with-project (WP) situation with the without-project (WOP) situation to determine the additional benefits, while taking into account the additional costs. The analysis includes current and projected climate change impacts, based on information available from the Government of Grenada. All parameters and assumptions applied to the investment models correspond to the information provided by the IFAD mission for the design of the Project, as well as by the Government of Grenada.

Investment models applied to EFA. The analysis focuses on sets of investment models that correspond to the Project's ToC, particularly the investments planned in Component 2 (which are supported and reinforced with the activities implemented in Component 1 and Component 3). Table C.1 shows the models and parameters applied to EFA.

Table C.1. Investment models and parameters applied to EFA.

SC	Model	Products	Model category	Surface area (ha) or units per model	Beneficiary households per model	Number of models	Total number of beneficiary households	Total surface area (ha)	Number of households per hectare
SC2.1	Diversified yam production system	Yam, Banana, Pegeon pea, Sugar cane, Red Bean	Resilience-Enhancing Technologies - erosion and storm protection	0.25	1	259	259	65	4
SC 1.1	Rehabilitated irrigation system for banana production	Banana	Irrigation rehabilitation	0.20	1	1,200	1,200	243	5
SC2.1	Tomato production under drip irrigation	Tomato	Resilience-Enhancing Technologies - water management	0.20	1	62	62	13	5
SC2.1	Agroforestry diversified system	Pigeon Pea, Yam, Banana, Coffee, Wood Trees	Resilience-Enhancing Technologies - erosion and storm protection	0.20	1	324	324	65	5
SC2.1	Cocoa-based agroforestry	Fruits, forestry, Pigeon pea, Banana, Canavalia, yam, cocoa	Resilience-Enhancing Technologies - cocoa AF	0.20	1	900	900	182	5
SC2.1	Beekeeping	Inputs and equipment	Resilience-Enhancing Technologies	0.20	3	324	971	65	5
SC2.1	Improved management of water resources and grazing for goat farming	Improved goat rearing	Resilience-Enhancing Technologies - water management	1	1	13	13	13	1
SC2.1	Backyard gardens	Miscellaneous	Resilience-Enhancing Technologies - Backyard gardens	0.10	1	240	240	24	10
SC2.1	Artisanal manufacturer of agricultural tools	Agricultural tools	Vocational and skills training	NA	1	150	150	NA	NA
SC2.1	Cassava processing	Cassava	Business Plan	NA	5	30	150	NA	NA
SC2.1	Fruit processing	Processed fruit	Business Plan	NA	1	90	90	NA	NA
SC2.2	Cocoa processing	Sorted, certified and packaged cocoa beans	Business Plan - cocoa VC	NA	35	7	245	NA	NA
SC 2.2	Rehabilitated ingrastructure for grain storage	Various products	Infrastructure rehabilitation and climate proofing	NA	50	5	250	NA	NA

Financial analysis. The incremental cost-benefit analysis of the investment models (with project scenario compared with no-project scenario) shows positive financial results. Table A4.2 shows the incremental financial performance indicators (WP-WOP) of the investment models over the 20-year EFA analysis period. The financial indicators considered in the summarized list are: the Internal Revenue Rate (IRR), the Net Present Value (NPV, with a 12% financial discount rate) of the model, the NPV per beneficiary household of the model, and the Benefit/Cost ratio (B/C). The models represent investments with positive net revenues for all beneficiary households compared to the situation without the Project.

Table C.2 Incremental financial costs and benefits (WP-WOP) of investment models.

Model	Category	IRR	NPV in USD / beneficiary HH	B/C
Diversified yam production system	Resilience-Enhancing Technologies - erosion and storm protection	61%	401	1.07
Rehabilitated irrigation system for banana production	Irrigation rehabilitation	49%	1,919	1.20
Tomato production under drip irrigation	Resilience-Enhancing Technologies - water management	45%	1,679	1.82
Agroforestry diversified system	Resilience-Enhancing Technologies - erosion and storm protection	79%	2,854	1.93
Cocoa-based agroforestry	Resilience-Enhancing Technologies - cocoa AF	65%	2,027	1.58
Beekeeping	Resilience-Enhancing Technologies	17%	374	1.19
Sheep	Resilience-Enhancing Technologies - water management	65%	346	1.25
Backyard gardens	Resilience-Enhancing Technologies - Backyard gardens	55%	578	1.65
Artisanal manufacturer of agricultural tools	Vocational and skills training	56%	3,391	1.39
Cassava processing	Business Plan	56%	357	1.15
Fruit processing	Business Plan	51%	606	1.41
Cocoa processing	Business Plan - cocoa VC	70%	3,575	1.11
Rehabilitated ingrastructure for grain storage	Infrastructure rehabilitation and climate proofing	92%	1,073	1.09

Financial analysis. The incremental cost-benefit analysis of the investment models (with project scenario compared with no-project scenario) shows positive financial results. Table C.2 shows the

incremental financial performance indicators (WP-WOP) of the investment models over the 20-year EFA analysis period. The financial indicators considered in the summarized list are: the Internal Revenue Rate (IRR), the Net Present Value (NPV, with a 12% financial discount rate) of the model, the NPV per beneficiary household of the model, and the Benefit/Cost ratio (B/C). The models represent investments with positive net revenues for all beneficiary households compared to the situation without the Project.

Economic Analysis. The economic analysis is based on the flows of incremental economic benefits and costs for the total number of investment models implemented by the Project. It follows the parameters and assumptions calculated according to the information collected during Project design. The scope of each investment model and the phase of implementation are shown in Tables C.3. Table C.4 summarizes the main conversion factors from financial prices to economic prices. In line with the project's ToC, the quantitative assessment incorporates other relevant economic benefits, in particular the co-benefits of improved management of natural resources, mainly water, soil and vegetation cover. Other important co-benefits such as additional employment and the contribution to nutrition are not included in the quantitative analysis, due to the lack of detailed information by model but they correspond to an important part of the Project's approach. The time horizon of the economic analysis is 20 years, including 5 years of project implementation and 15 years of capitalization. The Social Discount Rate (SDR) was set at 6%, in line with IFAD guidelines for the economic and financial analysis of investment projects.

Table C.3 Scope and implementation rate by investment model applied to EFA.

Implementation rate per model	Unit	Total	Y1	Y2	Y3	Y4	Y5
Diversified yam production system	Hectare	65		22	22	22	
Rehabilitated irrigation system for banana production	Hectare	243		81	81	81	
Tomato production under drip irrigation	Hectare	13		4	4	4	
Agroforestry diversified system	Hectare	65		22	22	22	
Cocoa-based agroforestry	Hectare	182		61	61	61	
Beekeeping	Kit	65		22	22	22	
Improved management of water resources and grazing for goat farming	Kit	13		4	4	4	
Backyard gardens	HH	24		8	8	8	
Artisanal manufacturer of agricultural tools	BP	150		38	38	38	38
Cassava processing	BP	30		8	8	8	8
Fruit processing	BP	90		23	23	23	23
Cocoa processing	BP	7		2	2	2	2
Rehabilitated ingrastructure for grain storage	BP	5		1.25	1.25	1.25	1.25

Table C.4 Conversion factors (CF) applied to economic analysis.

Conversion factors (CF) applied to the economic analysis		
Official exchange rate	**OER**	2.70
Shadow exchange rate	**SER**	2.93
Shadow Exchange Rate Factor	**SERF**	0.92
Shadow wage rate factor, CF for labor	**SWRF**	0.88
Standard Conversion Factor - Tradable	**SCF**	1.08
Standard Conversion Factor - Non-Tradable		1.00
Seeds and local inputs		1.00
Imports: average agrochemicals		1.22
Imports: equipment and materials		0.90
Financial discount rate		12%
Economic discount rate		6%

Summary of marginal cost flows taken into account in the economic analysis of the project.

The economic analysis integrates the total project costs (economic costs) for all components, as well as for project management, monitoring and evaluation. The economic analysis of additional project costs considers inflation (local and international), exchange rate fluctuations and tax deductions. After project completion, recurring economic costs are included to reflect the additional institutional and maintenance costs of strategic services generated or enhanced by the project. These services are essential to the sustainability of investments.

Summary of incremental benefit streams taken into account in the economic analysis of the Project. In line with the Project's ToC, the analysis incorporates the incremental benefits of the investment models (C1 and C2), which comprise the more significant part of the quantitative analysis. The Project offers important socio-economic and environmental benefits. From a quantitative point of view, the EFA includes benefits and co-benefits linked to action against climate change. The project also generates other socio-economic benefits not fully integrated into the quantitative assessment. These rea mainly related to employment generation and food and nutrition security.

Economic viability. The analysis shows that the project is an economically viable investment for the society. The net present value of the incremental net benefit stream (economic NPV), discounted at 6% (economic discount rate), is US$ 38.09 million, with an economic internal rate of return (economic IRR) of 12%. Table C.5 summarizes the project's economic performance under the baseline scenario (without integrating climate change mitigation co-benefits).

Table C.5 Economic performance indicators for the base scenario

Social discount rate	6%
IRR	12%
NPV (USD)	4,970,232
NPV bebenfits (USD)	48,061,634
NPV costs (USD)	43,091,402
B/C	1.12
Switching values for benefits	-10%
Switching values for costs	12%

Sensitivity analysis*.* The economic performance of the Project has been tested using a sensitivity analysis based on the potential change in costs and benefits at which the Project is no longer viable. The maximum level of benefits reduction is 10% at the baseline scenario. The maximum level of cost increase is 12% at the base scenario. As mentioned above, the investment models applied to EFA already incorporate an adoption rate that considers the level of complexity of the technology, the context and the impact of potential risks, particularly in the face of climate change. The project is more sensitive to profit reductions. The risk analysis conducted by the Project and the inclusion of activities for improved risk management are key for the sustainability of investments.

D. Strategic alignment

The ENRICH project has been designed in partnership with the National Designated Authority, and in response to the stated preferences and priorities of the Government of Grenada. The ENRICH project builds on and contributes to several relevant strategies and action plans.

The **National Climate Change Policy** (2017-2021) clearly identifies agriculture, agribusiness and food security as one of its four priority thematic areas for building climate resilience. Policy objectives to which ENRICH contributes include improved access to water and rainwater harvesting, improved access to adaptation technologies, and capacity building, strengthened institutional arrangements for evidence-based decision making, and greater actionable climate change knowledge for the Grenada and its people.

Grenada's second **Nationally Determined Contribution (NDC)**, submitted in 2020, represents its continued commitment to the objectives of the Paris Agreement. Grenada's second NDC commits to a 40% reduction in greenhouse gas emissions by 2030, focusing on the energy, forestry, waste, and industrial processes sectors. ENRICH aligns with Grenada's NDC and will contribute to NDC targets by increasing carbon sequestration from diversified agroforestry systems, reducing soil degradation and erosion, by promoting and land-use changes, notably the conversion of cropland into agroforestry systems and forests.

The **National Climate Change Adaptation Plan** (NAP) for Grenada, Carriacou and Petite Martinique which was approved in 2017, contains several Programs of Action (PoA) including on Institutional arrangements, inter-sectoral coordination and participation (PoA1), Water availability (PoA3), food security (PoA4), resilient infrastructure and sustainable land management (PoA7), Adaptation financing (PoA11). The NAP clearly identifies agriculture, infrastructure, water as the main priority sectors that require immediate and urgent implementation of adaptive actions, reflected in the promotion of climate smart agriculture, water and rainwater harvesting and institutional strengthening and capacity building, innovative climate finance and risk management for agri-food sector.

The **National Sustainable Development Plan** (2020-2035) attaches great importance to climate resilience, agriculture, water, hazard risk reduction and environmental sustainability. The government of Grenada has recognized the importance of agriculture in the reduction of rural poverty, better household incomes and increased climate resilience. ENRICH is consistent several of its priorities including, under Outcome #4 "broad based inclusive and sustainable economic growth" focus on agriculture 'facilitating the widespread application of climate-smart agricultural practices' and 'modernizing irrigation systems and practices'; ' Develop a comprehensive agricultural insurance framework' and 'strengthen hazard mitigation for the sector'; 'expanding climate-smart lending by local financial institutions', as well as 'Use social media to promote agricultural education and agricultural business ideas and tips and ' Improve the image of agriculture by emphasising the use of technology in agriculture and ' Develop and implement a comprehensive training and capacity building programme in farming communities that focuses on functional literacy and numeracy, as well as financial management and basic business skills.

The **Revised Forest Policy** (2018) recognizes the important function of the country's forest resources in the context of climate change. This is reflected in its Objective 2 'Manage forest resources to build Grenada's climate change resilience implementing appropriate climate change adaptation and mitigation actions'. Through the proposed restoration of degraded catchments supplying water to prioritized infrastructure, ENRICH will address key priorities expressed in the Policy, namely to encourage tree planting to reduce soil erosion and improve soil fertility and restore vulnerable, threatened, or degraded ecosystems

The updated **National Water Policy** (2020) is particularly relevant for the ENRICH project, in particular its Outcome 2 'Increase water access, availability and quality' which identifies and proposes interventions such as "2.2 Promote the sustainable use of alternative water sources, such as RWH and water recycling and reuse, to ensure water availability under a changing climate and "Secure water for ecosystem services, recreation and aesthetics in order to ensure that vital ecosystems are maintained, restored and enhanced. Grenada is expected to undergo a warming and drying trend and, in addition, to experience more frequent heat waves and droughts, as well as heavy precipitation. As mean temperatures are expected to increase in the Caribbean according to the most recent AR6 report (IPCC, 2021), Grenada will have to prepare its agriculture sectors and livelihoods for drier conditions. Although local adaptation measures like rainwater harvesting are practiced, they are under-implemented in critical tourism and agricultural areas, and access to improved drought-resistant crop and livestock varieties remains limited. While a draft Drought Management Plan exists, it has yet to be adopted, leading to a growing reliance on desalination for potable water.

Grenada's **National Agriculture Plan** 2015-2030 presents the vision of a globally competitive agricultural sector that contributes to economic growth, food and nutrition security, poverty alleviation and environmental conservation. The project is fully aligned to the five strategic focus areas identified in the Plan: (i) increasing agricultural production and exports, strengthening the linkage between agriculture and tourism; (ii) enhancing food security by reducing the food import bill; (iii) strengthening resilience and improving preparedness to address CC impacts and extreme events; (iv) investment in infrastructure and institutional and human resource capacity development; and (v) fostering partnerships with regional counterparts and development partners. Through its climate smart agriculture support, ENRICH will directly support the implementation of Recommended Strategies 2 and 5 (e.g., rainwater harvesting, more efficient irrigation systems, terracing, mulching, drainage). It will also advance the realization of Recommended Strategy 3 ('improve access to climate risk insurance for farmers)

The **National Gender Equality Policy and Action Plan** (GEPAP, 2014-2024) recognizes men's and women's complementary roles, and commits to increase their equitable access to productive resources and entrepreneurial opportunities in the agriculture and tourism sectors, so to facilitate the nation's goals of agricultural diversification, food security, economic growth, poverty reduction, and sustainable development. Similarly, the policy recognizes and integrates the complementary roles of men and women into policies and programmes on disaster management, climate change, and natural resource development. These objectives are fully aligned and integrated in the project, which will also adopt gender-responsive approaches on the basis of gender analysis to ensure that activities are tailored on women's needs, and will report sex-disaggregated data. ENRICH proposed interventions are consistent with the policy commitments to 'ensure the equitable participation of men and women in communities in developing strategies and mechanisms for coping with and adapting to the adverse impacts of climate change'

This project is aligned with the **Adaptation Fund's Strategic Results Framework** and directly contributes to the Fund's overall objective and outcomes. This is detailed in part III, section F.

E. Relevant national standards and Environment and Social Policy

The project will comply with all relevant national technical standards as outlined in its laws and regulations, particularly concerning climate, environmental and social aspects. These laws and regulations are presented in detail in the ESMP annex (Annex 3). The project will be executed by the Rural Development Unit (RDU), which depend on the Secretariat of Agriculture, Lands and Forests within MED, and will comply with the requirements of the Physical Planning and Development Control Authority (PPDA), which is responsible for the management and review of Environmental Impact Assessments (EIAs) and other development-related approvals.

The project complies with the **Physical Planning and Development Control Act** No. 25 of 2002, which requires EIAs for certain categories of developments, such as large-scale infrastructure or activities that could significantly impact the environment. While the project does not include interventions requiring an EIA under this law, any construction or site-specific interventions will still be screened for potential impacts. Where applicable, environmental permits and approvals from the Physical Planning Unit (PPU) will be sought to ensure compliance.

Additionally, the project aligns with the **Waste Management Act No. 16 of 2001** and the **Solid Waste Management Act No. 11 of 1995** to ensure proper waste management during project activities, such as construction or rehabilitation works. The project will implement best environmental practices for waste disposal and pollution control, in line with these standards, to minimize negative impacts on the environment.

The project will align with the **Forest, Soil and Water Conservation Act** and the **National Parks and Protected Areas Act** to ensure that activities do not result in deforestation, soil degradation, or encroachment on protected areas. Although the project excludes protected areas from its target zones, monitoring and compliance checks will be conducted to ensure that there is no unintended impact on these areas.

The project's activities, including construction and rehabilitation, will also comply with the **Litter Abatement Act** and the **Beach Protection Amendment Act** to prevent pollution and resource depletion. The project will integrate sustainable land-use practices, soil conservation techniques, and water quality monitoring measures to ensure that the activities contribute positively to the management of natural resources.

Although the project does not support the use of agrochemicals, it will still adhere to the **Pesticides Control Act No. 28 of 1973**, ensuring that any agricultural inputs used by beneficiaries or partner organizations do not contribute to pollution or adverse environmental impacts. Training and awareness programs will be included to educate farmers and stakeholders on sustainable agricultural practices and alternatives to chemical use.

The project will comply with the **National Heritage Protection Act and the Public Health Act**, ensuring that any infrastructure or agricultural activities do not damage cultural sites or negatively affect public health. The project will apply the national "chance find" procedure to manage unexpected discoveries of cultural or archaeological significance during construction activities.

The project will follow the provisions of the **Water Quality Act No. 1 of 2005** and the **National Water and Sewerage Authority Act**, ensuring that water use is regulated, and no contamination occurs because of project activities. This is particularly relevant for interventions in water infrastructure or those impacting water resources. Similarly, any coastal or marine activities will respect the guidelines set by the **Fisheries Act of 1986**, ensuring no harm to marine biodiversity.

The project also complies with the Environmental and Social Policy (ESP) of the Adaptation Fund and IFAD's Social, Environmental, and Climate Assessment Procedures (SECAP) by integrating comprehensive risk management measures and ensuring adherence to environmental and social safeguards throughout the project cycle. The project was designed to minimize negative impacts and enhance positive outcomes through proactive planning and implementation strategies. This includes conducting thorough environmental and social assessments, screening potential risks, and developing detailed management plans, such as the Environmental and Social Management Plan (ESMP), to address any identified risks. In line with the Adaptation Fund's ESP, the project activities were evaluated against the fifteen Environmental and Social Principles, ensuring that it does not trigger any significant adverse impacts. The project was assessed as having low to moderate risks, and corresponding mitigation measures have been integrated into the project design.

F. Duplication.

The table below addresses synergies with other programmes and projects already being implemented in Grenada or those in the pipeline.

Table 10: Duplication risk analysis

Other projects & partners	Summary and geographic area	Complementarity potential
Climate Smart Agriculture and Rural Enterprise Programme (SAEP) - link International Fund for Agriculture Development and Caribbean Development Bank (CDB) Total cost: USD 14,000,000 Duration: June 2018 – May 2025)	Promote rural business development and climate-smart agricultural practices in rural areas of Grenada Deliver vocational and employment skills training with a focus on youth; technical support services for business development; a matching grants scheme to promote start-up businesses; training of farmers, extensionists and vulnerable people in poor rural communities on climate change and climate-smart agriculture (CSA); extension services to farmers on CSA practices and on improving marketing links; a matching grants scheme for individual farmers and/or groups to promote the adoption of CSA practices and technologies; and the rehabilitation of rural roads and drainage systems.	Synergies: The ENRICH project will disseminate the practices and technologies that have been proven successfully adopted and continue implementing successful approaches and interventions Avoiding duplication: ENRICH will build on all of the lessons learnt from SAEP, hence avoiding duplication. Lessons learned: Lessons learnt from the SAEP programme will be used to improve the outcomes of the AF project to focus on climate resilience, building adaptive capacity
Project for a Climate Resilient Water Sector in Grenada (G-CREWS) –GCF/GIZ Green Climate Fund GCF link Government link Total cost: EUR 42,057,000 Duration: November 2019 – November 2025	Increase the capacity of NAWASA's water supply (raw and freshwater storage, groundwater resources) to provide the required potable water resources despite climate change. Increased storage and more in-built flexibility through the interconnection of pipelines and sustainable groundwater systems G-CREWS addresses inefficient water management in Grenada's farming sector through the establishment of a "Challenge Fund for Agriculture", which provides grants for water efficiency audits, efficient irrigation systems, rainwater harvesting systems, shade houses and hydroponics to around 350 farmers	Synergies: ENRICH will complement G-CREWS efforts in water management and storage for production by improving domestic water access by upgrading and improving untreated water infrastructure to address increased variability in rainfall patterns and its significant impact on agriculture and livestock production. Avoiding duplication: This project mainly focuses on water for domestic use, as well as municipal, industry and tourism use. Lessons learned: from the challenge fund for agriculture, issues related to procurement, identify common items, and procure in bulk
CSIDS-SOILCARE Phase 1: Caribbean Small Island Developing States (SIDS) Multi-Country Soil Management Initiative for Integrated Landscape Restoration and Climate-Resilient Food Systems Global Environment Facility GEF link FAO link Total budget: USD 8,155,205 (regional) Duration: Nov. 2021 – Nov. 2025 Implemented by the Food and Agriculture Organization of the United Nations (FAO)	Partnership Initiative for Sustainable Land Management aims to equip Caribbean SIDS with the necessary tools for adopting policies, measures, best practices, and adequate legal and institutional frameworks to achieve land degradation neutrality and climate resilience Activities include Removal of invasive non-economic plant species and replacement with indigenous viable agro-forestry species; rehabilitation of degraded areas; rainwater harvesting and water distribution systems; composting; plugging of gullies with vegetative and non-vegetative material; planting of vegetative soil conservation materials (e.g., crotens and vetiver grass); contour draining; wind breaks with economic trees; soil loss measuring equipment; fodder banks producing feed in a controlled environment. In Grenada, 'CSIDS-SOILCARE Phase 1' will rehabilitate degraded land and soil in Les Advocats (Grand Etang Forest Reserve), Chambord (Rose Hill), Ludbur (Mirabeau) and at the Limlair Livestock Facility in Carriacou.	Synergies: ENRICH and the RDU will seek to integrate best practices from the regional guidelines to support farmers in transitioning to climate-smart agriculture Avoiding duplication: The AF project proposal will not overlap with the geographic prioritization of CSIDS SOILCARE Lessons learned: ENRICH will apply the learnings from the rainwater harvesting and water distribution systems as well as the rehabilitation measures of abandoned/ underutilized croplands in the four prioritized areas

Title: Enhancing Land Management and Strengthening Ecosystem Resilience for Integrated Landscape Restoration and Climate-Resilient Food Systems in Carriacou, Grenada. Donor: Global Environment Facility GEF link Project grant: USD 863,242 Duration: grant approved in May 2023 Implementing entity: United Nations Environment Programme (UNEP) Executing entity: Partnership Initiative for Sustainable Land Management	The objective of this project is to effectively address land degradation in Carriacou, through demonstration and application of ecosystem-based landscape restoration, sustainable land management and good agricultural practices, using participatory community-based approaches that expand diversification and sustainability of livelihood options. Activities may include Solar powered plant nursery (focused on drought-resistant and fast-growing plants indigenous to Carriacou, high value niche crops, fruit trees); contour drainage with check dams, live vegetation fences and bio-engineered solutions to arrest soil movement; rehabilitation of concrete water storage tanks; underground flexible tank technology; excavation of diversion drains; mini-dams; runoff diversion structures on roads adjacent to restoration areas; bioengineering installations for stabilization (e.g., geotex fabric and deep-rooted grasses and shrubs)	Synergies: ENRICH will coordinate its interventions in Carriacou closely with this project and the stakeholders involved. This pertains in particular to the restoration areas and techniques. Avoiding duplication: is limited due to the geographic focus of this project. Lessons learned: ENRICH will apply the learnings from the sustainable land management (such as contour drainage and live vegetations fences) and good agriculture practices, including underground flexible tank
Pipeline: ASPIRE - Advancing Transformative Agricultural Systems in Grenada through the Promotion of Integrated and Resilient Ecosystem approaches throughout the cocoa value chain. Global Environment Facility – Food Systems Integrated Pgm GEF Link USD 3,519,723 Implementation (if confirmed) 2025-2030 Implementing Entity: IFAD Executing entity: MEPD	ASPIRE's objective is to drive transformative change in agricultural systems by creating a diversified, competitive and climate-resilient cocoa value chain which has significant potential to contribute to sustainable and inclusive growth and poverty reduction in the country. This includes fostering enabling conditions for food system transformation through strengthened 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	Synergies: This project will be complementary to the ENRICH project and IFAD is the Implementing Entity of both, and the same government unit (RDU) will be implementing this project as well. Duplication: there will be zero overlap, or duplication, given that the activities have been designed as complementary at the outset Lessons learnt: not applicable
Pipeline: AG ADAPT - Scaling Climate Resilience in Food and Nutritional Security in Grenada Green Climate Fund (GCF) USD 24,906,268 of which USD 20,806,268 as grant from GCF No link available Implementation (if confirmed) 2026-2031 Accredited Entity FAO Executing Entity FAO	AG-ADAPT will enhance access to locally appropriate agro-climatic data and information; mainstream climate resilience in agri-food systems and related policies, plans, programs, regulations and planning processes; rehabilitate and restore terrestrial, coastal and marine ecosystems in target areas (120 ha of dry littoral forest, in Levera, St Patrick, 962 ha of abandoned /underutilized cropland in: a) 383 ha Chambord, St Patrick, b) 383 ha in Argyle, Carriacou and c) 196 ha in Mt Agnes, St David). The project will also finance Value chain pilot interventions in poultry, soursop, roots and tubers. Policy and knowledge interventions include knowledge management web portal and communication system; the localized standard precipitation index; the web-enabled climate risk atlas for food security at the parish and community level The project will directly benefit a total of 60,734 persons, which will include small farmers, fishers, agro-processors, fish vendors as well as community members involved in ecosystem rehabilitation and restoration, financial institutions, cooperatives and government personnel.	Synergies: During funding proposal preparation, IFAD will coordinate with FAO to identify areas of complementarity and overlap and define effective approaches to avoid duplication and maximize benefits to Grenadian farmers. Duplication: IFAD held several coordination meetings with FAO, and brought this issue up with the Government of Grenada during a joint mission (June 2024). One solution that was approved by all parties was to entrust fishing interventions to the AG ADAPT (GCF) design, also given FAO expertise in fisheries. In any event, the approval and implementation of AG ADAPT is not foreseen to start before 2027 as it is still at Concept Note stage. Lessons learnt: in pipeline stage

G. Learning and knowledge management

Learning and knowledge management are fundamental elements of the program. By integrating lessons learned from the SAEP project and other relevant local initiatives, the ENRICH project aims to build a robust framework that promotes sustainable agricultural practices, while empowering in particular vulnerable smallholders to generate and apply climate smart agriculture knowledge.

Farmer Field Schools. ENRICH will strengthen extension services support to farmers by applying the Farmer Field School (FFS) approach. This method encourages participatory learning, where farmers work in clusters and engage in hands-on training that focuses on problem-solving through experiential learning in real farm environments. The approach is a proven model for knowledge transfer and has been adapted from the success of group extension services employed in Grenada's SAEP Programme. The focus will be on promoting practical application of CSA technologies and ensuring that farmers acquire the knowledge and skills to address climate-related challenges effectively.

Knowledge platforms and exchange for climate resilience. Innovative methods will be applied to enhance water management, ensuring sustainable access to this critical resource. The project will generate knowledge by developing and disseminating water collection and catchment solutions, dryland farming techniques, reducing water usage through methods like drip irrigation and mulching, while promoting drought-resistant crops and encouraging crop diversification. ENRICH will promote climate-adaptive technologies, innovation and best practices through training for farmers, particularly in the cocoa sector. Knowledge and technology transfer for value-added processing will include comprehensive training programmes to farmers on best practices for fermenting and drying cocoa beans, and producing derived products from the agroforestry system. Formal and informal platforms and partnerships will be created to connect cocoa value chain actors across all levels.

Mapping and assessment of ecosystem services. Key ecosystem services essential for climate adaptation and sustainability in Grenada's cocoa-producing areas will be identified and assessed. The assessment will focus on water regulation, soil fertility, and biodiversity support. The work will be structured through a series of mapping, assessments, and stakeholder engagements designed to integrate scientific data and traditional knowledge for ecosystem-based solutions.

Training for government officials and field staff. To ensure the effective implementation of knowledge management strategies, targeted training sessions for government officials and field staff will focus on enhancing their understanding of sustainable agricultural practices, data collection and analysis to evaluate the impact of innovation and CSA practices on livelihoods and climate resilience, the use of EWS tools, and on the integration of local knowledge into adaptation strategies. Additionally, fostering skills in communication and stakeholder engagement will empower officials to effectively share knowledge with farmers and fishers, ultimately leading to more resilient communities. Field visits to successful application of CSA practices and demonstration plots will further reinforce learning and promote the exchange of experiences among participants.

Collaboration with research institutions. To ensure high-quality training of farmers and extension officers ENRICH will tap into and leverage the expertise of key partners in the areas of climate change adaptation and resilience: The West Indies (UWI) will provide core expertise in Cocoa production and processing techniques tailored to the Caribbean context, CSA practices relevant to Grenada’s agricultural systems and sustainability of value chains. The Caribbean Agricultural Research and Development Institute (CARDI) will provide scientific research and practical advice, enhancing the training content with region-specific insights on climate resilience.

Applying knowledge dissemination tools. Tools such as best practices manuals and guides will be created for tree crop production, reforestation, restoration practices, fish farming, and climate-smart agriculture (CSA) practices. The project will develop case studies to share lessons learned, encouraging replication and scaling of successful climate-smart crop production methods.

Communication campaigns and social media. The project will also carry out a communication campaign and provide information services through simple but effective tools (e.g. website, Facebook page, WhatsApp groups, provision of flyers and other materials, use of existing communication channels of networks, cooperatives, NGOs or programmes.

H. Consultative process

In response to the request from the Government of Grenada through the Ministry of Finance, IFAD prepared a Concept Note which was endorsed by the Adaptation Fund Secretariat in June 2023.

The design of the ENRICH project was done in a hybrid manner. In June 2024, August and September 2024, virtual meetings were held with national and regional counterparts. From 24 June 2022 to 5 July 2024, an in-country mission took place in Grenada. The mission met with the Minister for Economic Development, Planning, Tourism, Creative Economy, Culture, Agriculture and Lands, Forestry, Marine Resources and Cooperatives (MED) and Adaptation Fund National Designated Authority (NDA), Hon. Andrew Lennox; the Minister for Climate Resilience, the Environment and Renewable Energy (MCRE), Hon. Kerryne James; the Permanent Secretary (PS) for Agriculture, Mr Bhagwan; the PS for Economic Development, Ms Merina Jessamy; the Director for Economic and Technical Cooperation, Mr Mervyn Haynes; the PS for the Ministry of Mobilisation, Implementation and Transformation (MIT), and GEF Operational Focal Point (OFP), Ms Nicole Clark; the Manager of the Grenada Cooperative Nutmeg Association (GCNA), Sen. Roderick St Clair; the Manager of the Grenada Cocoa Association (GCA), Mr Andrew Hastick; the Senior Vice President of Grenada Investment Development Corporation (GIDC) and Vice President of the Business Development Centre (BDC), Ms Khesha Mitchell; the Chief Extension Officer, Secretariat of Agriculture and Lands, Forestry within MED, Ms. Lauren St. Louis; and, the Rural Development Unit (RDU), led by Dr S. Fletcher. The mission also met with cooperation agencies, leading Projects and initiatives closely linked to the ENRICH Project. The mission met with the Deputy Project Head, Ms. Marion Geiss, and Technical Advisor of the Project Climate-Resilient Water Sector in Grenada (G-CREWS), Ms. Astrid Regler, from the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). The mission also met with the Technical Specialist at the Inter-American Institute for Cooperation on Agriculture, Mr. Gregory Delsol. The mission wishes to thank all stakeholders for the useful exchange in various meetings. The consultative process (including lists of stakeholders consulted) is detailed in Annex 4.

The mission also conducted extensive field visits to current SAEP beneficiaries as well as rural stakeholders, including cocoa producers, an agriculture research station, and Non-governmental Organization. However the passage of Hurricane Beryl, an early and rapidly forming category 4 hurricane that made landfall over Carriacou and Petite Martinique on July 1st 2024, caused extensive damage along its path and cut short the mission. Before it left ahead of the scheduled date, the mission was able to accompany the Rural Development Unit's (RDU) first assessment of damages. The team visited all parishes, where extensive damage to tree crops was noted, particularly in the northern parishes of Saint Mark and Saint Patrick. The ENRICH project will strive to integrate lessons learnt from this event, as well as proposed priority recovery and ´building back better´ measures in its design.

A second mission took place in late October 2024, with the objective to validate an initial proposal, and to engage in additional stakeholders' consultation, as well as conducting additional field visits, and conducting in-depth technical discussions with key counterparts.

Findings from preliminary consultations held during the Concept Note preparation stage with key stakeholders were confirmed thereby highlighted the following challenges of vulnerable communities particularly for women and youth to strengthen their resilience to climate shocks and stressors: The main issues emerging from these consultations related to droughts, need for rainwater harvesting and/or irrigation, either communal or individual, limited economic opportunities, frequent abnormal climatic events, such as hurricanes, need for protection structure, provide equipment, and financing to farmers, provide training on conservation agriculture (mulching, composting), and soil fertility, as well as in tree crop husbandry and produce processing and value addition. Women mentioned having access to machinery to assist with labour intensive tasks, as well as access to best practice for keeping small animals, as well as backyard gardens Those findings were confirmed in a second mission to Grenada in November 2024.

I. Justification for funding requested

The project responds to a request of the government. Annex 5 presents the official letter from to IFAD requesting further financial resources to support farming and fishing communities in Grenada through the adoption and innovation of new climate smart technologies and practices through climate smart agriculture (CSA) practices, through upscaling of IFAD financed SAEP programme.

Following two extreme weather events in 2024—a severe drought followed by the passage of Hurricane Beryl, which caused extensive damage throughout Grenada—the government requested a slight change to the initial proposal of the concept note. While the government confirmed that the top priority would include strengthening (i) climate resilience and adaptive capacity via climate-smart agricultural practices, addressing water management challenges, and fostering innovation in climate-smart technologies, and (ii) the sustainability of key value chains, including cocoa, it requested that the focus of the project be on strengthening climate resilience in land-related activities in the Agriculture, Forestry, and Other Land Use (AFOLU) sector, given its vulnerability to increasingly intense and extreme weather phenomena.

The project activities are closely aligned with Grenada's national policies, notably with the overarching themes and goals of the National Adaptation Plan (NAP). The combined cost for those priority actions of the first NAP (2017-2021) amounts to USD 244.27 million, and the funding proposal will directly contribute to the attainment of the following themes and goals.

(i) water availability: have a climate-responsive water governance structure established (estimated cost: USD 50.2 million);
(ii) food security: the foundation is laid for food availability, stability, access, and safety amidst increasing climate change risks (estimated cost: USD 46 million).
(iii) ecosystem resilience: improve the management and conservation of protected areas and other key ecosystems areas. (estimated cost: USD 26.6 million).
(iv) resilient infrastructure and sustainable land management: have selected infrastructure adequately planned, designed, properly located and maintained to be resilient to climate change, including increasingly extreme weather events, and to have land managed sustainably (estimated cost: USD 112.9 million).
(v) climate and sea-level rise data and projects: strengthen institutional arrangements for the collection, analysis and provision of climate-related data for use in decision-making (estimated cost: USD 7 million).
(vi) adaptation financing: ensure that external climate finance supports Grenada's adaptation process (estimated cost: USD 1.4 million).
(vii) Monitoring and evaluation: implement the proposed NAP measures (estimated cost: USD 170,000).

To optimize the use of the Adaptation Fund resources, the project will leverage the organizational

structures and capacities established by the IFAD financed SAEP project (which will reach completion in September 2025). While complementary financing will be sought from the Global Environment Facility for the strengthening of the sustainability of the cocoa value chain, the project will not rely on any co-financing or external support to generate climate change adaptation benefits. The table below outlines the baseline and the alternative adaptation scenarios that the Adaptation Fund project will achieve.

Table 11: Baseline scenario and alternative adaptation scenario

Baseline scenario	**Alternative adaptation benefits of Adaptation Fund Project**
High exposure and vulnerability, and very limited adaptive capacity to increased intensity of tropical storms. 2024 marks a particularly harsh year for Grenada, as a Category-5 hurricane hit the island state on July 2, causing severe damage across all sectors on both the main island and Carriacou, with Carriacou being hit particularly hard, with approximately 90% of houses destroyed. The World Bank estimated the direct economic damage in Grenada from Hurricane Beryl to be USD 218 million, equivalent to approximately 16.5 percent of Grenada's 2023 gross domestic product. Agricultural impacts account for 20 percent of the total damages estimated. This included damage to crops (especially nutmeg) on Carriacou, as well as significant damage on the main island, and damage to livestock, fisheries (excluding vessels), and small-scale infrastructure such as irrigation. Climatic projections from the IPCC show that the intensity of tropical storms is likely to increase with climate change. By linking the increased intensity of future storms with the cost estimate for Hurricane Beryl, a conservative estimate for the full cost of adaptation aimed at mitigating the adverse impacts of climate change related to tropical storms can be derived. In a simplified model, the additional damage caused by tropical storms under a 2°C warming scenario can be assumed to increase by 5%, reflecting the projected rise in storm intensity. For a tropical storm like Hurricane Beryl, this would correspond to USD 10.9 million (5% of USD 218 million) in a business-as-usual scenario. This estimate is conservative for two reasons: (i) the cost of hurricane and storm damage tends to grow exponentially with increasing intensity, and (ii) the economic damage from Hurricane Beryl was considerably lower compared to that from Hurricane Ivan in 2004, where more populated areas were impacted by stronger winds.	**Reduced exposure and vulnerability, and strengthened adaptive capacity of rural communities to increasingly intense tropical storms.** With climate change likely leading to more intense tropical storms, the Adaptation Fund project will introduce key innovations and solutions to significantly reduce the exposure and vulnerability of rural Grenadian communities, and reinforce their adaptive capacity to tropical storms by: (i) reducing the cost of future storm damages through activities such as constructing and upgrading hurricane-resistant storage facilities and pens (Activity 1.1.4.1) and establishing a small grant scheme for resilience-enhancing technologies, particularly for erosion and storm protection, including through the planting of forest species to create natural barriers that mitigate soil erosion and reduce storm impacts (Activity 2.1.3.2); (ii) enhancing rural communities' ability to cope with extreme weather events through a parametric microinsurance pilot for vulnerable agroforestry farmers for events such as Hurricane Beryl (Activity 3.2.1.1) Specifically, among others, the project will: - construct or upgrade 10 storage warehouses, 10 agricultural equipment storage units, 10 hurricane-resilient processing facilities and 20 hurricane-resistant livestock pens for a total of 30,000 square meters - provide flexible financing in the form of small grants reaching from a maximum of 1,500 USD for backyard gardens for individual farmers to 30,000 USD for other CSA investments for group proposals
High exposure and vulnerability, and very limited adaptive capacity to increased	**Reduced exposure and vulnerability, and strengthened adaptive capacity of rural**

frequency and severity of droughts. With 90% of the island's water supply relying on rainwater collection, the combined effects of reduced precipitation and rising average temperatures are expected to significantly impact water availability in Grenada. In the business-as-usual scenario, the water scarcity situation is likely to worsen, and droughts are likely to intensify in frequency and severity. In this context, an ongoing GCF project (G-CREWS) aims to improve water efficiency by stabilizing demand for potable water from households and businesses at a climate-resilient level, while also ensuring resilient water production and supply systems that consistently provide enough potable water to meet Grenada's demand. However, the project is primarily focused on potable water, with less emphasis on the broader water sector, including agricultural water use. The unprecedented low water levels during 2024, led NAWASA to declare a drought emergency and an order for significant water rationing, encompassing restrictions to irrigation and watering of gardens, lawns, and grounds. The lack of precipitation and restrictions to irrigation led to significant crop failure, and partially food shortages. The economic repercussions of water scarcity is evident in Grenada's falling agricultural production, particularly in one of its major export crops: fine-flavored cocoa. The decline of in production of cocoa, nutmeg and other crops intensifies Grenada's reliance on food imports, impacting trade balance and foreign exchange reserves. The trend jeopardises food security and accessibility for low-income citizens, as imported and local food prices escalate due to increased transport costs and declining yields.	**communities to increasingly frequent and intense droughts.** The Adaptation Fund project will equip vulnerable rural communities with the knowledge and inputs to better access and sustainably use water for agricultural use. This will significantly increase Grenadian water security, by enhancing the agricultural productivity and supporting ecosystem services, ensuring food security and supporting livelihoods. A reduction of the overall exposure and vulnerability of rural communities to droughts, as well as a strengthening of their long-term adaptive capacity will be achieved by: (i) restoring public ponds and rehabilitate water infrastructure to enhance water catchment and storage capacity, including through the restoration and reinforcement of public ponds, reparation and upgrade of irrigation system and ecosystem-based Adaptation approaches (Activity 1.1.2.1); (ii) establishing efficient Water Distribution Networks, linking farmers with the restored water infrastructure (Activity 1.1.3.1); (iii) building capacity for water management and quality testing at community-level (activity 1.1.1.1); (iv) facilitating the dissemination of climate-smart agricultural practices (Activity 1.1.1.1); (v) training of 300 unemployed and underemployed youth aged 16 to 35 years in vocational skills (Activity 2.1.1.2);(vi) facilitating the dissemination of climate-smart agricultural practices through extensive training in Farmers Field Schools **(Activity 2.1.2.1)** (vi) financing of resilience-enhancing technologies, notably CSA Practices that increase access to water and improve water use (Activity 2.1.3.2) Specifically, among others, the project will: - support an estimated 150,000 square meters of pond surface across the island to support 20% of the 3,000 active farmers in Grenada - Construct 600 check dams - Connect 1,200 farmers to water harvesting infrastructure - Rehabilitate 25 water system facilities - Organize workshops for 625 farmers on various aspects related to water harvesting techniques and irrigation, including the connection of water systems, ensuring efficiency, etc.
High exposure and vulnerability, as well as limited adaptive capacity to respond to increasingly frequent and intense floods	**Reduced exposure and vulnerability of rural communities to increasingly frequent and intense floods.**

Urban expansion in Grenada has increased flood risk due to deforestation, loss of vegetative cover, and the proliferation of impermeable surfaces, leading to higher surface runoff. This risk became especially pronounced after Hurricane Ivan, which destroyed much of the watershed vegetation, raising concerns about downstream flooding, soil erosion, and impacts on water reservoirs. In addition, inadequate drainage systems are ill-equipped to handle the rising frequency of extreme precipitation events causing flooding anticipated with climate change. Poor communities, often building on riverbeds, floodplains, and steep terrains due to limited land access, are particularly vulnerable, increasing their exposure to landslides, rockfalls, and vector-borne diseases like Dengue, Zika, and Leptospirosis during prolonged floods	The Adaptation Fund project will reduce the risk of flash floods for rural communities with further adaptation co-benefits downstream by (i) reducing soil runoff and storm damage in heavy rain periods through live barriers acting as natural barriers to mitigate soil erosion, (ii) intercrop fruit trees, nitrogen-fixing legumes and other crops to improve soil carbon retention, (iii) the construction of small on-farm drainage systems, (iv) establishing compost and vermicompost production facilities to enhance soil fertility, and (v) promoting the productive use of forests via beekeeping (all Activity 2.1.3.2). Specifically, among others, the project will: - Put 1,000 ha under improved management through CSA practices and EbA approachesTrain 3,000 farmers on CSA technologies and practices
High exposure and vulnerability, as well as limited adaptive capacity to respond to increased variability of precipitation patterns alternating the cropping cycle The main harvest season in Grenada traditionally occurs from October to February, with a secondary harvest from June to August. There has been a change in rainfall observed throughout the year, particularly during the wet season of Grenada (Figure 6a). The result has been a shift in rainfall climatology across decades. The variability of intra-annual precipitation variability is expected to further increase with climate change, which represents a significant challenge for rural communities, as they are dependent on rain for their agriculture produce. Alterations to the cropping calendar can lead to a decline in agricultural output (notably for the main commodities like cocoa), or crop failure, affecting the livelihoods of farmers and the food security of rural communities.	**Reduced exposure and vulnerability, and strengthened adaptive capacity of rural communities to increasingly frequent and intense droughts.** The project will help farmers adapt to varying precipitation patterns and shifting cropping cycles by (i) providing farmers with access to water infrastructure through farm connections to larger off-farm water ponds, as well as micro-irrigation techniques on-farm, such as drip and sprinkler systems, and (ii) providing extensive training programmes on water use efficiency techniques , which will ensure that farmers manage water resources sustainably , adapting to changing climate conditions by using the water at the right time and just in enough quantities to meet crop needs without overuse (Activities 1.1.1.1, 1.1.2.1, 1.1.3.1., 1.1.3.2.). In addition, the introduction of resilience-enhancing activities, such as composting and intercropping practices help crops withstand periodic variations of rainfall through increased soil carbon and moisture contents. The project will among others: - Promote 5 climate smart technologies and practices to communities - Ensure that 2,500 people have benefitted from resilience-enhancing practices, technologies and mechanisms - Train 450 women and youth on entrepreneurship, business development and marketing

A lack of coordinated governance and limited resources are key constraints for an effective adaptive capacity The absence of a comprehensive Disaster Risk Management (DRM) framework undermines Grenada's efficacy in enhancing resilience against natural disasters and climate-related impacts. While the Government has made significant progress in building climate resilience, including establishing a contingency fund, leveraging various insurance products, and strengthening building codes, Grenada currently lacks a comprehensive and institutionalized approach to proactively address climatic risks holistically. Additionally, there is no specific guidance on how to effectively utilize the various resources available in different situations. This void has resulted in a lack of communication and coordination across ministries, hindering the country's preparedness and strategic response to climate and natural disasters. The Grenada First Recovery and Resilience Programmatic DPC from the World Bank supports Grenada in consolidating cross-ministry multidimensional disaster risk management (DRM) efforts into one unified system. However, a major issue lies in the fact that contingency funds often prioritize insuring physical assets, while allocating less emphasis to the agricultural sector. Given that the agricultural sector is disproportionately affected by climate change, there is a deficiency in both access to insurance products (or other contingency funds) and the availability and utilization of risk management platforms and tools specifically tailored for agriculture. Furthermore, as a Small Island Developing State (SIDS), Grenada faces significant constraints in terms of human and financial capacities. This poses a considerable challenge for the country in meeting its international commitments outlined in its Nationally Determined Contributions (NDC) and National Adaptation Plan (NAP). Additionally, mobilizing external financing to support the implementation of these commitments remains a critical task for Grenada.	**Increased adaptive capacity through the strengthening of the institutional and risk management frameworks.** The project will increase the governments' capacity to implement policy measures, climate action reporting and advocacy to coherently address climate resilience across all sectors, with a particular focus on the Agriculture, Forestry and Other Land Use (AFOLU) sector. Specifically, the project will (i) strengthen the Monitoring, Reporting and Verification system on climate change adaptation (Activity 3.1.1.1); (ii) mainstream climate change impact assessment into policy and program (Activity 3.1.1.2); (iii) support Climate Vulnerability Assessments (Activity 3.1.1.3), and (iv) strengthen the capacity of government officials to contribute to the development of a climate finance portal (Activity 3.1.1.4). In addition, the project will also support the vulnerable agroforestry farmers with a parametric microinsurance pilot, which complements the sovereign parametric insurance with the CCRIF (Activity 3.2.1.1). In Grenada, ex-ante instruments such as contingency funds (e.g., parametric insurance schemes) allow the country to access and distribute immediate liquidity following an extreme event. This not only provides short-term advantages for quick access to emergency response packages for rural communities but also contributes to fiscal sustainability in the long term. By relying on these instruments, Grenada avoids tapping into limited reserve funds or reallocating resources from ongoing development programs, which could otherwise jeopardize its climate resilience initiatives in other areas. Specifically, among others, the project will: - Provide 5,000 people with access to tailored climate information for resilience strengthening (planning and decision-making processes). - Train 50 institutional stakeholders on policy and regulatory measures, and monitoring, reporting and verification of climate action with emphasis on strategic mechanisms

J. Sustainability

The sustainability of ENRICH is a core consideration in its design, ensuring that the project's outcomes will persist long after the funding period concludes. Through an integrated approach that strengthens agricultural landscapes, supports climate-resilient value chains, and enhances

institutional capacities, ENRICH aims to build a long-term foundation for resilience and sustainability in Grenada's agricultural sector.

Outcome 1: Vulnerable communities have improved access to a sustainable use of water and to drought and hurricane-resistant infrastructure

ENRICH will restore public ponds, rehabilitate water infrastructure, and improve farm connections to address the increasing strain on Grenada's water systems caused by climate change, particularly droughts and storms. These interventions will secure a reliable water supply, ensuring that agricultural productivity remains stable even during extreme weather conditions.

In addition to water management improvements, ENRICH will construct and upgrade hurricane-resistant facilities, including storage warehouses, processing units, and livestock pens. These facilities will safeguard agricultural products, equipment, and livestock against hurricane-related damage, ensuring farmers can quickly resume operations after such events. The integration of these resilient structures into the agricultural system will help protect farmers' livelihoods and maintain economic stability during and after storm events.

The project will also implement ecosystem-based measures, including reforestation and erosion control around key water catchment areas. These actions will prevent land degradation, enhance water retention, and support the restoration of agricultural landscapes. The resilient infrastructure created through these efforts—both water systems and hurricane-resistant facilities—will make Grenada's agro-ecosystems more adaptable to future climate impacts, ensuring the long-term sustainability of water management, farming practices, and the broader agricultural economy.

This outcome contributes not only to agricultural resilience but also to the reduction of land degradation, particularly in areas prone to droughts and flooding. These measures will help maintain ecosystem health and prevent further degradation of agricultural land, ensuring long-term sustainability in water management and farming practices.

To ensure the long-term functionality and sustainability of the water management systems established under ENRICH, the project will equip community members with the skills and tools necessary to manage and maintain these systems. Local farmers, including women and youth, will receive targeted capacity-building in water infrastructure management, water-use efficiency, and maintenance practices through training programs and community workshops. This approach will not only strengthen the resilience of Grenada's water systems but also ensure that the knowledge and management skills are passed down to future generations, enhancing the long-term sustainability of both the infrastructure and the agricultural landscapes it supports.

Outcome 2: Vulnerable rural households and their most vulnerable members have greater capacity to adapt to climate change

ENRICH supports the transformation of Grenada's agricultural system by fostering diversified, competitive, and climate-resilient value chains. The project's focus on the adoption of Climate-Smart Agriculture (CSA) practices ensures that farmers are equipped to adapt to changing climate conditions while improving productivity. Through targeted training, particularly for women and youth, the project promotes the sustainable use of natural resources and strengthens climate resilience across multiple agricultural sectors. The introduction of climate-adaptive technologies, such as solar-powered irrigation, rainwater harvesting, and erosion control, directly contributes to the long-term sustainability of farming practices.

By promoting sustainable land management, particularly in cocoa and agroforestry systems, the project also supports biodiversity conservation. The diversification of farming systems, including the integration of high-value crops like cocoa with other perennials, helps maintain ecosystem services and supports the conservation of nationally important biodiversity. The introduction of

organic mixed plantations not only enhances agricultural resilience but also contributes to the preservation of local biodiversity, creating a balance between agricultural productivity and environmental conservation.

Additionally, ENRICH contributes to inclusive growth by focusing on vulnerable groups, such as women and youth, and enabling them to actively participate in climate-resilient value chains. Entrepreneurship Training (ET) and Business Development Services (BDS) will empower women and youth to establish climate-resilient enterprises, while Targeted Vocational Skills Training (VST) for Climate-Resilient Agriculture will ensure that young people acquire the technical skills needed to thrive in an evolving agricultural sector. This holistic approach strengthens the economic resilience of marginalized groups and helps reduce poverty by creating sustainable livelihood opportunities.

As a SIDS in the Caribbean, Grenada is highly exposed to climatic weather extremes, notably hurricanes, which have the potential to inflict significant structural damage and loss of productivity. To ensure the project can continue operating in such an event and support its long-term sustainability beyond implementation, the project specifically set aside funds for Emergency Response Packages to aid in the swift restoration and recovery of water management and livestock infrastructure, as well as critical agroforestry systems for the main cash crops.

Outcome 3: Improved capacity of local institutions and vulnerable communities to manage and share climate adaptation knowledge and cope with adverse climatic shocks.

ENRICH will strengthen institutional capacities for climate change adaptation and risk management, ensuring government institutions can better support farmers and rural communities in responding to climate-related challenges. By building a robust governance framework around climate resilience, the project equips national institutions with the tools to implement, monitor, and report on climate actions, aligning with Grenada's National Adaptation Plan (NAP) and Nationally Determined Contributions (NDC). The project's investment in policy development and risk mitigation mechanisms will improve governance, particularly in the agrifood sector, which faces the most severe climate impacts.

Through these improvements, Grenada will be better positioned to secure additional financing for climate action, ensuring that the progress achieved under ENRICH is sustained and expanded. The lessons learned from ENRICH will integrate into national policies and frameworks, shaping Grenada's climate resilience strategies beyond the life of the project.

By partnering with CRAIC through CCRIF, the parametric microinsurance gains institutional anchoring, ensuring long-term sustainability. This initiative enhances smallholder farmers' resilience to climate risks, supports sustainable agriculture, and aligns with regional goals by fostering broader access to climate resilience tools.

Replicability ENRICH aims to be replicable both within Grenada and in other Caribbean nations facing similar climate challenges. The project emphasizes capacity building through Farmer Field Schools (FFS) and partnerships with institutions like UWI and CARDI, creating a strong foundation of knowledge that can be adapted for other contexts. The successful implementation of climate-resilient technologies and practices will serve as a model for future initiatives in the agricultural sector. ENRICH fosters local ownership by involving stakeholders at all levels, ensuring that the practices and methodologies developed are easily replicable in other regions.

Exit Strategy ENRICH integrates a comprehensive exit strategy to ensure its benefits continue after project completion. The project builds the capacity of local institutions and extension services, ensuring that the knowledge and skills needed to maintain climate-resilient agricultural systems are sustained. Farmer Field Schools (FFS) will continue providing hands-on training in climate-

smart agricultural practices, while institutional partners will assume responsibility for key governance and monitoring functions. The construction, restoration, and upgrading of infrastructure that is hurricane-resistant and drought-resilient will significantly enhance the long-term resilience of vulnerable rural communities and serve as a model for adaptive practices in the agricultural sector. The innovative parametric insurance pilot will enhance the long-term creditworthiness of vulnerable agroforestry farmers, potentially opening access to financial services that might otherwise be inaccessible to them. This pilot also holds significant potential for upscaling, paving the way for wider access to climate resilience solutions for smallholder farmers across the region. ENRICH embeds climate resilience into Grenada's agricultural landscape and governance structures, creating the conditions for sustained investment and ongoing adaptation efforts. Its alignment with national policies such as the NAP, GDMP, and NDC ensures that the strategies developed through ENRICH will continue guiding Grenada's long-term climate adaptation approach.

Institutional Roles and Sustainability Arrangements. The sustainability of ENRICH's outcomes is anchored in strong partnerships with institutional stakeholders, ensuring that key governance and monitoring functions are integrated into existing frameworks. The RDU within the Ministry of Economic Development will serve as the central implementing body, coordinating activities and integrating them into national policy frameworks like Grenada's NAP and NDC. Key institutions such as NAWASA, the Bureau of Standards, and the Ministry of Agriculture and Lands, Fisheries, and Cooperatives will assume specific responsibilities, including water quality testing, water infrastructure management, and climate-smart agricultural extension services. The PSC will oversee governance and monitoring to ensure alignment with national strategies and policies. The PSC will include representatives from relevant ministries, civil society, and beneficiary groups, promoting transparency and accountability. Institutional capacity-building initiatives under Component 3 will equip these entities with the tools and knowledge needed to sustain the project's outcomes. This includes training government officials, developing risk management frameworks, and integrating monitoring systems into their operations. These arrangements ensure that ENRICH's benefits continue to support Grenada's agricultural and rural communities long after project completion.

K. Environmental and social impacts and risks

The project was screened against the Adaptation Fund's fifteen Environmental and Social Principles and IFAD's nine Environmental, Social, and Climate Standards using the SECAP screening tool, and it was classified as **Category B** (moderate risk). While the project is designed to enhance climate resilience in Grenada's agricultural sector, some activities may pose low to moderate environmental and social risks that are localized, manageable, and reversible with proper mitigation measures. In compliance with the Adaptation Fund's ESP and IFAD's SECAP, the project integrates comprehensive risk assessment and management procedures to avoid and minimize potential harms during both development and implementation. With adherence to best practices and safeguards, these risks can be effectively addressed, ensuring the project's overall environmental and social sustainability. The environmental and social screening provides a brief overview of the risk assessments detailed in the ESMP (Annex 3) and evidences the minor risks related to ENRICH. The table below provides an overview of the project related Environmental and Social Impacts and Risks. Detailed risks and mitigations measures are included in Annex 3.

Table 12: Overview of the ESP risk assessment

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance

Compliance with the Law		**Low risk:** The project will comply with all relevant laws and regulations. The project will be executed by the government, therefore the risk of non-compliance with the law is highly unlikely. There is however a low risk of non-compliance with environmental regulations by service providers, however mitigation measures will be put in place to ensure compliance by ensuring permits and approvals are obtained whenever required and through the monitoring and supervision of the PCU and IFAD.
Access and Equity		**Low risk:** There is a risk of a low participation of vulnerable groups (youth and women) in the project activities. However, though a participatory and inclusive approach, the project will enable fair and equitable access to project benefits to all participants, including marginalised and vulnerable groups. The project emphasizes targeted support and outreach, particularly to youth and women, through specialized entrepreneurship and vocational training activities and will offer flexible grants, job placement support, and practical climate-resilient skills training, which will address the barriers these groups face, promoting active participation. This risk will also be mitigated by adhering to the project's targeting and gender strategies and action plans which are developed to promote access, equity and inclusion.
Marginalized and Vulnerable Groups		**Low risk:** There is a risk of a low participation of vulnerable groups in the project activities. To address this, the project's priority target group will be smallholder farmers that are particularly vulnerable to the impacts of climate change. Additionally, the project will contribute to inclusive growth by focusing on vulnerable groups, such as women and youth, and enabling them to actively participate in climate-resilient value chains. Entrepreneurship Training (ET) and Business Development Services (BDS) will empower women and youth to establish climate-resilient enterprises, while Targeted Vocational Skills Training (VST) for Climate-Resilient Agriculture will ensure that young people acquire the technical skills needed to thrive in an evolving agricultural sector. This holistic approach strengthens the economic resilience of marginalized groups and helps reduce poverty by creating sustainable livelihood opportunities.
Human Rights	X	**No risk:** The project activities are not expected to contravene international or national human rights standards. The project is designed to uphold international and national human rights standards, prioritizing the well-being, dignity, and rights of all stakeholders, including vulnerable groups like smallholder farmers, women, and youth in line with Principle 4: Human Rights, as outlined in the Environmental and Social Policy (ESP). It aligns with Grenada's legal framework promoting equality, non-discrimination, and social justice by ensuring activities are transparent, inclusive, and participatory. Community consultations will incorporate local voices into decision-making, and a grievance redress mechanism will provide an accessible platform for addressing concerns, ensuring no group is marginalized or excluded from project benefits. No further assessment is required, but monitoring will ensure adherence to human rights principles and compliance with the Universal Declaration of Human Rights (UDHR) throughout implementation.
Gender Equality and Women's Empowerment		**Low risk:** There are potential risks of gender disparities in project benefits and low involvement in project activities. A gender analysis and gender action plan were conducted to assess impacts on women and design targeted measures to promote gender equity and inclusion ensuring active involvement of women in the project activities. Measures such as capacity building, prioritization criteria for women and women's

		representation have been identified to ensure gender equality and promote women's empowerment.
Core Labour Rights		**Low risk:** The project is not anticipated to violate core labour rights, as it will adhere to national labour laws and international standards. Regular monitoring will be conducted to ensure compliance with labour rights throughout the project cycle. There are however low risks of occupational health and safety as accidents can occur during the construction and rehabilitation of infrastructure. Specific measures to mitigate these risks are included in the ESMP.
Indigenous Peoples	X	**No risk:** No indigenous communities are identified in the target areas. Therefore, no further assessment is necessary.
Involuntary Resettlement		**Low risk:** Project activities will not involve any resettlement. The project will avoid any physical resettlement including for activities like water infrastructure rehabilitation and other infrastructure construction. These activities could however potentially lead to a temporary disruption of livelihoods or temporary restriction to natural resources. At this stage, these risks are expected to be low as the project will prioritize rehabilitation of already existing infrastructure. Specific screenings and assessments would be conducted for these activities. The project will first seek to avoid these risks and if unavoidable will ensure they are minimized and that potential affected persons will be consulted and compensated in line with the national laws, ESP and SECAP.
Protection of Natural Habitats	X	**No risk:** The project will not have any impacts on Natural Habitats as the project will not intervene in or around protected areas. Protected areas will be excluded from the project target zones including for sub-projects for which the specific locations are not yet identified.
Conservation of Biological Diversity		**Low risk:** Risks include potential loss of biodiversity due to construction or rehabilitation works. Potential impacts are expected to be low and mitigation measures have been identified in the ESMP promoting sustainable land use and agroforestry practices.
Climate Change		**Low risk:** The project is designed to improve climate resilience and is not expected to contribute to climate change. Monitoring will be conducted to ensure that activities maintain their low greenhouse gas emissions profile.
Pollution Prevention and Resource Efficiency		**Moderate risk:** Activities like the construction of facilities could lead to pollution or inefficient use of resources. To mitigate these risks the project will promote water and resource efficiency practices as well as good agricultural practices. The ESMP will also include pollution control measures, such as proper waste disposal, water quality monitoring, and use of environmentally friendly materials.
Public Health	X	**No risk:** The project is not expected to have any impacts on public health.
Physical and Cultural Heritage		**Low risk:** No physical or cultural heritage sites are expected to be impacted. While highly unlikely, any chance finds during construction will follow the national "chance find" procedure to manage unanticipated discoveries.
Lands and Soil Conservation		**Low risk:** Earthworks, infrastructure construction and restoration could potentially lead to soil erosion or land degradation. This however is expected to be minor and localised. The ESMP will include measures to mitigate any negative impacts and monitoring will be conducted to ensure soil stability and land productivity.

Unidentified Sub-Projects (USP): Given the demand-based approach of the small grants in component 2 and the lack of specific technical characteristics of certain infrastructure investments

under component 1, some degree of unidentified subprojects is unavoidable in ENRICH. Under **Output 1.1.2**, while the locations of the ponds to be rehabilitated is already known, the specific restoration needs of the ponds and specific characteristics of the check dams to be constructed will be identified following a comprehensive feasibility study of the selected public ponds and water infrastructure during start of the project. For **Output 1.1.4**, while the typology of the hurricane resilient infrastructure is already identified, determining the specific type of infrastructure, its location, and its management will be done during implementation based on a participatory decision-making approach. For **Output 2.1.2**, the specific sites for the FFS are not yet identified. The specific investments under **Output 2.1.3** are inherently demand-driven, as they depend on individual assessments of each farmer's unique vulnerabilities, priorities, and adaptation potential. While the type of interventions to be financed has been thoroughly identified as described in the activities' description, the specific locations of these interventions cannot be identified at the design stage. The USP approach allows the project to remain adaptable, supporting small farmers with customized resilience-enhancing solutions.

The USP approach enables the project to respond flexibly and specifically to the needs identified in real-time by small farmers, including backyard gardeners and livestock producers, as they navigate evolving climate stresses. By structuring these resilience-building interventions as USPs, ENRICH can tailor resources more effectively, directly supporting the farmers' priority adaptation needs. This flexibility strengthens local ownership, enhances the relevance and sustainability of interventions, and ensures that farmers can adopt the practices most beneficial to their specific conditions.

Although USPs may involve an increased risk of non-compliance with the Environmental and Social Policy (ESP) and Gender Policy (GP) due location specific risks or technical specifications not identified at the design, ENRICH was designed to minimize these risks and has built in safeguards to mitigate them. As a result, the specific type of activities to be financed under output 2.1.3 have been defined to a certain degree, resulting in only partially unidentified subprojects which already allows a pre-identification of environmental and social risks based on the overall nature and projected scope of the activities which have been taken into consideration in the table above. For each of these partially unidentified sub-projects, the project will conduct robust screening and monitoring processes to ensure compliance with ESP and GP standards. Each resilience-enhancing investment will undergo an environmental and social screening process, and specific gender-sensitive criteria will be applied to ensure equitable access to resources and opportunities (See Annex 3 and 6). Additionally, gender and environmental considerations will be integrated into the design and selection criteria for each USP, ensuring alignment with the AF's policies and reducing any compliance risks.

PART III: IMPLEMENTATION ARRANGEMENTS

A. Implementation arrangements

Institutional anchoring and organizational framework. MED will represent the grant recipient (GoG), while the ENRICH project will be anchored to the Rural Development Unit in the same Ministry. The overall responsibility for the project's oversight, political guidance and implementation will rest with a specific **Project Steering Committee (PSC)**, established and chaired by the Permanent Secretary (PS) of Economic Development, Planning and Cooperatives ((MEPD, also NDA for the Adaptation Fund)). The PSC will provide strategic guidance to the ENRICH project, and will be comprised of the PS for Agriculture, Lands, Forestry and Marine Resources, the PS for the Ministry of Climate Resilience, the Environment and Renewable Energy (MCRE, also NDA for the GCF), the PS for Ministry for Mobilization, Implementation and Transformation (MITI, also NDA for the GEF), the PS of the Ministry of Carriacou and Petite Martinique (MCPM), representatives of beneficiaries selected in a transparent manner and with gender equity, or their representatives. The PSC membership may be amended depending on project requirements, subject to prior approval of IFAD. Among its responsibilities, the PSC would approve the Annual Work Plan and Budget (AWPB), Procurement Plan (PP) and Progress Reports before submitting to IFAD. The ENRICH project will develop partnerships with other institutions of the public or private sector in order to access technical advice, to implement specific activities or to disseminate and exchange ideas on project implementation.

The Technical Working Groups (TWG), at least one on water in agriculture, and one on climate smart agriculture, will be set-up under RDU coordination to bring together knowledgeable thematic experts from both the public sector (relevant ministry) as well as from the private sector, civil society and other on-going projects implementing similar activities, to share methodologies, challenges, experiences, success stories and lessons learnt, as well as to coordinate project interventions when/where required.

The PSC will ensure Project oversight to ensure that the project meets GOG and IFAD policies; while the enforcement of procedures according to the Project Implementation Manual is the responsibility of the Project Manager in RDU. The Project Manager will also review the quality of draft project outputs, provide feedback to the project partners as displayed in the Implementation arrangement, and establish peer review procedures to ensure adequate quality of scientific and technical outputs.

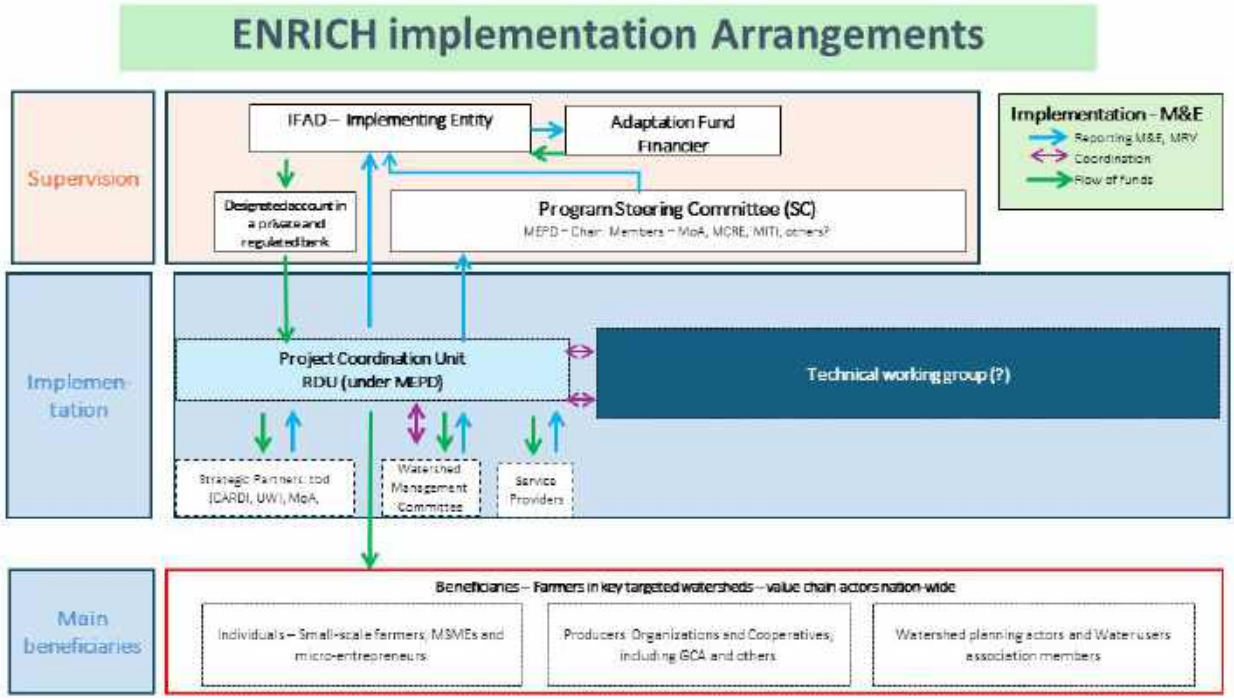
The Project Coordination Unit (PCU) will be entrusted to the Rural Development Unit (RDU), which reports to the PS for Economic Planning and Development. This existing unit has the responsibility for implementing programs in the area of rural development. It also implements other IFAD financed projects, such as the SAEP, as well as another externally financed project, the Basic Needs Trust Fund (BNTF) financed by the Caribbean Development Bank (CDB). The RDU will be responsible for the day-to-day management and implementation of the project. The PCU will be vested with financial and technical autonomy. Its proposed staffing will encompass: (i) a Project Manager, with expertise in managing projects in rural development; (ii) a Administrative Officer (also covering Monitoring and Evaluation, as well as Knowledge Management and Communication aspects); (iii) a Finance Officer; (iv) a Procurement Officer; (v) an Accounts assistant; as well as support staff including (i) Driver; (ii) Cleaner/Office Attendant; iii) Secretary/Receptionist.

In the case of safeguards and gender/youth aspects, the PCU has resources to hire specific consultants to carry out its oversight function of the ESMP and GAP implementation[64];

[64] Environmental and Social Management Plans (ESMP), Gender Action Plan (GAP), Grievance Redress Mechanism

The project will also hire three technical experts to provide specialized support in carrying out key technical activities under each component. These will include: (a) a Rural Infrastructure Engineer for Component 1; (b) a Climate smart Agriculture specialist for Component 2, and (c) a Policy and Institutions specialist (also covering capacity development aspects) for Component 3. These experts will not be tasked with project coordination or management functions, and should not be considered as part of the PCU.

Figure 15: ENRICH project implementation arrangements



Partners: In order to implement project activities, the PCU will sign a MoU (without budget implications) or an MoA (with budget implication, i.e. to finance something) with public institutions and will procure and celebrate contracts with private external stakeholders. This will be the case under Component 2, with institutions such as the Grenada Investment Development Corporation (GIDC), or the T.A. Marryshow Community College (TAMCC) and the New Life Organization (NEWLO) to formalize their role in preparing and delivering entrepreneurship and vocational training. An MoU would also be signed with the Secretariat of Agriculture, Forestry and Lands within MED and the Ministry of Carriacou and Petite Martinique (MCPM), to second extension officers in the context of the Farmers Field Schools (FFS) to provide specialized technical support to farmers in areas such as soil health, water management, good agriculture practices, crops rotation and diversification, aimed at promoting resilience. Additionally, an MoA would be signed with the CCRIF for the innovative parametric microinsurance pilot.

Specific arrangements by component
Component 1

- Complementary designs, studies and works for pond restoration and irrigation systems' rehabilitation would be contracted to local and/or regional private firms.

(GRM). Safeguards documents used under SAEP (such as ESMP, GRM, and GAP will serve as a basis to develop the safeguard instruments used by ENRICH.

- The design and construction of the water distribution network from restored public infrastructure to farms would be contracted to local/regional private firms.
- The quality of water as relates to quality standards for irrigation –for example, contamination from chemicals or salinization- would be responsibility of the Bureau of Standards. The PCU would determine the sites, frequency and type of tests required.
- The support to beneficiaries for organizing/strengthening Water Users' Associations and providing training on management and maintenance of the infrastructure would be implemented through an MoU with the MOALF, involving the Department of Land Use and the Extension Department (and department of irrigation?).
- The project will strengthen that department in terms of policies and methodologies, subject matter specialists, training extension staff on WUA and O&M capacities. Exchange visit to other projects in the subregion will be organized and be used to also identify training needs
- The design and construction of hurricane resistant facilities would be contracted in lots to local private firms according to the nature and physical location of the infrastructure. The selection of beneficiaries would be responsibility of the PCU applying clear and transparent criteria linked with the farmers' vulnerability and risks of damages.

Activities under this component will mostly be directly implementation by RDU, who will be responsible for the procurement of works contracts, service contracts, and equipment. All procurement of works, services and goods would be conducted by the PCU according to IFAD's Procurement Handbook. On the training side, and to provide support to Water Users Association, the project will collaborate with the Secretariat of Agriculture, Lands and Forests within MED (land use department, irrigation department), NAWASA and the Bureau of standards for testing of water.

Component 2 Training and capacity building of extension services would be implemented through MoAs or contract to specialized institutions.

- Training on FFS methodologies and FFS demonstration models would be contracted to local consultants, firms or institutions with the technical capacity to set up an initial batch of demo models. These would be located in institutions or individual farms that ensure access to all beneficiaries for training activities. The extension services of the project would be responsible for continuing the deployment of demo models as required according to farmers' demand.
- Training to youth on VST would be implemented through MoAs with public institutions or contracts to private institutions. The experience of SAEP showed that TAMCC and NEWLO (NGO) had a good performance in spite the training was severely affected by the COVID pandemic. The role of the GNTA would be to issue the certificates to graduates as the certification agency.
- Grants for investments at farm level including cocoa rehabilitation, adoption of CSA practices and emergency response packages will be implemented by the PCU. The process would be demand driven based on competitive calls for proposals. The selection criteria would be based on climate risks, developed by the PCU and approved by the PSC, subject to IFAD No Objection. There would be an ad-hoc technical Committee for assessing and approving the proposals. The goods and works would be procured by the PCU to local/regional suppliers. The implementation of the investments would include technical handholding to beneficiaries as required.

Regarding the training for Vocational Skills (VST), a MoA with NewLO, is envisaged, whereas a MoA with GIDC is expected to take place for the Entrepreneurship training (ET).

A MoA with UWI could be envisaged to provide training of trainers on Farmer Field Schools (FFS)to RDU personnel and extension staff from the Ministry of from other organizations

Component 3This subcomponent would be implemented through a MoA with the MCRE where the Ministry would identify their needs for training and capacity building, including the participation in regional/international fora.

- Importance of an AFOLU dedicated climate change committee, to improve coordination of different adaptation and mitigation activities. Also to strengthen MRV and reporting on commitments, also using Geographical Information System and database.
- The training to the MCRE would be conducted by regional specialized institutions that are currently developing such activities.
- The technical staff of the MCRE would also participate in exchanges with other Caribbean countries that show significant progress in developing policies or technical approaches for addressing/measuring the impact of CC and in advocating for supporting SIDS for adapting and mitigating CC impacts.
- An MoA will be signed with the CCRIC for the innovative parametric microinsurance pilot for vulnerable agroforestry farmers.

An MoU or MoA could be signed with CARDI or UWI to prepare and deliver some of these trainings.

Operational aspects: The project will acquire 2 field vehicles for the PCU as well as office equipment, IT equipment and IT systems. Recurrent expenditures will include fuel and daily subsistence allowance for PCU staff, as well as vehicle maintenance, utility bills, stationery expenses and building maintenance. In terms of monitoring and evaluation activities, the project will finance a consultancy to update the Management Information System of the ENRICH project, building on the SAEP one, as well as the financing of a baseline study, a mid-term review, and an endline survey . In addition, the program will finance gender and youth specific assessments and an annual external audit. A communication plan will be developed, and the project will ensure that PCU staff is trained in M&E, safeguards and fiduciary issues. It will also finance a start-up workshop, as well as annual evaluation/consultation/planning workshops, where annual activities will be identified and prioritized, and will subsequently be included in the annual workplan and budget.

B. Financial and risk management

Financial management The Government of Grenada has taken several important steps toward improving its anti-corruption policies in recent years. It ranks as number 49 out of 180 countries on the 2022 Corruption Perception Index of Transparency International. The country level inherent financial management risk undertaken internally by IFAD Is moderate. The PCU financial management inherent risk for the last three years has ranged between moderate and low and currently is assessed as moderate.

Financial management arrangements. The Project Coordination Unit includes a finance officer and an accountant who will report directly to the project director. All staff are or will be trained on IFAD anticorruption policies. Project risk level and the adequacy of these arrangements will be monitored and assessed by IFAD's financial management division on an on-going basis and throughout the implementation of the project during supervision missions.

Budgeting. The annual workplan and budget, and the procurement plan will be recorded in both the official accounting software and if needed a complementary financial software, which will be able to generate timely and reliable reports on budget implementation by components, activities

and financing categories as well as financiers and geographical area.

Flow of funds and disbursement arrangements. One designated account will be opened at a commercial bank to receive proceeds exclusively from the Adaptation Fund grant and will follow the revolving fund mechanism. The project will generate, approve and submit to IFAD its withdrawal applications through an online application that facilitates the approval and submission of WAs and provides the project with timely financial information and reports generated directly from the IFAD accounting system, further facilitating financial management at project level.

External audit. The project will submit an external audit report to IFAD within six months of the end of each fiscal year. The audit's Terms of Reference will be revised and cleared by IFAD before their submission to the auditor. The Audit can be undertaken by the Supreme audit Institution or a privet firm (if the latter is chosen, to be selected through a competitive process, in line with IFAD's auditing standards). IFAD will review the quality and timeliness of each audit report and ensure proper follow-up to audit recommendations contained in the mandatory Management Letter. Audit firm rehiring will only be possible for a maximum of four consecutive years, and conditional to the outcome of IFAD's yearly assessments.

Procurement. All procurement will be under the oversight of the Project Coordination Unit. The procurement officer will oversee and carry out procurement activities in coordination with technical staff. The procurement of goods, works and services shall be carried out in accordance with IFAD's Project Procurement Guidelines. The procurement plan, implementation of procurement activities and register of contracts will be done in OPEN and the data kept up to date on a continuous basis. IFAD's review of and no-objection to the procurement plan is compulsory.

Fraud prevention. IFAD's Personal Data Privacy & Anti-Financial Crime Unit has conducted a financial crime screening of MED (Grenada), to meet donor requirements as part of our commitments under IFAD's Anti-Money Laundering and Countering the Financing of Terrorism (AML/CFT) Policy and did not identify any financial crime alerts and therefore assigned a rating of Low Risk. Fraud risks will be addressed in accordance with provisions of the IFAD Policy on Preventing Fraud and Corruption in its Activities and Operations, IFAD applies a zero-tolerance policy regarding any fraudulent, corrupt, collusive or coercive actions in the projects it funds.

The following table presents the main potential risks to project success and mitigation strategies

Table 13: Project risk management

Risk Category	Risk	Impact	Probability of Occurrence			Mitigation Measures
			Low	Medium	High	
Social	Youth and Women Low Participation in Project Activities: Youth and women may show low participation in project activities such as entrepreneurship training, business development, and vocational skills training (VST). This could reduce the effectiveness of sub-component 2.1.	Moderate		X		The programme emphasizes targeted support and outreach, particularly to youth and women, through specialized entrepreneurship and vocational training under Activity 2 of sub-component 2.1. ENRICH will offer flexible grants, job placement support, and practical climate-resilient skills training, which will address the barriers these groups face, promoting active participation.
Environmental	Climate-Related Shocks: Extreme weather events (droughts, hurricanes, flooding) could disrupt project implementation,	Major			X	ENRICH addresses these risks by investing in drought- and hurricane-resilient infrastructure under sub-component 1.1. This includes water storage solutions, public ponds restoration, and erosion

	damage agricultural infrastructure, and reduce water availability, particularly under sub-component 1.1.					control measures to improve water security during climate shocks. The emergency response packages in sub-component 2.1 are also designed to provide farmers with immediate support after extreme events.
Financial	Low Adoption of Climate-Smart Agriculture (CSA) Practices by Farmers: Farmers may be reluctant to adopt new CSA technologies and resilience-enhancing practices due to a lack of knowledge or initial costs.	Moderate	X			The Farmer Field Schools (FFS) approach under sub-component 2.1 will offer hands-on training and demonstrations, showing the tangible benefits of CSA practices. Extension officers, trained under the project, will provide continuous support to smallholders, addressing knowledge gaps and providing financial incentives to facilitate adoption.
Environmental	Deforestation and Degradation of Watersheds: Insufficient watershed management and forest rehabilitation could exacerbate erosion, increase run-off, and diminish water quality, especially after hurricanes. This risk is relevant to sub-component 1.1 on water infrastructure.	Major		X		ENRICH includes collaboration with NAWASA, the Forestry Division, and the Land Management Division to implement investments at catchment level according to national management plans. The rehabilitation of public ponds and integration of erosion control measures will mitigate run-off and deforestation, improving overall water management across watersheds.
Financial	Supply Chain Disruptions for Project Inputs: International disruptions or local logistical challenges could delay the procurement of critical materials like irrigation systems, solar pumps, and inputs for rehabilitation efforts.	Moderate	X			ENRICH will manage procurement through a structured, transparent process led by the RDU. Local procurement will be prioritized where feasible to avoid international supply chain delays. Bulk procurement and early planning will help mitigate risks of shortages or delays.
Institutional	Insufficient Capacity of National Institutions for Project Implementation: The risk that national institutions may lack the necessary capacity to manage, monitor, and implement project activities efficiently.	Moderate	X			Capacity-building efforts under sub-component 3.1 will strengthen institutional frameworks and risk management platforms. The Project will provide training to key institutions and support the development of policy measures, as well as monitoring and evaluation systems to enhance implementation capacity.
Financial	Price Inflation and Increased Costs of Materials: Rising costs for construction materials, equipment, and agricultural inputs could reduce the project's ability to meet its targets, particularly in infrastructure investments under sub-component 1.1.	Moderate		X		ENRICH will include contingency funds for price fluctuations. The RDU will also employ value-engineering strategies, prioritizing cost-effective and sustainable materials. Where possible, local sourcing will be encouraged to mitigate the effects of international price volatility.
Institutional	Low Institutional Engagement in Policy Advocacy for Climate	Moderate	X			ENRICH will strengthen institutional engagement by promoting dialogue and advocacy at national and international

	Change Adaptation: There is a risk that national institutions may show low buy-in for adopting new policies and measures addressing climate adaptation under sub-component 3.1.					forums. The Programme will provide training and strategic documents to facilitate the participation of Grenada in these discussions and build political will for climate-adaptive policies.

C. Environmental and social risk management

To manage environmental and social risks associated with the project effectively, a robust framework will be implemented in accordance with the Adaptation Fund's ESP and Gender Policy and IFAD's SECAP. The project has been classified as Category B, indicating a moderate risk level. This categorization results from the screening against the Adaptation Fund's fifteen Environmental and Social Principles and IFAD's SECAP, indicating that while the project is expected to provide significant climate resilience benefits to Grenada's agricultural sector, it may also lead to localized, manageable, and reversible impacts that require careful assessment and management.

Environmental and Social Risk Analysis and Management Plan. An environmental and social risk analysis has been conducted as part of the project design, identifying potential environmental and social risks and impacts associated with project activities, including for those that are partially unidentified as is the case for the small grants financed under Output 2.1.3, where resilience enhancing investments are financed (specific location not yet identified). This analysis outlines the expected impacts, their significance, and the necessary mitigation measures to address any negative effects. In alignment with those findings an ESMP has been developed. The ESMP details specific actions, monitoring requirements, and responsibilities for mitigating identified risks and provides guidance for the screening and management of potential additional risks related to partially unidentified activities for which the location will be determined during implementation. This plan will be a living document, adjusted as needed based on ongoing assessments and monitoring throughout the project lifecycle by the RDU. These are included in Annex 3.

Mitigation Measures. The project will follow a mitigation hierarchy that prioritizes avoidance of adverse impacts, followed by minimization, rehabilitation, and, if necessary, offsetting impacts. By systematically addressing potential risks, the project aims to reduce its overall environmental and social footprint. The project will implement best practices in construction, agriculture, and resource management. This includes adopting sustainable agricultural techniques, minimizing waste, and ensuring proper resource management, which will collectively help mitigate potential negative environmental impacts.

Stakeholder Engagement. The project emphasizes the importance of stakeholder engagement, particularly focusing on vulnerable groups, including women and youth. Consultations were held during the project design and will be held regularly during implementation to gather input and concerns from the community, ensuring that all voices are heard and considered in decision-making.

Monitoring and Reporting. A structured monitoring framework will be established to assess the effectiveness of the implemented mitigation measures. Specific indicators related to environmental and social performance have already been integrated in the project's ESMP, ensuring compliance with the ESP and SECAP. Regular reporting will also be conducted to evaluate project outcomes, including environmental and social impacts.

Grievance Redress Mechanism. In addition to IFAD's complaints procedure, a project-level GRM will be established at the RDU level to address complaints and concerns from stakeholders

regarding environmental and social impacts. This mechanism will ensure that grievances are handled in a timely and effective manner, fostering accountability and responsiveness. A proposed GRM is included in Appendix 3 of the ESMP.

Adherence to National Laws. The project will also adhere to relevant national environmental legislation, including the Physical Planning and Development Control Act and the Waste Management Act. Collaboration with governmental authorities will ensure that all necessary permits and approvals are obtained before project activities commence.

D. Monitoring and evaluation arrangements

Project monitoring and evaluation (M&E) will be under the oversight of the RDU, currently implementing SAEP. SAEP's monitoring and evaluation manual will be adapted to capture the requirements of the ENRICH project.

Project Monitoring and Evaluation (M&E) will be led by the M&E officer who will work closely with the implementing partners. The M&E system will: (i) produce, organize and disseminate the information needed for the strategic management of the project, (ii) document the results and lessons learned for internal use and for public dissemination on the achievements and (iii) respond to the information needs of Adaptation Fund, IFAD and the Government on the activities, immediate outcomes and impact of the Project. A monitoring and evaluation manual that will describe a simple and effective system for collecting, processing, analysing and disseminating data will be prepared in the first year of the Project. Capacity-building will be carried out for M&E functions to allow tracking of project implementation and results.

The monitoring and evaluation system will be coupled with a geographic information system (GIS) that will allow mapping and spatio-temporal analyses. Geo-coordinates (with at least 10-meter accuracy) and pictures will be collected for water and irrigation infrastructure as well as investments at farm level under component 2.

Day to day monitoring of implementation progress will be the responsibility of the project team, based on the project's annual work plan and its indicators. During the first months of the project, the project team will complete and fine-tune baseline data for each indicator and will define and fine-tune performance. Specific targets for the first year of implementation, progress indicators, and their means of verification will be developed at the inception workshop.

Project inception workshop. A workshop will be conducted within four months of project start up with the project team, relevant government counterparts and IFAD. The inception workshop is crucial to building ownership and to plan the first-year annual work plan. The Project Coordination Unit will present the modalities of project implementation and execution and assist the project team to understand and take ownership of the projects goals and objectives. A project inception report will be prepared immediately after inception workshop. It will include:

- an annual work plan and budget for the first year of implementation divided in quarterly timeframes detailing the activities and targets;
- a M&E plan for the duration of the project;
- a narrative on the institutional roles and responsibilities, as well as feedback mechanisms of project-related partners;
- the outline and scope of the baseline study; and a section on progress to date on project establishment and start-up activities and an update of any changed external conditions that may affect project implementation.

Baseline study. A baseline study will be conducted within the first year to collect data and serve as the basis for the assessment of how efficiently the activity has been implemented and results achieved. The survey will follow IFAD's core outcome indicators measurement guidelines (read more here). The study will include the target group and a control group which will be essential to determine the attribution of results to project activities.

Quarterly progress reports. Project implementing partners in the field will submit these reports to the Project Coordination Unit to ensure continuous monitoring of project activities and identify challenges to adopt necessary corrective measures in due time.

Annual project performance report of the Adaptation Fund. The project will submit a project performance report each year using the Adaptation Fund template. This report includes information on finance, procurement, risk assessment, rating, indicators, results, and lessons learned. The project will be reviewed and completed by IFAD, which will forward the report to the Adaptation Fund.

Supervision. IFAD will undertake an in-country supervision mission at least once per year following its supervision framework and guidelines. Additional implementation support from IFAD on specific identified issues will be mobilized if considered necessary by the Government and IFAD. The supervision report will highlight, in addition to the routine supervision tasks (fiduciary, compliance and programme implementation), the main thematic or performance areas that require strengthening and would imply deployment of additional inputs for capacity building, in-depth analytical studies or review of existing policies.

Mid-term review. This will be carried out in the third year of the project by an independent party. It will assess operational aspects such as project management and implementation of activities as well as the extent to which the objectives are being fulfilled. Corrective actions will be decided upon for the project to achieve impact.

Final evaluation. This will be conducted three months before project closure and will include a project completion survey. It will be carried out by an independent party. The survey will include the same set of questions used at baseline to allow for comparison against baseline results. In addition, a panel of households will be interviewed to provide a qualitative analysis of programme impact. Moreover, analysis will be done by type of beneficiary, region and gender of household head.

Safeguards instruments: Implementation of the safeguard instruments such as the Environmental and Social Management Plan (ESMP) and the Gender Action Plan (GAP) are both included in the Monitoring and Evaluation budget and will be included in the M&E workplan.

Table 14: Monitoring and evaluation budget

M&E Item	Responsibility	Timing	Total available budget (USD)
Administrative Officer (also responsible for M&E and KM)	Project Manager	Continuous	72.330
Baseline study	External consultants	Year 1	25,000
Inception workshop	Project Manager, M&E officer	Year 1	6,000
M&E plan development	M&E Officer	Year 1	4,000
Mid-term evaluation	External consultants	Year 3	25,000

Completion evaluation	External consultants	Year 5	25,000
Technical support and supervision	IFAD	Continuous	350,000
ESMP implementation	Admin Officer (M&E)	Continuous	56,250
Gender and Youth Action Plan oversight	Admin Officer (M&E)	Continuous	55,000
Grievance Redress Mechanism	Admin Officer (M&E)	Continuous	15,000

E. Results framework

The following table presents the results' framework of the ENRICH project

Table 15 Results framework of the ENRICH project

Objective	Indicator	Target		Verification		
ENRICH: Enhancing the Resilience of vulnerable small Island Communities to climate chan		Baseline	Endline (wor	Source	Frequency	Responsibility
The project objective is to reduce exposure and vulnerability to extreme climatic events and strengthen the adaptative capacity of vulnerable rural small island communities	- Number of people adopting resilience-enhancing practices, technologies and mechanisms (of which women)	0	2100 (840)	ENRICH program report	Annual	PCU/RDU
	- Number of hectares under improved management	0	1,000	Remote sensing (NDVI - M&	Closure	MCRE + PCU/RD
	- **Total number of beneficiaries** (of which women) - (core AF Results Framework indicator)	**0**	**8000 (3200)**	Survey	Mid term and closure	PCU/RDU
Component 1. Drought- and hurricane resilient infrastructure for vulnerable rural communities						
Outcome 1.1. Vulnerable communities have improved access to a sustainable use of water and to drought and hurricane-resistant infrastructure	- Number of people that benefit from the rehabilitation & improvement of water systems for agriculture (of which women)	0	600 (200)	ENRICH program reports	Mid Term and Closure	PCU/RDU
	- Farmers targeted by the project that have access to hurricane resistant infrastructure	0	1250 (400)	Surveys	Mid Term and Closure	PCU/RDU
Output 1.1.1 Capacities of communities enhanced to maintain water collection systems	- Number of farmers trained on water harvesting techniques and irrigation	0	625 (250)	ENRICH program reports	Quarterly	PCU/RDU
Output 1.1.2 Public ponds and water infrastructure is restored to improve water catchment and storage	- Number of water system facilities rehabilitated and/or improved	0	25	ENRICH program reports	Annual	PCU/RDU
Output 1.1.3 Farm connections are established using a landscape approach	- Numbers of farms connected to water harvesting infrastructure	0	600 (200)	ENRICH program reports	Annual	PCU/RDU
Output 1.1.4 Hurricane-resistant infrastructure rehabilitated and constructed	- **Number of hurricane resistant assets* constructed** (Core AF Results Framework Indicator) *assets include warehouses and storage facilities, livestock and poultry pen, processing facilities)	**0**	**50**	ENRICH program reports	Annual	PCU/RDU

Component 2. Climate-resilient innovations and investments for vulnerable rural households and their most vulnerable members						
Outcome 2.1. Vulnerable rural households and their most vulnerable members have greater capacity to adapt to climate change	- % of project beneficiaries that report greater capacity to adapt to climate change	0%	75% (50%)	Surveys	Mid Term and Closure	PCU/RDU
Output 2.1.1. Capacity of women and youth on entrepreneurial marketing and business development	- Number of women and youth trained on entrepreneurship, business development and marketing	0	500 (270)	ENRICH program reports	Quarterly	PCU/RDU
Output 2.1.2 Climate-adaptive agricultural technologies and best practices promoted	- Number of climate smart technologies and practices promoted by the project to communities	0	5	ENRICH program reports	Annual	PCU/RDU
	- Number of farmers trained in CSA technologies and practices, of which women	0	3000 (1200)	ENRICH program reports	Quarterly	PCU/RDU
Output 2.1.3 Resilience enhancing investments financed	- Private sector financing leveraged (m GND)	0	2	ENRICH program reports	Annual	PCU/RDU
Component 3. Climate resilient institutions and risk mitigation framework						
Outcome 3.1. Improved capacity of local institutions and vulnerable communities to manage and share climate adaptation knowledge and cope with adverse climatic shock	- Number of people accessing tailored climate information for resilience strengthening (planning and decision-making processes).	0	5000 (2500)	Surveys	Mid term and closure	PCU/RDU
Output 3.1.1 Institutional capacity strengthened for the implementation of policy measures, climate action reporting advocacy and knowledge management	- Number of institutional stakeholders trained on policy and regulatory measures, and trained to monitor, report and verify climate action with emphasis on strategic mechanisms	0	50 (25)	ENRICH program reports	Annual	PCU/RDU
Output 3.1.2 Vulnerable agroforestry farmers equipped with parametric microinsurance for the agricultural sector	- Number of individuals covered with innovative parametric micro-insurance	0	100 (20)	ENRICH program reports	Annual	PCU/RDU

F. Alignment with the Results Framework of the Adaptation Fund

This project is aligned with the Adaptation Fund's strategic results framework and directly contributes to the Fund's overall objective and outcomes, as shown in the following table.

Table 16 Alignment of the project with the outcomes and outputs of the Adaptation Fund RF

Project Outcomes	Project Outcome indicators	Adaptation Fund Outcome	Fund Outcome Indicator	Grant (USD)
The **project objective** is to promote the climate resilience and adaptive capacity of Grenadian small-scale producers through climate-smart agriculture practices and resilient infrastructure in drought- and hurricane-prone landscapes.				
Component 1: Drought- and hurricane resilient infrastructure for vulnerable rural communities				
Outcome 1.1: Vulnerable communities have improved access to a sustainable use of water and to drought and hurricane-resistant infrastructure	% of farmers targeted by the project that have improved access i) to water for agriculture and ii) to hurricane resistant infrastructure	**Outcome 4**: Increased adaptive capacity within relevant development sector services and infrastructure assets	4.2. Physical infrastructure improved to withstand climate change and variability-induced stress	3,532,562
Component 2: Climate-resilient innovations and investments for vulnerable rural households				
Outcome 2.1: Vulnerable rural households have greater capacity to adapt to climate change and to cope with adverse climatic shocks.	- % of project beneficiaries that report greater capacity to adapt to climate change and cope with climate shocks	**Outcome 8**: Support the development and diffusion of innovative adaptation practices, tools, technologies	8. Innovative adaptation practices are rolled out, scaled up, encouraged and/or accelerated at regional, national or subnational level.	3,926,676
Component 3: Climate resilient institutions and risk framework				
Outcome 3.1: Governance Framework and Risk Management for climate change resilience are strengthened	- Number of people accessing tailored climate information for resilience strengthening (planning and decision-making processes).	**Outcome 2:** Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses **Outcome 1:** Reduced exposure to climate-related hazards and threats	2.1. Capacity of staff to respond to, and mitigate impacts of, climate-related events from targeted institutions increased 1.1 Relevant threat and hazard information generated, disseminated to stakeholders on a timely basis	881,777
Project Outputs	**Project Output Indicators**	**Fund Output**	**Fund Output Indicator**	**Grant (USD)**
Component 1: Drought- and hurricane resilient infrastructure for vulnerable rural communities				
Output 1.1.1 Capacities of communities enhanced to maintain water collection systems	- Number of farmers trained on water harvesting techniques and irrigation	**Output 4**: Vulnerable development sector services and infrastructure assets strengthened in	4.1.2. No. of physical assets strengthened or constructed to withstand conditions resulting from	254,801

Output 1.1.2 Public ponds and water infrastructure is restored to improve water catchment and storage	- Number of water system facilities rehabilitated and/ or improved	response to cc impacts, including variability	climate variability and change (by sector and scale)	1,898,230
Output 1.1.3 Farm connections are established using a landscape approach	- Numbers of farms connected to water harvesting infrastructure			628,963
Output 1.1.4 Hurricane-resistant infrastructure rehabilitated and constructed	- Number of hurricane resistant assets constructed/ rehabilitated			750,568
Component 2: Climate-resilient innovations and investments for vulnerable rural households				
Output 2.1.1. Capacity of women and youth on entrepreneurial marketing and business development	- Number of women and youth trained on entrepreneurship, business development and marketing	**Output 8**: Viable innovations are rolled out, scaled up, encouraged and/or accelerated.	8.1. No. of innovative adaptation practices, tools and technologies accelerated, scaled-up and/or replicated	1,273,274
Output 2.1.2 Climate-adaptive agricultural technologies and best practices promoted	- Number of climate smart technologies and practices promoted by the project to communities; Number of farmers trained in csa technologies and practices, of which women			804,885
Output 2.1.3 Resilience enhancing investments financed	- Private sector financing leveraged (m GND)			1,848,517
Component 3: Climate resilient institutions and risk framework				
Output 3.1.1 Institutional capacity strengthened for the implementation of policy measures, climate action reporting advocacy and knowledge management	- Number of institutional stakeholders trained on policy and regulatory measures, and trained to monitor, report and verify climate action with emphasis on strategic mechanisms	**Output 2.1**: Strengthened capacity of national and sub-national centers and networks to respond rapidly to extreme weather events	1.2.1. Percentage of target population covered by adequate risk-reduction systems	463,192
Output 3.1.2 Vulnerable agroforestry farmers equipped with parametric microinsurance for the agricultural sector	- Number of individuals covered with innovative parametric micro-insurance	**Output 1.2**: Targeted population groups covered by adequate risk reduction systems		418,585

G. Detailed budget

The table below provide a detailed breakdown of each components' detailed budget, at activity level. Detailed budget for the project execution costs (PCU), as well as for the Implementing Entity fees is also provided.

Table 17 Detailed budget of the project, at activity level

Component 1

Outcome	Output	Activity	Cost item	Unit	Total Quantity	Unit costs in USD AF	Total Cost in USD AF
Outcome 1.1.	Output 1.1.1	Activity 1.1.1.1	Infrastructure specialist	Months	46.00	3,089	142,098
Outcome 1.1.	Output 1.1.1	Activity 1.1.1.1	Capacity building of communities to upgrade water collection systems, including a gender approach	Trainings	30.00	525	15,750
Outcome 1.1.	Output 1.1.1	Activity 1.1.1.1	Capacity building of communities to foster local ownership and empowerment, including a gender approach	Workshops	30.00	525	15,750
Outcome 1.1.	Output 1.1.1	Activity 1.1.1.1	Water meters	Unit	600.00	135	81,203
Outcome 1.1.	Output 1.1.2	Activity 1.1.2.1	Re-Assessment and Selection of Targeted Sites - studies and supervision	Lumpsum	1.00	148,907	148,907
Outcome 1.1.	Output 1.1.2	Activity 1.1.2.1	Re-Assessment and Selection of Targeted Sites - stakeholders engagement	Workshops	20.00	525	10,500
Outcome 1.1.	Output 1.1.2	Activity 1.1.2.1	Public ponds restoration works (surface footprint with an average depth of 2 meters)	Sq meters	40,882.43	33	1,331,681
Outcome 1.1.	Output 1.1.2	Activity 1.1.2.1	Restoration of critical areas in connection to the ponds	Hectares	8.00	1,000	8,000
Outcome 1.1.	Output 1.1.2	Activity 1.1.2.1	Repairing and Upgrading Irrigation distribution networks	Acres	700.00	465	325,530
Outcome 1.1.	Output 1.1.2	Activity 1.1.2.1	Water harvesting structures (check dams)	Check dams	163.53	354	57,861
Outcome 1.1.	Output 1.1.2	Activity 1.1.2.1	Integration of restored infrastructure to the water system	Workshops	30.00	525	15,750
Outcome 1.1.	Output 1.1.3	Activity 1.1.3.1	Design of efficient Water Distribution Networks	Acres	600.00	52	31,283
Outcome 1.1.	Output 1.1.3	Activity 1.1.3.1	Procurement of irrigation materials	Acres	600.00	902	541,354
Outcome 1.1.	Output 1.1.3	Activity 1.1.3.1	Training of farmers and local stakeholders, including a gender approach	Trainings	20.00	525	10,500
Outcome 1.1.	Output 1.1.3	Activity 1.1.3.1	Support for community participation in monitoring	Lumpsum	1.00	45,825	45,825
Outcome 1.2 A	Output 1.1.4	Activity 1.1.4.1	Storage Warehouses for crops constructed / rehabilitated based on the Programme guidelines (including gender approach)	Unit	10.00	18,764	187,642
Outcome 1.2 A	Output 1.1.4	Activity 1.1.4.1	Storage Warehouses for agriculture equipment constructed / rehabilitated based on the Programme guidelines (including gender approach)	Unit	10.00	9,382	93,821
Outcome 1.2 A	Output 1.1.4	Activity 1.1.4.1	Processing facilities constructed / rehabilitated based on the Programme guidelines (including gender approach)	Unit	10.00	28,146	281,463
Outcome 1.2 A	Output 1.1.4	Activity 1.1.4.1	Livestock pens constructed / rehabilitated based on the Programme guidelines (including gender approach)	Unit	20.00	9,382	187,642
Sub-total							**3,532,562**

Component 2

Outcome	Output	Activity	Cost item	Unit	Total Quantity	Unit costs in USD AF	Total Cost in USD AF
Outcome 2.1.	Output 2.1.1	Activity 2.1.1.1	Develop training materials and capacity building tools on VST mainstreaming climate change considerations and gender approach	Lumpsum	1.00	9,000	9,000
Outcome 2.1.	Output 2.1.1	Activity 2.1.1.1	Develop training materials and capacity building tools on ET BDS mainstreaming climate change considerations and gender approach	Lumpsum	1.00	9,000	9,000
Outcome 2.1.	Output 2.1.1	Activity 2.1.1.1	Training of trainers Vocational Skills Training - refresher	Trainers	12.00	125	1,500
Outcome 2.1.	Output 2.1.1	Activity 2.1.1.1	Training of trainers for Entrepreneurship and Business Development Services for Youth and Women - refresher	Trainers	6.00	125	750
Outcome 2.1.	Output 2.1.1	Activity 2.1.1.2	Vocational Skills Training (VST)	Trainees	300.00	2,842	852,616
Outcome 2.1.	Output 2.1.1	Activity 2.1.1.3	ET course	Trainees	150.00	2,669	400,409
Outcome 2.1.	Output 2.1.2	Activity 2.1.2.1	CSA specialist	Month	53.00	2,424	128,480
Outcome 2.1.	Output 2.1.2	Activity 2.1.2.1	Develop training materials and capacity building tools on FFS mainstreaming climate change considerations and gender approach, including a Farmer Business School (FBS) type of module	Lumpsum	1.00	9,000	9,000
Outcome 2.1.	Output 2.1.2	Activity 2.1.2.1	Training of trainers for Farmer Field Schools (FFS) mainstreaming climate change considerations and gender approach, including a Farmer Business School (FBS) type of module	Trainers	30.00	125	3,750
Outcome 2.1.	Output 2.1.2	Activity 2.1.2.1	Communication and logistics equipment for FFS trainers	Kit	15.00	5,580	83,704
Outcome 2.1.	Output 2.1.2	Activity 2.1.2.1	Follow-up support on certified users and certified trainers of Rural Invest (RIV) with a gender and youth focus	Lumpsum	1.00	8,627	8,627
Outcome 2.1.	Output 2.1.2	Activity 2.1.2.2	FFS, including 40% of women members	FFS	96.00	2,500	240,000
Outcome 2.1.	Output 2.1.2	Activity 2.1.2.2	FFS WUAs, including 40% of women members	FFS	24.00	2,500	60,000
Outcome 2.1.	Output 2.1.2	Activity 2.1.2.2	FFS TA providers honorarium	Lumpsum	1.00	189,869	189,869
Outcome 2.1.	Output 2.1.2	Activity 2.1.2.2	FFS TA providers operation	Lumpsum	1.00	66,454	66,454
Outcome 2.1.	Output 2.1.2	Activity 2.1.2.2	FFS information and innovation network	Lumpsum	1.00	15,000	15,000
Outcome 2.1.	Output 2.1.3	Activity 2.1.3.1	Business Plans first push	BPs	120.00	1,000	120,000
Outcome 2.1.	Output 2.1.3	Activity 2.1.3.1	Business Plans - second push individual	BPs	30.00	4,000	120,000
Outcome 2.1.	Output 2.1.3	Activity 2.1.3.1	Business Plans - second push joint	BPs	10.00	12,000	120,000
Outcome 2.1.	Output 2.1.3	Activity 2.1.3.2	Resilience-enhancing technologies - (i) CSA Practices	Kits	20.00	8,000	160,000
Outcome 2.1.	Output 2.1.3	Activity 2.1.3.2	Resilience-enhancing technologies - (ii) Erosion and Storm Protection	Acres	480.00	1,264	606,836
Outcome 2.1.	Output 2.1.3	Activity 2.1.3.2	Resilience-enhancing technologies - (iii) Backyard Gardens	Families	480.00	1,504	721,681
Sub-total							**3,926,676**

Component 3

Outcome	Output	Activity	Cost item	Unit	Total Quantity	Unit costs in USD AF	Total Cost in USD AF
Outcome 3.1.	Output 3.1.1	Activity 3.1.1.1	Develop an MRV system on CCA, CCM and investments from the Program to inform the NDC	System	1.00	48,900	48,900
Outcome 3.1.	Output 3.1.1	Activity 3.1.1.1	Train stakeholders on the MRV system	Lumpsum	1.00	30,500	30,500
Outcome 3.1.	Output 3.1.1	Activity 3.1.1.2	Policy and institutional specialist	Month	55.00	2,428	133,542
Outcome 3.1.	Output 3.1.1	Activity 3.1.1.2	Assessment of CC impacts in the agrifood sector, with a focus on the landscapes, value chains and beneficiaries covered by the Programme, and developing the AFOLU section of the NDC	Assessment	1.00	33,000	33,000
Outcome 3.1.	Output 3.1.1	Activity 3.1.1.2	Build capacities of institutional stakeholders to mainstream CC impacts assessment into key regulatory / policy frameworks and strategic programs	Lumpsum	1.00	15,250	15,250
Outcome 3.1.	Output 3.1.1	Activity 3.1.1.2	Contribute with the revision and proposals for reform to improve the coordination of key regulations / policies for resilient, suistainable and fair agrifood systems - following food, water, energy, ecosystem nexus	Lumpsum	1.00	46,000	46,000
Outcome 3.1.	Output 3.1.1	Activity 3.1.1.3	Collaborate with the main financial institutions for the agrifood sector to improve their policies, procedures, guidelines with the inclusion of climate risk and vulnerability assessment tools	Lumpsum	1.00	32,500	32,500
Outcome 3.1.	Output 3.1.1	Activity 3.1.1.3	Train financial institutions and other stakeholders to implement the climate risk and vulnerability assessment tools	Lumpsum	1.00	30,500	30,500
Outcome 3.1.	Output 3.1.1	Activity 3.1.1.4	Contribute to the development of the AFOLU section of the climate finance portal for Grenada with the aim of promoting knowledge management, learning and climate change action	Lumpsum	1.00	15,000	15,000
Outcome 3.1.	Output 3.1.1	Activity 3.1.1.4	Support national dialogue to identify potential innovative financing mechanisms and define an action plan on the most feasible option	Lumpsum	1.00	28,000	28,000
Outcome 3.1.	Output 3.1.1	Activity 3.1.1.4	Implement Rural Invest platform for the Programme and for other relevant financing sources operational in the country (primarily local financial institutions)	Lumpsum	1.00	50,000	50,000
Outcome 3.1.	Output 3.1.2	Activity 3.1.2.1	MOA pilot climate risk insurance and risk management for agriculture	Tool	1.00	400,000	400,000
Outcome 3.1.	Output 3.1.2	Activity 3.1.2.1	Informatic equipment to complement PMU / partners capacities for risk management	Kit	5.00	1,717	8,585
Outcome 3.1.	Output 3.1.2	Activity 3.1.2.1	Informatic systems to complement PMU / partners capacities for risk management	Unit	1.00	10,000	10,000
Subtotal							**881,777**

PCU costs

Cost item	Unit	Total Quantity	Unit costs in USD AF	Total Cost in USD AF
Baseline Study	Unit	1.00	25,000	25,000
Mid-Term Review	Unit	1.00	25,000	25,000
Programme Completion	Unit	1.00	25,000	25,000
External audit	Unit	5.00	10,000	50,000
Gender specific assessments	Lumpsum	3	5500	16,500
Application of the Gender Action Plan	Lumpsum	1.00	55,000	55,000
Implementation of ESMP	Lumpsum	1.00	56,250	56,250
Application of the GRM	Lumpsum	1.00	15,190	15,190
Start-up Workshop	Unit	1.00	6,000	6,000
Closing Workshop	Unit	1.00	6,000	6,000
Vehicles	Unit	2.00	38,633	77,265
Office furniture	Lumpsum	1.00	8,216	8,216
Finance Manager	Month	59.00	2,665	157,243
Administrative Officer	Month	59.00	1,226	72,330
Procurement Officer	Month	59.00	2,199	129,724
Accounts Officer	Month	59.00	1,361	80,326
Secretary	Month	59.00	219	12,892
Driver	Month	59.00	758	44,749
Cleaner / Office Attendant	Month	59.00	219	12,892
Total PMU				**875,576**

Fees distribution

Cost item				Total Cost in USD AF
Policy support, reporting, outreach				235,023
Programme preparation, implementation, supervision, completion				391,705
Financial management and legal support				156,682
Total Fees				783,410

H. Disbursement schedule

Table 18 Disbursement Milestone

Milestone	Upon signature of Agreement	One Year after Project start a)	Year 2 b)	Year 3	Year 4 c)	Total
Scheduled date	Nov 2025	May 2027	May 2028	May 2029	May 2030	-
Project funds	1,137,683	2,639,485	2,592,725	2,363,443	483,254	9,216,590
Implementation Entity fees	142,147	218,562	208,493	167,200	47,008	783,410
Total	1,279,830	2,858,047	2,801,218	2,530,643	530,262	10,000,000

a) Use projected start date to approximate first year disbursement

b) Subsequent dates will follow the year anniversary of project start

c) Add columns for years as needed

PART IV: ENDORSEMENT BY GOVERNMENT AND CERTIFICATION BY THE IMPLEMENTING ENTITY

A. Record of endorsement on behalf of the government[65]

Hon. Lennox J. Andrews, Minister of Economic Development, Planning, Tourism, Creative Economy, Culture, Agriculture, and Lands, Forestry, Marine Resources and & Cooperatives of Grenada	Date*: 5 November 2024*

LETTER OF ENDORSEMENT BY GOVERNMENT

5th November 2024

To: The Adaptation Fund Board
c/o Adaptation Fund Board
Secretariat Email: Secretariat@Adaptation-Fund.org
Fax: 202 522 3240/5

Subject: Endorsement for the concept note titled "Enhancing the resilience of vulnerable small island communities to climate change hazards (ENRICH)"

In my capacity as Designated Authority for the Adaptation Fund in Grenada, I confirm that the above national project proposal is in accordance with the government's national priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in Grenada. The objective of the project is to reduce exposure and vulnerability to extreme climatic events and strengthen the adaptative capacity of vulnerable rural small island communities.

Accordingly, I am pleased to endorse the above project proposal with support from the Adaptation Fund. If approved, the project will be implemented by the International Fund for Agricultural Development (IFAD), and executed by the Ministry of Economic Development, Planning, Tourism, Creative Economy, Culture, Agriculture and Lands, Forestry, Marine Resources and Cooperatives.

Please accept the assurances of my highest consideration.

Sincerely,

Minister for Agriculture Lands and Forestry

Hon. Lennox J. Andrews
Minister, National Designated Authority for the AF
Ministry of Economic Development, Planning, Tourism, Creative Economy, Culture, Agriculture and Lands, Forestry, Marine Resources and Cooperatives

[65] Each Party shall designate and communicate to the secretariat the authority that will endorse on behalf of the national government the projects proposed by the implementing entities

B. Implementing Entity certification

Provide the name and signature of the Implementing Entity Coordinator and the date of signature. Provide also the project/programme contact person's name, telephone number and email address

I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans and subject to the approval by the Adaptation Fund Board, commit to implementing the project/programme in compliance with the Environmental and Social Policy and the Gender Policy of the Adaptation Fund and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme.

Implementing Entity Co-ordinator: Mr Pierre Yves Guedez, Lead, Multilateral Climate and Environmental Funds ECG Division, IFAD	Email : p.guedez@ifad.org Signature: 
Mr Juan Carlos Mendoza Casadiegos *Director* *Environment, Climate, Gender and Social Inclusion (ECG) Division, IFAD*	
Date: *20 January, 2025*	email: ecgmailbox@ifad.org
Project Contact Person: Mr. Oliver Page, Regional Climate and Environment Specialist	
Email: o.page@ifad.org	

ANNEXES

Annex 1. Letter of request from MED to IFAD

In December 2022, IFAD received the following letter from the Minister of MEPD requesting further financial resources to support climate resilience and adaptive capacity in farming communities of Grenada through Climate Smart Agriculture practices and technologies.

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

Ref. No.: (473) 440-0366/7/8/9
Email: registry@tourism.gov.gd

MINISTRY OF ECONOMIC DEVELOPMENT,
PLANNING, TOURISM, ICT, CREATIVE
ECONOMY, AGRICULTURE AND LANDS,
FISHERIES & CO-OPERATIVES
4TH FLOOR, MINISTERIAL COMPLEX,
SIR ERIC M. GAIRY
BOTANICA GARDENS,
ST. GEORGE'S,
GRENADA, W.I.

LETTER OF ENDORSEMENT BY GOVERNMENT

15th December, 2022

To: The Adaptation Fund Board
c/o Adaptation Fund Board Secretariat
Email: Secretariat@Adaptation-Fund.org
Fax: 202 522 3240/5

Subject: Endorsement for the concept note titled "Increasing climate resilience and adaptive capacity among Farming and fishing communities in Grenada"

In my capacity as Designated Authority for the Adaptation Fund in Grenada, I confirm that the above national project proposal is in accordance with the government's national priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in Grenada. The objective of the project is to increase climate resilience and adaptive capacity in farming and fishing communities in Grenada through a people-centred approach, by fostering adoption of new Climate Smart Agriculture (CSA) practices and technologies for agriculture and livestock, and sustainable fishing practices for fisheries.

Accordingly, I am pleased to endorse the above project proposal with support from the Adaptation Fund. If approved, the project will be implemented by the International Fund for Agricultural Development (IFAD), and executed by the Ministry of Economic Development, Planning, Tourism, ICT, Creative Economy, Agriculture and Lands, Fisheries & Cooperatives.

Please accept the assurances of my highest consideration.

Sincerely,

Hon. Lennox J. Andrews
Minister, National Designated Authority for the AF
Ministry of Economic Development, Planning, Tourism, ICT, Creative Economy, Agriculture, and Lands, Fisheries & Cooperatives

Annex 2. Stakeholders' consultation

IFAD conducted several missions to prepare the Concept Note, which was endorsed by the Government in December 2022, and approved by the Adaptation Fund in June 2023. During the months of September-October-November of 2023, the Government conducted stakeholders' consultations geared primarily to farmers and fishers, in various parishes of Grenada, including St John's, St Patrick's, St Andrew's and Carriacou. This allowed to consult with approximately 53 farmers and fishers, of which 16 were women (30%).

The design of the ENRICH project was done in a hybrid manner. In June 2024, August and September 2024, virtual meetings were held with national and regional counterparts. From 24 June 2022 to 5 July 2024, an in-country mission took place in Grenada, which was cut short due to Hurricane Beryl making landfall in Carriacou on July 1st around noon, also affecting Grenada island; a 24h curfew was put in place, and government departments were closed for a three day period. The Government asked the mission to leave early, as the conditions for further stakeholders' consultations were not in place, as people had to prioritize attending to their families and properties.

A second mission took place in late October 2024, with the objective to validate an initial proposal, and to engage in additional stakeholders' consultation, as well as conducting additional field visits, and conducting in-depth technical discussions with key counterparts.

During both missions, a wide range of stakeholders were consulted, both at national, and local level. In-person and virtual meetings were held in the time periods around the three country visits. In total, 62 government officials and international experts (of which 32 were women) were consulted for the project formulation. The final workshop allowed to bring together 23 representatives from public, private sector (including farmers) and civil society, of which 13 were women.

The names and contact details are listed in various table that follow, in chronological order. Government officials and specialists are associated to the following agencies: a) Ministry of Economic Planning and Development, Secretariat of Agriculture lands and Forestry, Ministry of Climate Resilience, Environment, Ministry of Implementation and Transformation, and Ministry of Social Development, as well as Ministry of Labour.

Special attention was given to ensure a gender and youth focus in these consultations. As such, institutions dealing with gender and youth issues, both public and from the civil society, were consulted. The consultative process (including lists of stakeholders consulted) is detailed in the following tables.

The main issues emerging from these consultations related to droughts, need for rainwater harvesting and/or irrigation, either communal or individual, limited economic opportunities, frequent abnormal climatic events, such as hurricanes, need for protection structure, provide equipment, and financing to farmers, provide training on conservation agriculture (mulching, composting), and soil fertility, as well as in tree crop husbandry and produce processing and value addition. Women mentioned having access to machinery to assist with labour intensive tasks, as well as access to best practice for keeping small animals, as well as backyard gardens. They have also mentioned that the program should support the provision and facilitate the access to small machinery, particularly for post harvesting, processing and value addition.

The consultations carried out during the missions that took place during the design have included discussions with relevant stakeholders including farmers on the environmental and social impacts related to the project activities as well as the processes that the project will go through in terms of screening, assessment of environmental and social risks and preparation of the ESMP

Stakeholders' consultation - Ministry of Economic Development, Planning and Cooperatives – September and November 2023

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IFAD
Climate Smart Agriculture
SAEP
& Rural Enterprise Programme
ADAPTATION FUND CONSULTATION
Fishers & Farmers Let Your Voices Be Heard: Join Our Consultation
WED 15TH NOVEMBER 2023
5:00 PM - 7:00PM
RESOURCE CENTRE, HILLSBOROUGH CARRIACOU
Come have the opportunity to:
Discuss the concept notes of the proposed Adaptation Fund project
Provide input on the design of the proposed Adaptation Fund project
Discuss plan of action for implementation of the proposed Adaptation Fund project
CONTACT US FOR MORE INFORMATION
473-442-0105
saep@saep.gov.gd


IFAD
Climate Smart Agriculture
SAEP
& Rural Enterprise Programme
ADAPTATION FUND CONSULTATION
Farmers & Fishers Let Your Voices Be Heard: Join Our Consultation
WED 8TH NOV 2023
3:00 PM - 5:00 PM
ST ANDREW'S METHODIST SCHOOL, ST. ANDREW
Come have the opportunity to:
Discuss the concept notes of the Adaptation Fund
Provide input on the design of the Adaptation Fund
Discuss plan of action for implementation of the Adaptation Fund
CONTACT US FOR MORE INFORMATION
473-442-0105
saep@saep.gov.gd

Location	Date Of Activity	First Name	Last Name	Address: Parish	Address: Community	Sex	Contact Number	Area of Work
The Pavillion, Plains, St. Patrick	2023-09-11	Campbell	Cornwall	St. Patrick	La Taste	male	4	farming
The Pavillion, Plains, St. Patrick	2023-09-11	Ishmael	Merryman	St. Patrick	Mt Craven	male	4577112	Seamoss Farming
The Pavillion, Plains, St. Patrick	2023-09-11	Donald	Bartholomew	St. Patrick	Calaloo	male	419-1022 420-0858	farming
The Pavillion, Plains, St. Patrick	2023-09-11	Adam	John	St. Patrick	Rose Hill	male	5342237	farming
The Pavillion, Plains, St. Patrick	2023-09-11	Javis	Edwards	St. John	Grand Roy	male		farming
The Pavillion, Plains, St. Patrick	2023-09-11	Matthew	Philip	St. Patrick	Snell Hall	male		farming
The Pavillion, Plains, St. Patrick	2023-09-11	Marilyn	Nurse	St. Patrick	High street	female	414-8330	farming
The Pavillion, Plains, St. Patrick	2023-09-11	Thomas	Jeffrey	St. Patrick	River Sallee	male	420-7764	farming
The Pavillion, Plains, St. Patrick	2023-09-11	Kerry-ann	Frank	St. George	Annadale	female	535-5082	Agronomist (moa staff)
The Pavillion, Plains, St. Patrick	2023-09-11	Regan	Neptune	St. Patrick	La Taste	male	459-3690	farming
The Pavillion, Plains, St. Patrick	2023-09-11	Darron	Williams	St. David	Corinth	male	422-1841	farming
The Pavillion, Plains, St. Patrick	2023-09-11	Kason	Charles	St. Andrew	Union	male	416-4654	Agronomist (moa staff)
The Pavillion, Plains, St. Patrick	2023-09-11	Anthony	John	St. Patrick	Rose hill	male	5362491	farming
The Pavillion, Plains, St. Patrick	2023-09-11	Jennifer	Andall	St. Patrick	Mt Fendue	female		farming
The Pavillion, Plains, St. Patrick	2023-09-11	Coslyn	Andall	St. Mark	Union	female	416-6032	farming
The Pavillion, Plains, St. Patrick	2023-09-11	Paula	Whiteman	St. Patrick	Snell Hall	female		farming
The Pavillion, Plains, St. Patrick	2023-09-11	Maureen	Matthew	St. Patrick	Madeys	female		farming
The Pavillion, Plains, St. Patrick	2023-09-11	Antonio	Reuben	St. Patrick	Hermitage	male		farming
The Pavillion, Plains, St. Patrick	2023-09-11	Devon	Fullerton	St. Patrick	Hermitage	male		farming
The Pavillion, Plains, St. Patrick	2023-09-11	Denise	George Lockiby	St. Patrick	Plains	female	442-0720	farming
The Pavillion, Plains, St. Patrick	2023-09-11	David	Lockiby	St. Patrick	Plains	male		farming
The Pavillion, Plains, St. Patrick	2023-09-11	Stephen	Williams	St. Patrick	Rose Hill	male	423 4218	farming
The Pavillion, Plains, St. Patrick	2023-09-11	Ken	Richards	St. Patrick	Rose hill	male	538-7965	farming
The Pavillion, Plains, St. Patrick	2023-09-11	Shinner	Alexander	St. Andrew	Pearls	female	404-7840	farming
The Pavillion, Plains, St. Patrick	2023-09-11	Ryan	Hall	St. David	Perdmontemps	male	458-8376	farming
The Pavillion, Plains, St. Patrick	2023-09-11	Ronald	O' Neal	St. David	Good Hope	male	457-3584	farming
The Pavillion, Plains, St. Patrick	2023-09-11	Kenneth	Charles	St. Patrick	Rose Hill	male	457-6641	farming
The Pavillion, Plains, St. Patrick	2023-09-11	Jenny	Antoine	St. John	Mt Granby	female	533-4243	farming
The Pavillion, Plains, St. Patrick	2023-09-11	Jude	Antoine	St. John	Mt Granby	male	449-4648	farming
The Pavillion, Plains, St. Patrick	2023-09-11	Emerson	Calliste	St. Andrew	La Poterie	male	520-2864	farming
The Pavillion, Plains, St. Patrick	2023-09-11	Leon Kelly	Hall	St. Patrick		male		farming
The Pavillion, Plains, St. Patrick	2023-09-11	Brent	Samuel	St. George	Fontenoy	male		farming
The Pavillion, Plains, St. Patrick	2023-09-11	Jasmine	Stanislaus	St. Patrick	Hermitage	female	423 -8470	farming

Location	Date Of Activity	First Name	Last Name	Address: Parish	Address: Community	Sex	Contact Number	Area of Work
Anglican Pastoral Center, St. John	2023-11-07	Jenny	Fleming-Antoine	St. John	Mt Granby	female	5334243	farming
Anglican Pastoral Center, St. John	2023-11-07	Lydia	James	St. John	Mt Granby	female	4490517	farming
Anglican Pastoral Center, St. John	2023-11-07	Garvin	Taylor	St. John	Mt Granby	male	4196068	farming
Anglican Pastoral Center, St. John	2023-11-07	Stephen	James	St. John	Mt Granby	male	4171524	farming
Anglican Pastoral Center, St. John	2023-11-07	Andris	Noel-Fleming	St. John	Mt Granby	female	5383306	farming
Anglican Pastoral Center, St. John	2023-11-07	John	Mc Phail	St. John	Mt Granby	male	4581385	farming
Anglican Pastoral Center, St. John	2023-11-07	Garwin	Benjamin	St. John	Mt Granby	male	4154163	farming
Anglican Pastoral Center, St. John	2023-11-07	Lester	Mc Phie	St. John	Clozier	male	5333909	farming
Anglican Pastoral Center, St. John	2023-11-07	Kenneth	James	St. John	Mt Granby	male	4593839	farming
Anglican Pastoral Center, St. John	2023-11-07	Ronald	Charles	St. John	Dougaldston	male		farming
Resource Centre, Hillsborough, Carriacou	2023-11-15	Darrell	Snagg	Carriacou	Hillsborough	male	533-3327	farming
Resource Centre, Hillsborough, Carriacou	2023-11-15	Tyron	Douglas	Carriacou	Bogles	male	420-0211	fishing
Resource Centre, Hillsborough, Carriacou	2023-11-15	Donette	Patrice	Carriacou	Bayaleau	female	415-9008	farming
Resource Centre, Hillsborough, Carriacou	2023-11-15	Benson	Patrice	Carriacou	Windward	male	4030545	farming
Resource Centre, Hillsborough, Carriacou	2023-11-15	Daniel	Jerry Charles	Carriacou		male		fishing
Resource Centre, Hillsborough, Carriacou	2023-11-15	Franklin	Scott	Carriacou	Belair	male		farming
Resource Centre, Hillsborough, Carriacou	2023-11-15	Frances	Alexander	Carriacou	Lauriston	female	419-7547	farming
Resource Centre, Hillsborough, Carriacou	2023-11-15	Dain	Lewis	Carriacou	Harvey Vale	male	422 9076	fishing
Resource Centre, Hillsborough, Carriacou	2023-11-15	Ronould	Compton	Carriacou	Windward	male	419-1779 4035600	fishing
Resource Centre, Hillsborough, Carriacou	2023-11-15	Joshua	Emons	Carriacou	Belle vue	male		farming
Resource Centre, Hillsborough, Carriacou	2023-11-15	Rawle	Patterson	Carriacou		male		other
Resource Centre, Hillsborough, Carriacou	2023-11-15	Alvin	Gay	Carriacou	Lauriston	male	4560828	fishing
Resource Centre, Hillsborough, Carriacou	2023-11-15	Kennis	Edwards	Carriacou	Brunswick	male	418-0224	farming, fishing
Resource Centre, Hillsborough, Carriacou	2023-11-15	Judith	Charles Date	Carriacou	Cherry hill	female		farming, agro_processing
Resource Centre, Hillsborough, Carriacou	2023-11-15	Maria	Blair	Carriacou	Six roads	female	538-8130	farming
Resource Centre, Hillsborough, Carriacou	2023-11-15	Linda	Mathurine	Carriacou	Top hill	female	4030207	farming
Resource Centre, Hillsborough, Carriacou	2023-11-15	Joshua	Clement	Carriacou	Harvey Vale	male	538-6056	fishing
Resource Centre, Hillsborough, Carriacou	2023-11-15	Zola	Joseph	Carriacou	Lauriston	male	449-2234	fishing
Resource Centre, Hillsborough, Carriacou	2023-11-15	Timon	McNeil	Carriacou	Lauriston	male	425-3165	fishing

Mission Agenda: Adaptation Fund Proposal Increasing climate resilience and adaptive capacity among farming and fishing communities in Grenada – Design Mission – 24 June to 05 July 2024

DATES	ACTIVITIES	OBJECTIVES	PARTICIPANTS	VENUE
Monday June 24th, 2024	**Morning session – IFAD/FAO team session** **9am – 12pm**	• Review of Mission ToRs, key tasks and responsibilities • Review of initial stakeholder mapping exercise and confirmation of key actors to be consulted during the first or second mission. • Fine tuning of consultations agenda, materials and logistics	IFAD Team-all FAO Team	Coyaba
	Lunch – 12:00 p.m. - 1:00 p.m.			
	Meeting with GEF **1.30 p.m. – 3.00 p.m.**	Introductory Meeting to present overview of the GEF/ASPIRE &AF Resilience Projects Briefing Meeting with RDU	AF focal point (Ms. Nicole Clark Dr. Stephen Fletcher Manager	MIT Office Coyaba
	End of Day Business – Travel back to hotel			
Tuesday, June 25th 2024	**Meeting with Minister of Agriculture** **9:00pm – 10:30pm**	Introductory Meeting to present overview of the GEF/ASPIRE &AF Resilience Projects	Ministry of Economic Hon. Lennox J Andrews, Ministry of Agriculture PS PS Agriculture - Isaac Bhagwan/ PS-Econ Dev - Merina Jessimay Mr. Mervyn Haynes DETC (later)	Minister's Office
	Meeting with Minister of Climate Resilience **10:30 – 11:15pm**	Introductory Meeting to present overview of the GEF/ASPIRE &AF Resilience Projects	Minister of Climate Resilience – Hon. Hon. Kerryne Z. James PS MOCRE & NDA GCF Perron Johnson Ms. Aria St. Louis – Chief Environmental Officer – International Agreements (UNFCC, UNCD, CBD, NDC, NAP, NCCP, NAP)	Minister's Office
	Meeting with SAEP Team\RDU	Introductory Meeting to present overview of the GEF/ASPIRE &AF	IFAD Team PSC Members	RDU Conference Room

	11:30 AM – 13:00 PM	Resilience Projects	SAEP/RDU PMT BNTF Zoom link for virtual participation	
	Meeting with Senator for Agriculture 1:30 pm – 2.00 pm	Introductory Meeting to present overview of the GEF/ASPIRE &AF Resilience Projects	- Hon Roderick St. Clair – Senator for Agriculture - IFAD Team	GCNA Building
	Meeting with GCNA & GCA 2:00 p.m – 2: 30 P.M	Introductory Meeting to present overview of the GEF/ASPIRE &AF Resilience Projects	- Hon Roderick St. Clair – Senator for Agriculture & Manager GCNA - Mr. Andrew Hastick – Manager Grenada Cocoa Association (GCA)	GCNA Building
	Meeting with Senior Officers MOA 2:45 PM – 4:00pm		Ms. Lauren St. Louis (Chief Extension Officer MOA) Ms Alison Haynes (Agronomist – MOA)	Min of Agriculture (Botanical Gardens)
	End of day			
Wednesday June 26th, 2024	**Field Visits - Cocoa Production & Processing Areas**	Field visits and exchanges with farmers, cooperatives, community representatives / organizations and local government officials.	IFAD Team CARDI; Ministry of Agriculture (Mirabeau & Boulogne Propagating Stations), Belmont Estate, Jouvey Cocoa Processing Factory, St. Marks, Northeast Farmers Organization	Notices to Managers of Sites
Thursday June 27th, 2024	**First stakeholders' consultation 9am – 12pm**	To gather insights, concerns and priorities around the inputs from the Project Concept Note and other key aspects of consultation and application of GEF, AF and IFAD policies.	IFAD Team RDU List of Targeted Participants	STADIUM Invitations to Participants
	Meeting with GRENROP 1:00 PM – 1:45 PM	Gender Specialist	Ms. Therisa Marryshow Ms Elaine Henry McQween Team Members TBD Meeting with	RDU Conference Room

	Parallel Meeting with GGCA 1:00 PM – 1:45 PM	Working Session – Information and Data to inform Mapping of Cocoa Value Chain	Mr. Andrew Hastick GCA and GCA Tean Value Chain Consultant – James/ Yerania???	GCNA Building
	Working session 2.00 p.m. – 4.00 pm	Working session on initial proposal of Project Implementation Arrangements	IFAD Team	RDU Conference Room / Hotel
Friday June 28th, 2024 9:00 – 1000	**Bilateral meetings; Possible Implementation arrangements (RDU) and pre-wrap-up** GIDC	• Continue bilateral meetings with Government and other partners • Working session on possible implementation arrangements • Pre-wrap-up with key Government counterpart (TBD/Agreed)	IFAD Team RDU IFAD Team SAEP Manager GCA Manager GCA Manager GIDC	RDU Conference Room
9:30 – 10.000-	GIZ			
10:00 – 10:30	GDB			
10:30 – 11:00	**GSDTF/IICA**			
12:00 1:30PM	**Lunch**			
1:30 pm – 2.00 pm	Meeting with Ministry wrf Labour	Wage Rates Labour Relations Labour Laws	- Labour Commissioner Dr. Curlan Gilchrist – Advisor Labour Department NES Representative Selected Mambers - IFAD Team	Ministry of Labour Conference Rppm
Saturday June 29th 2024	IFAD teamwork	• Systematization and analysis of inputs from the field visits bilateral meetings and initial stakeholder consultation. • Arrangement of thematic working groups to advance the	IFAD Team	TBD

		mission Aide Memoire and inputs for the GEF and AF Project docs as per the mission ToRs. • Individual work to complete inputs for mission AM.		
Sunday 30th June	TBD			
Monday July 1st 2024	**Partnership Building, Co-financing** **9:00 am – 12:00pm** **1:30- 3:00** **GIDC**	• Bilateral meetings with key development partners that are designing / implementing complementary projects (FAO, UNEP, UNDP, WB, Chinese Mission, others). • Meetings with potential partners from government agencies, research institutions, NGOs, and the private sector - Discussion on collaboration opportunities and co-financing for project implementation.	IFAD Team RDU Team Input Suppliers Sandra Ferguson (NGO) Bureau of Stds Chamber of Commerce (Banks Credit Union, Belmont Estate Sandra Ferguson (NGO) IFAD Last Mile Project	Ministry of Agri Conference Room/RDU ?
Tuesday July 2nd 2024	**Field Visits –/ Women and Youth group** **9:00am**	Field visits and exchanges with farmers, cooperatives, community representatives / organizations and local government officials.	Youth in Agriculture Project – Westerhall, St. David GRENROP – St. David Who will take the lead, etc?	TBD
Wednesday July 3rd 2024	**Field Visits** **9:00am 3:00pm**	Field visits and exchanges with farmers, cooperatives, community representatives / organizations and local government officials.	IFAD, RDU	TBD
	IFAD Team Afternoon	meeting to revise internally the mission aide memoire and the ppt		TBD
Thursday July 4th 2024	**Mission closing session**	• Presentation of the mission AM by IFAD team. (technical closing session?) • Discussion with the counterparts, closing remarks and	- PS. Ministry of Finance (Mr. Mike Sylvester - PS Ministry of Economic Development – Ms. Merina Jessamy PS Ministry of Agriculture – Mr. Isaac	TBD

		reflections on the mission outcomes. • Next steps and follow-up actions for GEF and AF project preparation.	Bhagwan PS Ministry of Climate Resilience & Environment – Ms. Peron Johnson Dr. Stephen Fletcher - Manager RDU PS MIT Mervyn Haynes Manager GCA – Mr. Andrew Hastick	
Friday, July 5th , 2024	**Mission departure**			TBD
Monday July 1st 2024	Hurricane BERYL	Curfew from 01 July 00 to 02 July 00	All meetings cancelled	Hotel
Tuesday July 2nd 2024	Initial rapid assessment of damages caused	Joined the RDU in its initial assessment, drove around the island. Damage increasing the further north we went	Met with farmers in St Marks, St Patrick and St Andrew parishes	Field
Wednesday 3rd July 2024	AM: Meetings at RDU PM: Mission Departure	Wrap up meeting proceeded to the airport	At the request of the Government, the mission was concluded early, given that the conditions for further stakeholders' consultations were not met, and that the government had authorized all public and governmental offices to remain closed for three days for people to take care of their property and family	RDU

Revised agenda

List of people met virtually June 17-21 prior to first design mission

Date	Name/Surname	Age	Gender	Profession	Institution	Reason for meeting (type of stakeholder)
June 17, 2024	Mr. William Grainger -		Male	Chief Experience Officer	Grenada Cooperative Bank - GCB (Commercial Bank)	Financial Institution - To determine the programs available for farmers and fisherfolks and willingness to finance
June 17, 2024	Ms. Samica Roberts -		Female	Product /Info Lead	Grenada Cooperative Bank - GCB (Commercial Bank)	Financial Institution - To determine the programs available for farmers and fisherfolks and willingness to finance
June 18, 2024	Peter Compton - RBGD		Male	Credit Manager/ Climate Officer	Republic Bank Grenada Ltd	Financial Institution - To determine the programs available for farmers and fisherfolks and willingness to finance
June 18, 2024	Mr Kurt McFarlene		Male		Republic Bank Grenada Ltd	Financial Institution - To determine the programs available for farmers and fisherfolks and willingness to finance
June 19, 2024	Ms. Isabelle Slinger		Female	Accountant	The Tower Estate	Agri-Business- Access to finance challenges and ease
June 19 2024	Ms Kira Thomson Aird		Female	Director	Renwick Thompson	Agri-business: Logistics and handling company, export of agriculture fresh produce from the airport
June 20, 2024	Ms. Sandra Ferguson		Female	President	Agency for Rural Transformation - ART	NGO- To what extent climate finance is accessible by rural communities and what is required for them to benefit
June 20 2024	Ms Alicia Serrao		Female	Special Projects Manager	Belmont Estate	Private sector – Organic producer of cocoa, nutmeg, spices and manufacturer of chocolate and other byproducts. Also grows nutmeg and banana.
June 21, 2024	Ms. Marion Geiss -		Female	Project Manager - GCREWS Project focusing on water supply	GIZ	GCF Accredited entity in Grenada- What challenges are encountered during the implementation of the G-Crews Project and associated benefits for agriculture and water management
June 21	Mr Reginald Andall		Male	Country Director	CARDI	CARDI, agriculture research organization, presence in Grenada, conducting research on various crops, also working with farmers. Has two research stations in Grenada

List of people met during the design mission 24-28 June (in person)

Date	Name/Surname	Age	Gender	Profession	Institution	Reason for meeting (type of stakeholder)
June 24, 2024	Nicole Clark		Female	Permanent Secretary	Ministry of Implementation and Transformation (MIT)	Government of Grenada- How will the Government of Grenada create the enabling environment to facilitate the project success and what are the government expectations
June 24, 2024	Hon. Lennox J Andrews		Male	Minister	Ministry of Economic and Sustainable Development	Government of Grenada- How will the Government of Grenada will create the enabling environment to facilitate the project success and what are the government expectations
June 24, 2024	Isaac Bhagwan		Male	PS	Ministry of Agriculture	Government of Grenada- How will the Government of Grenada create the enabling environment to facilitate the project success and what are the government expectations
June 24, 2024	Merina Jessimay		Female	PS	Ministry of Economic	Government of Grenada- How will the Government of Grenada create the enabling environment to facilitate the project success and what are the government expectations
June 24, 2024	Hon. Hon. Kerryne Z. James		Female	Minister	Minister of Climate Resilience	Government of Grenada- How will the Government of Grenada create the enabling environment to facilitate the project success and what are the government expectations
June 24, 2024	Hon Roderick St. Clair		Male	Senator for Agriculture		Member of parliament- How will the intervention increase production and success for the agriculture sect and how can there be improvement in the uptake of youths involvement in agriculture an need for improvement in the enabling environment
June 24, 2024	Hon Roderick St. Clair – Senator for Agriculture & Manager GCNA		Males	General Managers (GCNA)-	GCNA	Nutmeg Association- To what extent will the project impact farmers? How will the farmers benefit from the intervention? It must be all about the farmers.
June 25, 2024	Mr. Andrew Hastick		Males	General Managers (GCA)- Mr. Andrew Hastick	GCA	Cocoa Association- To what extent will the project impact farmers? How will the farmers benefit from the intervention? It must be all about the Coca farmers.

Date	Name/Surname	Age	Gender	Profession	Institution	Reason for meeting (type of stakeholder)
June 25, 2025	Dr. Stephen Fletcher		Males	General Manager - SAEP/RDU	MEPD	Implementing Agency- What is the role of the SAEP/RDU in the implementation of the project and the complementarity of this project with other projects implemented by the government
June 25, 2025	Mr. Mervyn Haynes		Males	Director - Department of Economic Sustainable Development	MEPD	Government Department- What is the role of the DESD in the implementation of the project and how is this intervention aligned with government's priority and will lead to sustainable development?
June 26, 2025	Ms. Aria St. Louis		Female	Chief Environmental Officer - Ministry of the Environment	MCRE	Government Department- What is the role of the Ministry of Climate Change and the Environment in the implementation of the project and how is this intervention aligned with government's environmental commitment
June 26, 2024	PS Perron Johnson		Female	GCF-NDA	MCRE	Government Department
June 27, 2024	Ms. Lauren St. Louis		Female	(Chief Extension Officer MOA)	MoA	Government of Grenada- How will the Government of Grenada create the enabling environment to facilitate the project success and what are the government and project expectations? To what extent will the project benefit farmers and fisherfolks?
June 27, 2024	Ms. Therisa Marryshow		Female	Gender Specialist	MSD	Ministry of Social Development- Government of Grenada - Need for women involvement in this intervention based on their vulnerabilities, need for their economic growth and development
June 28, 2024	Ms Elaine Henry McQween		Female	Gender Specialist	MSD	Ministry of Social Development- Government of Grenada -
June 28th, 2024	Mr. Andrew Hastick GCA and GCA Tean Value Chain Consultant		Male	GCA staff		Cocoa Association- Information and Data required to inform Mapping of Cocoa Value Chain
June 28th	Labour Commissioner, Dr. Curlan Gilchrist – Advisor Labour Department		Female			Ministry wrf Labour-Wage Rates, Labour Relations, Labour Laws

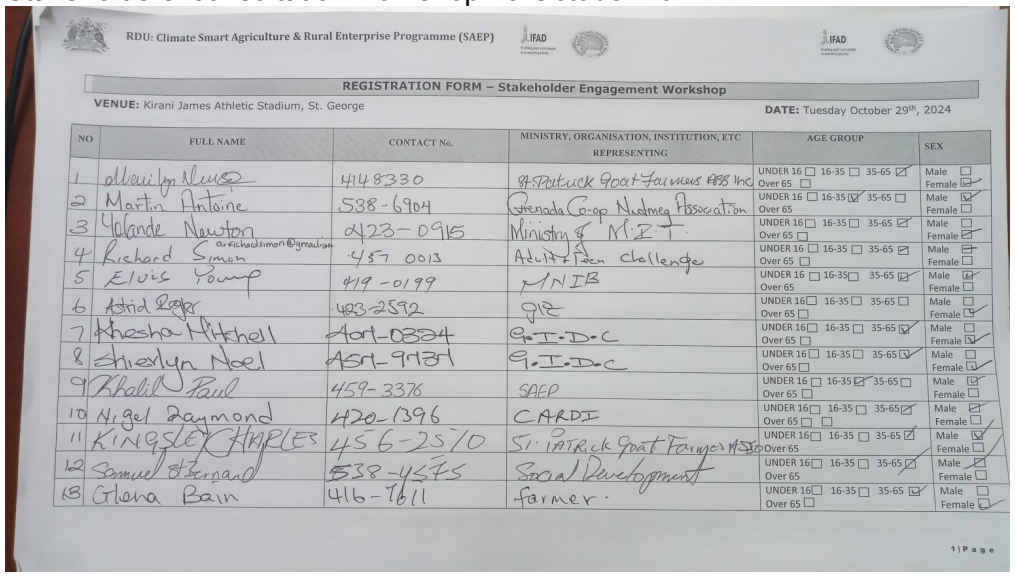
International Fund for agriculture Development (IFAD) & Food and Agriculture Organization (FAO)
Rural Development Unit (RDU) within the Ministry of Economic Development - Adaptation Fund - ENRICH
Agenda for the Validation mission 28 October – 01 November 2024

Dates	**Activities**	**Objectives & Participants**	**Participants contact details**	**Venue**
Monday October 28th 2024	**Internal meeting** **9:00am- 10:30am**	Focus will be placed on reviewing the schedule, organizational aspects	RDU / ENRICH Project Team / IFAD Team (all)	RDU Conference Room & Online – Hybrid meeting
	Meeting with Minister **11:00am to 12:00pm**	Discussion on upcoming programme ENRICH	Minister Andrews, 2 Permanent Secretary: Ms Jessamy EPD, Mr Isaac Bhagwan, SAEP HRD ENRICH: IFAD and FAO Personnel	Minister Office
	Lunch 12:00pm to 1:00pm			
	Courtesy call with key ministries: **MEPD, MoA, MCRE, MoIT** **1:00pm to 3:00pm**	An official courtesy call with key ministries	Key focal point: MCRE - PS Peron Johnson/Mr. Titus Antoine, MoIT-Ms. Nicole Clark, MEPD - Mr Mervin Haynes, SAEP: HRD, CSA Cood, Tech Asst	**RDU Conference Room**
Tuesday October 29th 2024	**Stakeholders workshop** **09:00am -12:00pm**	**Government departments, technical staff:** MEPD, MoA, MCRE, MoIT, Ministry of Infrastructure, NAWASA, MoSD/Gender, Mirabeau Farm School: TAMCC, **Private sector actors:** GIDC, GDB, Belmont Estate, Crayfish Bay, Tri island chocolates, Grenada Coop Bank, MNIB, **Carriacou invitees:** CFA- Jahshaka Andrew/Linda Mathurine CFF: Joshua (VP). **Producers' organization:** GCA, GCNA, local PA? **Civil society actors**: GNOW, GOAM, SPECTO, SPYO, SADO, GRENROP, ART, MOY, NEFO, , St. John & St. Mark Small ruminants, St. John Fishermen organization. St. Patrick small ruminants, St Patrick fishermen organization	RDU Personnel: Shiphrah Forsyth Williams, Kelian Williams and Shayan Paryag Present. of the ENRICH pgm, Q&A, feedback GCB: wgrainger@grenadaco-opbank.com GIDC: rtheodore@grenadaidc.com GCA: Mr. Andrew Hastick andrewhastick@gmail.com GCNA: Mr. Roderick St. Clair – Senator Agric iagdo01@gmail.com artngognd@gmail.com shadelcompton@gmail.com asbelmontestate@gmail.com info@thetowerestategrenada.com marion.geiss@giz.de astrid.regler@giz.de Ms Elaine Henry McQueen spongenfam@gmail.com spo@mosd.gov.gd Theresa Marryshow: email? Newlo check website Charles Akeza @fao.org Gregorydelsol@iica.net tthompson@pislmsids.org (soilcare project GEF/UNEP).	**Stadium/PWU Conference room** NB: Need to identify and book a venue For 40-50 people Breakfast 0830 Lunch 1200 Official invites to be sent on or before Wednesday Noon

		Research / Training institutions: CARDI, UWI, NEWLO, SGU: livestock, WINDREF, Livestock consultancy GD, TLP. **Partners**: UNDP, UNEP, FAO, GIZ, IICA, Daniel Lewis, Ms. Pascal; Cocoa Producers; Youth Organizations CSA Youth – 5 persons; EBD Youth – 4 persons	Samuel Andrew TAMCC/Mirabeau farm school samuela@tamcc.edu.gd Taratfrancis@gmail.com (CAEPNet – Youth) CARDI gthomas-barry@cardi.org or Grenadacardi@gmail.com thelivestockconsultancygd@gmail.com	The Government of Grenada through the RDU is hosting a Stakeholder Workshop on ENRICH
	Lunch 12:00pm to 1:00pm			
Tuesday October 29th 2024	**Meeting on institutional arrangements + participation and involvement of extension staff – 2:00pm-3:30pm**	MoA, Chief Extension Officer, Ms Lauren St Louis MoA PS level – PS Bhagwan MIT – PS + OFP – Nicole Clarke EPD: Mervin Haynes, possibly Ms Jessamy?, RDU	RDU : HRD, Tech Cood, CSA Cood. Isaac Bhagwan <ps@moa.gov.gd> lauren.stlouis@moa.gov.gd laurenstlouis@gmail.com sto4@moit.gov.gd ps@moit.gov.gd	**RDU Conference Room**
Wednesday October 30th 2024	**Deep dive sub-component 1.1 +1.2: Drought + Hurricane resistant infrastructure + Sustainable Landscape Management and Nature-Based Solutions in Cocoa AF syst.** **09:00am-12:00pm**	MoA, land use and water, forestry, **irrigation**, NAWASA, MCRE landscape approach Meteorological Office (Mr Timer) – Airport Authority MoIT, gef focal point, RDU Grenada Bureau of Standards, Produce Chemist Lab	CSA Cood, Project Engineer, GIS Technician, tsmith@nawasa.gd or wcox@nawasa.gd celia.edwards@moa.gov.gd kenton.fletcher@gmail.com joseph.noel@moa.gov.gd dillon.palmer@moa.gov.gd tthompson@pislmsids.org Mr Timer Airport Authority – M robert_medford@spiceisle.com sto4@moit.gov.gd	RDU Conference Room
	Deep dive sub-component 3.1 +3.2: Resilience Governance Framework and Risk Management + knowledge management Climate action platform **1:00pm -4:00pm**	MCRE climate change unit adaptation MEPD focal point Adaptation fund, Land titling? MoA climate change AFOLU (unit in MoA), land use division MITI GEF focal point, RDU Meteorological Office (Mr Timer) – Airport Authority FAO readiness project GCF	Marketing, M&E Sp, Tech Cood, HRD, CSA Cood. Ms. Aria St. Louis hodenv@cre.gov.gd lauren.stlouis@moa.gov.gd sto4@moit.gov.gd Kenton Fletcher Land Use and interface meteorology kenton.fletcher@gmail.com Akeza.Charles@fao.org Mr. Leon Charles – National Climate Change Committee – UNFCC Negotiations Lead? caa@spiceisle.com Mr Timer Airport Authority/met office email?	RDU Conference Room
Thursday October 31st 2024	**Deep dive sub-component 2.1: Adoption of Climate-Resilient technologies /**	**Ministries** MEPD, planning, MOY MOA: Agronomy, Extension, Farmer	RDU: CSA Component Coordinator, Technical Coordinator, Project Engineer, GIS Technician. MoA Chief Agronomist allison.haynes@moa.gov.gd	RDU Conference Room

	practices + complementary off farm inv. **Separate mtg: ET/VST BP/VST push** **09:00am-11:00am**	Associations RDU: UWI, CARDI, **<u>Youth and women group</u>** EBD and CSA Beneficiaries, GNOW, **<u>Other Institutions</u>** GIDC, NEWLO, GNTA, TAMCC Grenada produce laboratory, Grenada Science Council. (tech/innovation),	Chief Extension Officer Lauren St. Louis lauren.stlouis@moa.gov.gd Samuel Andrew TAMCC/Mirabeau farm school samuela@tamcc.edu.gd gthomas-barry@cardi.org /Grenadacardi@gmail.com Taratfrancis@gmail.com (CAEPNet – Youth)	
	Lunch 12:00pm to 1:00pm			
	Deep dive sub-component 2.2: Strengthening Market Access + dev along the Cocoa VC **1:00pm - 4:00pm**	MoA value chain, (WHO) EPD? Trade and markets? GCA? Private sector actors active cocoa/chocolate MOIT gef focal point, RDU	RDU: HRD, CSA Cood, Marketing Officer Lauren St. Louis MoA rep on cocoa board lauren.stlouis@moa.gov.gd Ms Alison Haynes (head propagation unit) – alisonhaynes@yahoo.com haspat@yahoo.com Chief Agronomist Mr. Andrew Hastick, GCA sto4@moit.gov.gd **Min of FA & Trade:** Mr. Ernie James – Senior Trade Officer /Director of Trade erniejames2000@gmail.com gcnagm@gmail.com	RDU Conference Room
Friday November 1st 2024	**Field visit – St Andrew and St Patrick area** **09:00am-4:00pm**	M&E will schedule: Belmont Estate/ Cray fish Bay – to discuss post Beryl challenges and ENRICH Grenada Chocolate Factory Irrigation Sites: Pearls, Conference (consult Lee on best areas to visit) Craig Paul: Craft de Spice Lauren Gairy – EBD Beneficiary Backyard gardening – contact Delsol/CAEP NET/Kenly on any innovative gardeners		Field Day
Monday November 4th 2024	**Wrap up Meeting** **9:00am-10:00am**	Remotely the following week discuss the findings and follow up	RDU and ENRICH Team	RDU Conference room

Stakeholders' consultation workshop 29 October 2024



RDU: Climate Smart Agriculture & Rural Enterprise Programme (SAEP)

REGISTRATION FORM – Stakeholder Engagement Workshop

VENUE: Kirani James Athletic Stadium, St. George **DATE:** Tuesday October 29th, 2024

NO	FULL NAME	CONTACT No.	MINISTRY, ORGANISATION, INSTITUTION, ETC REPRESENTING	AGE GROUP	SEX
1	Alverilyn Nelson	4148330	St Patrick Goat Farmers Assn Inc	UNDER 16 ☐ 16-35 ☐ 35-65 ☑ Over 65 ☐	Male ☐ Female ☑
2	Martin Antoine	538-6904	Grenada Co-op Nutmeg Association	UNDER 16 ☐ 16-35 ☑ 35-65 ☐ Over 65	Male ☑ Female ☐
3	Yolande Newton	423-0915	Ministry of M.I.T.	UNDER 16 ☐ 16-35 ☐ 35-65 ☑ Over 65 ☐	Male ☐ Female ☑
4	Richard Simon	457 0013 (a.richardsimon@gmail.com)	Adult + Teen challenge	UNDER 16 ☐ 16-35 ☐ 35-65 ☑ Over 65 ☐	Male ☐ Female ☐
5	Elvis Young	419-0199	NIB	UNDER 16 ☐ 16-35 ☐ 35-65 ☑ Over 65	Male ☑ Female ☐
6	Astrid Regar	423-2592	GIZ	UNDER 16 ☐ 16-35 ☐ 35-65 ☐ Over 65 ☐	Male ☐ Female ☑
7	Aneisha Mitchell	407-0824	G.I.D.C	UNDER 16 ☐ 16-35 ☐ 35-65 ☑ Over 65 ☐	Male ☐ Female ☑
8	Shirelyn Noel	457-9737	G.I.D.C	UNDER 16 ☐ 16-35 ☐ 35-65 ☑ Over 65 ☐	Male ☐ Female ☑
9	Khalil Paul	459-3376	SAEP	UNDER 16 ☐ 16-35 ☑ 35-65 ☐ Over 65 ☐	Male ☑ Female ☐
10	Nigel Raymond	420-1396	CARDI	UNDER 16 ☐ 16-35 ☐ 35-65 ☑ Over 65 ☐ ☐	Male ☑ Female ☐
11	KINGSLEY CHARLES	456-2510	St. Patrick Goat Farmers Assn	UNDER 16 ☐ 16-35 ☐ 35-65 ☑ Over 65	Male ☑ Female ☐
12	Samuel Bernard	538-4575	Social Development	UNDER 16 ☐ 16-35 ☐ 35-65 ☑ Over 65	Male ☑ Female ☐
13	Chena Bain	416-7611	farmer.	UNDER 16 ☐ 16-35 ☐ 35-65 ☑ Over 65 ☐	Male ☐ Female ☑

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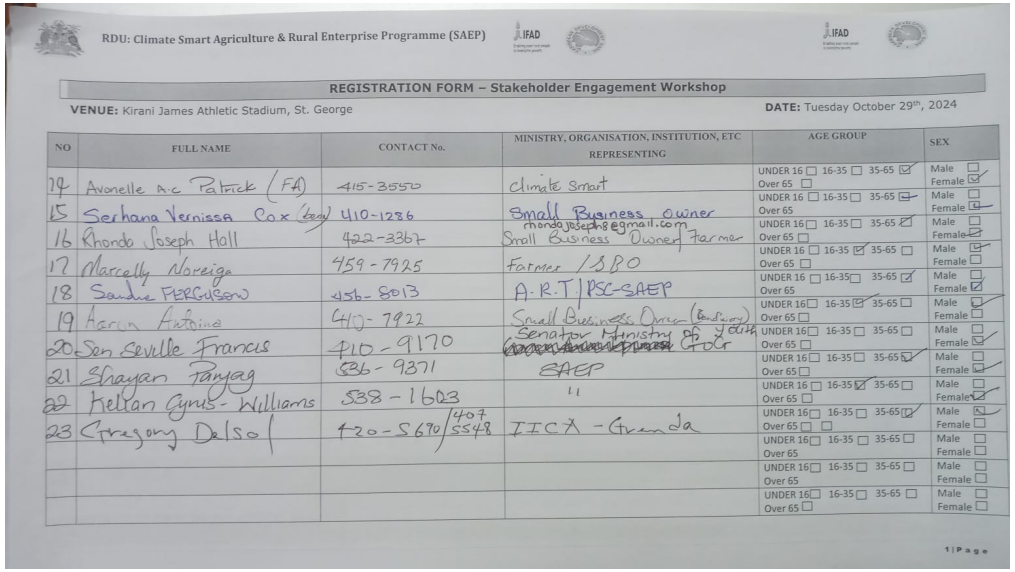

RDU: Climate Smart Agriculture & Rural Enterprise Programme (SAEP)

REGISTRATION FORM – Stakeholder Engagement Workshop

VENUE: Kirani James Athletic Stadium, St. George **DATE:** Tuesday October 29th, 2024

NO	FULL NAME	CONTACT No.	MINISTRY, ORGANISATION, INSTITUTION, ETC REPRESENTING	AGE GROUP	SEX
14	Avonelle A.C Patrick (FA)	415-3550	climate Smart	UNDER 16 ☐ 16-35 ☐ 35-65 ☑ Over 65 ☐	Male ☐ Female ☑
15	Serhana Vernissa Cox (Lady)	410-1286	Small Business Owner	UNDER 16 ☐ 16-35 ☐ 35-65 ☐ Over 65 ☐	Male ☐ Female ☐
16	Rhonda Joseph Hall	422-3367	Small Business Owner/ farmer (rhondajoseph8@gmail.com)	UNDER 16 ☐ 16-35 ☐ 35-65 ☑ Over 65 ☐	Male ☐ Female ☑
17	Marcella Noreiga	459-7925	Farmer / SBO	UNDER 16 ☐ 16-35 ☑ 35-65 ☐ Over 65 ☐	Male ☐ Female ☐
18	Sandie FERGUSON	456-8013	A.R.T/PSC-SAEP	UNDER 16 ☐ 16-35 ☐ 35-65 ☑ Over 65	Male ☐ Female ☑
19	Aaron Antoine	410-7922	Small Business Owner (Tailoring)	UNDER 16 ☐ 16-35 ☑ 35-65 ☐ Over 65 ☐	Male ☐ Female ☐
20	Sen Seville Francis	410-9170	Senator Ministry of Youth [illegible] Gdr	UNDER 16 ☐ 16-35 ☐ 35-65 ☐ Over 65 ☐	Male ☐ Female ☑
21	Shayan Panyag	536-9371	SAEP	UNDER 16 ☐ 16-35 ☐ 35-65 ☑ Over 65 ☐	Male ☐ Female ☑
22	Kellan Cyrus-Williams	538-1603	"	UNDER 16 ☐ 16-35 ☑ 35-65 ☐ Over 65 ☐	Male ☐ Female ☑
23	Gregory Delsol	420-5670/407 5548	IICA - Grenada	UNDER 16 ☐ 16-35 ☐ 35-65 ☑ Over 65 ☐	Male ☑ Female ☐
				UNDER 16 ☐ 16-35 ☐ 35-65 ☐ Over 65	Male ☐ Female ☐
				UNDER 16 ☐ 16-35 ☐ 35-65 ☐ Over 65	Male ☐ Female ☐
				UNDER 16 ☐ 16-35 ☐ 35-65 ☐ Over 65 ☐	Male ☐ Female ☐

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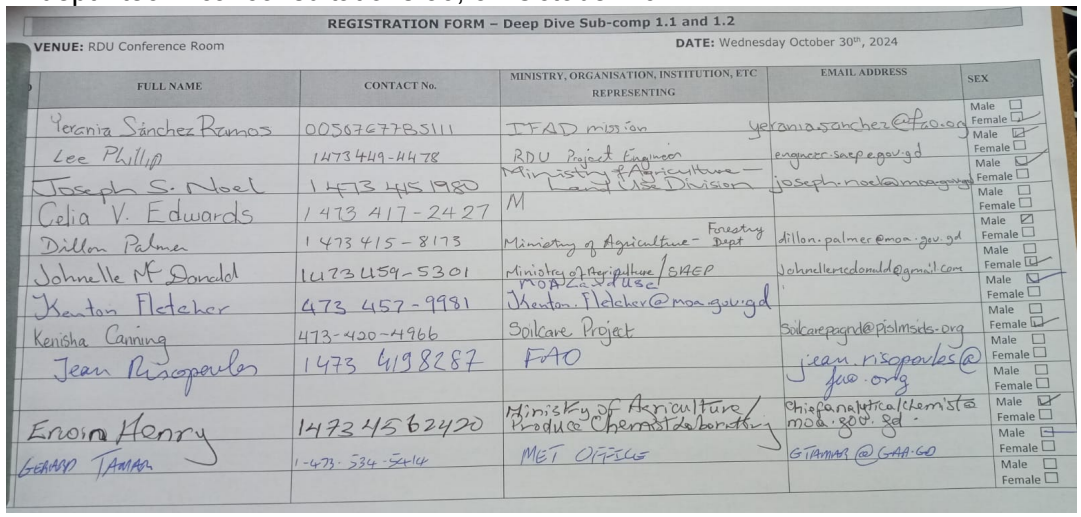
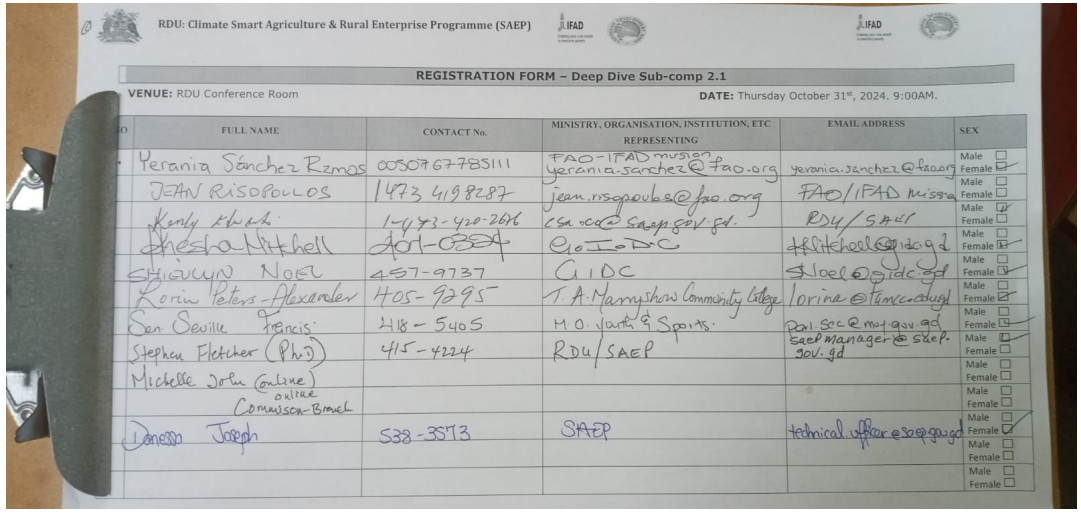
In-depth technical consultations 30, 31 October 2024



REGISTRATION FORM – Deep Dive Sub-comp 1.1 and 1.2

VENUE: RDU Conference Room **DATE:** Wednesday October 30th, 2024

FULL NAME	CONTACT No.	MINISTRY, ORGANISATION, INSTITUTION, ETC REPRESENTING	EMAIL ADDRESS	SEX
Yerania Sánchez Ramos	0050767785111	IFAD mission	yerania.sanchez@fao.org	Male ☐ Female ☐
Lee Phillip	1473449-4478	RDU Project Engineer	engineer.saep@gov.gd	Male ☑ Female ☐
Joseph S. Noel	1473 415 1980	Ministry of Agriculture — Land Use Division	joseph.noel@moa.gov.gd	Male ☐ Female ☐
Celia V. Edwards	1473 417-2427	M		Male ☐ Female ☐
Dillon Palmer	1473 415-8173	Ministry of Agriculture - Forestry Dept	dillon.palmer@moa.gov.gd	Male ☑ Female ☐
Johnelle M. Donald	1473459-5301	Ministry of Agriculture / SAEP MOA/LU Division	Johnelleredonald@gmail.com	Male ☐ Female ☑
Kenton Fletcher	473 457-9981	Kenton.Fletcher@moa.gov.gd		Male ☑ Female ☐
Kenisha Canning	473-420-4966	Soilcare Project	Soilcarepcpmd@pislmsids.org	Male ☐ Female ☑
Jean Risopoulos	1473 4198287	FAO	jean.risopoulos@fao.org	Male ☐ Female ☐
				Male ☐ Female ☐
Erroin Henry	1473 456 2420	Ministry of Agriculture / Produce Chemist Laboratory	chiefanalytical/chemist@moa.gov.gd	Male ☑ Female ☐
GERARD TAMARA	1-473-534-5414	MET OFFICE	GTAMARA@GAA.GD	Male ☐ Female ☐
				Male ☐ Female ☐



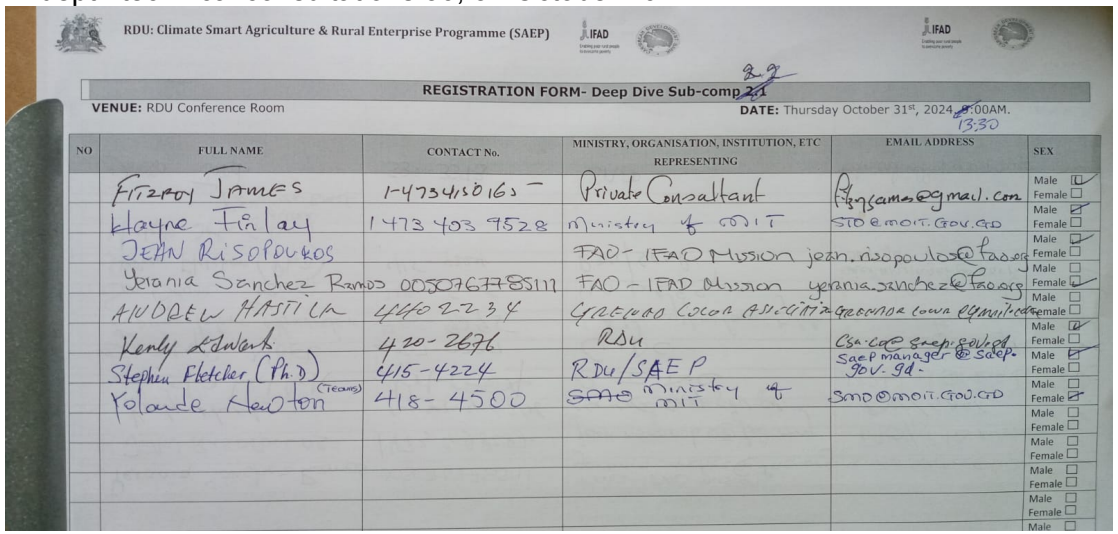
RDU: Climate Smart Agriculture & Rural Enterprise Programme (SAEP) IFAD IFAD

REGISTRATION FORM – Deep Dive Sub-comp 2.1

VENUE: RDU Conference Room **DATE:** Thursday October 31st, 2024. 9:00AM.

FULL NAME	CONTACT No.	MINISTRY, ORGANISATION, INSTITUTION, ETC REPRESENTING	EMAIL ADDRESS	SEX
Yerania Sánchez Ramos	0050767785111	FAO-IFAD mission yerania.sanchez@fao.org	yerania.sanchez@fao.org	Male ☐ Female ☑
JEAN RISOPOULOS	1473 4198287	jean.risopoulos@fao.org	FAO/IFAD Mission	Male ☐ Female ☐
Kenly Hunte	1-473-420-2696	csa.co@saep.gov.gd	RDU/SAEP	Male ☑ Female ☐
Shesha-Mitchell	401-0854	GIDC	shelitchell@gidc.gd	Male ☐ Female ☐
SHIRLYN NOEL	457-9737	GIDC	snoel@gidc.gd	Male ☐ Female ☐
Korin Peters-Alexander	405-9295	T.A. Marryshow Community College	lorina@tamcc.edu.gd	Male ☐ Female ☐
Sen Seville Francis	418-5405	M.O. Youth & Sports.	Pol.soc@myg.gov.gd	Male ☐ Female ☐
Stephen Fletcher (PhD)	415-4224	RDU/SAEP	saepmanager@saep.gov.gd	Male ☐ Female ☐
Michelle John (online) online Commission Brunel				Male ☐ Female ☐
				Male ☐ Female ☐
Janessa Joseph	538-3573	SAEP	technical.officer@saep.gov.gd	Male ☐ Female ☑
				Male ☐ Female ☐
				Male ☐ Female ☐

In-depth technical consultations 30, 31 October 2024



RDU: Climate Smart Agriculture & Rural Enterprise Programme (SAEP)

REGISTRATION FORM- Deep Dive Sub-comp 3.1

VENUE: RDU Conference Room

DATE: Thursday October 31st, 2024 8:00AM. 13:30

NO	FULL NAME	CONTACT No.	MINISTRY, ORGANISATION, INSTITUTION, ETC REPRESENTING	EMAIL ADDRESS	SEX
	FITZROY JAMES	1-473-415-0163	Private Consultant	fitzjames@gmail.com	Male ☑ Female ☐
	Kayne Finlay	1473 403 9528	Ministry of COMIT	STD@MOIT.GOV.GD	Male ☑ Female ☐
	JEAN RISOPOULOS		FAO - IFAD Mission	jean.risopoulos@fao.org	Male ☑ Female ☐
	Yerania Sanchez Ramos	0050767785111	FAO - IFAD Mission	yerania.sanchez@fao.org	Male ☐ Female ☑
	ANDREW MASTICA	4402-234	GRENADA COCOA ASSOCIATION	GRENADACOCOA@GMAIL.COM	Male ☐ Female ☐
	Kenly Edwards	420-2676	RDU	CSA.CAE@saep.gov.gd	Male ☑ Female ☐
	Stephen Fletcher (Ph.D)	415-4224	RDU/SAEP	Saep manager@saep.gov.gd	Male ☑ Female ☐
	Yolande Newton (Teams)	418-4500	~~SAEP~~ Ministry of COMIT	SND@MOIT.GOV.GD	Male ☐ Female ☑
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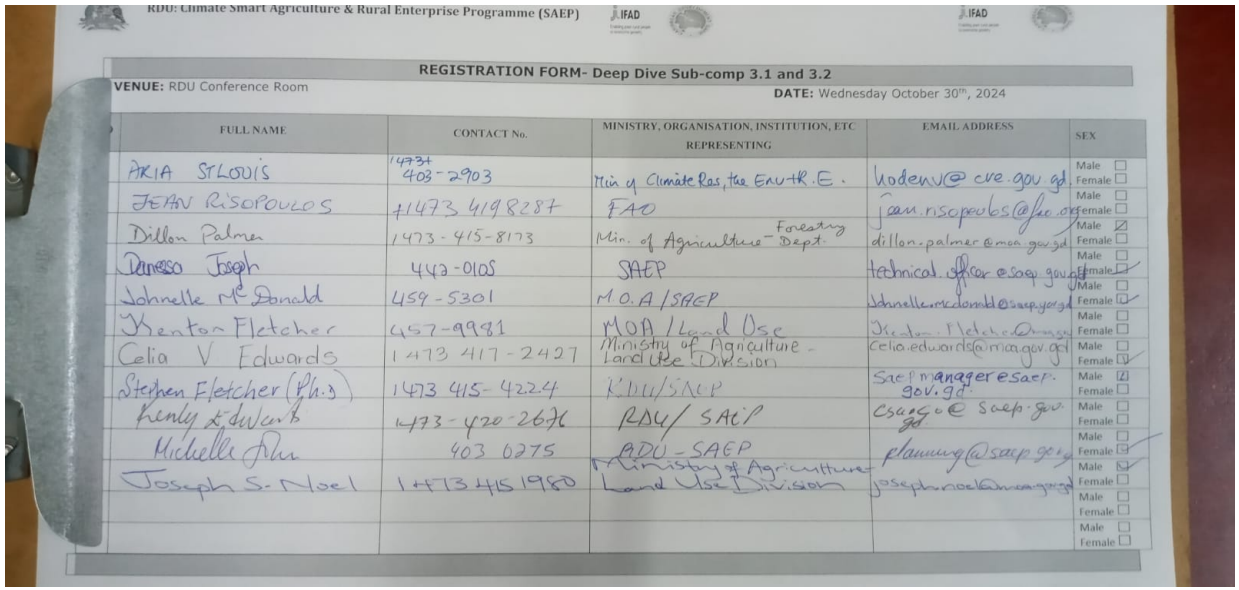


RDU: Climate Smart Agriculture & Rural Enterprise Programme (SAEP)

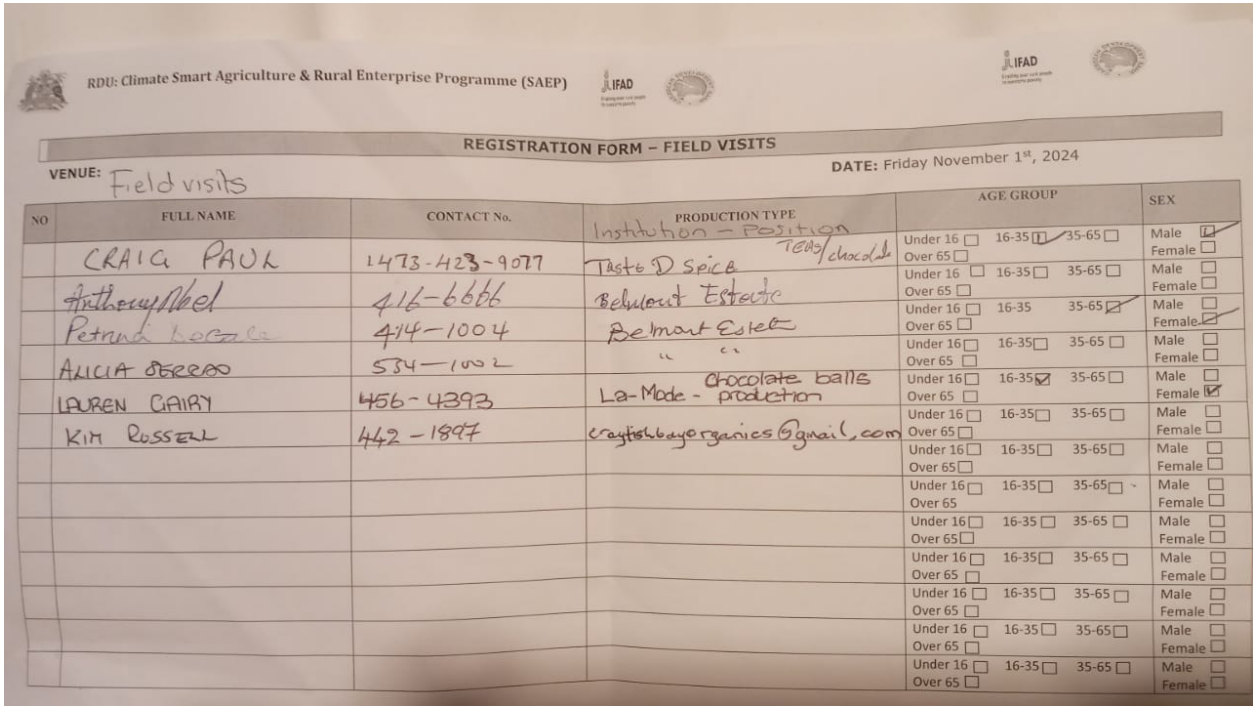
REGISTRATION FORM- Deep Dive Sub-comp 3.1 and 3.2

VENUE: RDU Conference Room

DATE: Wednesday October 30th, 2024

FULL NAME	CONTACT No.	MINISTRY, ORGANISATION, INSTITUTION, ETC REPRESENTING	EMAIL ADDRESS	SEX
AKIA STLOUIS	1473 403-2903	Min of Climate Res, the Env+R.E.	kodenv@cve.gov.gd	Male ☐ Female ☐
JEAN RISOPOULOS	+1473 419 8287	FAO	jean.risopoulos@fao.org	Male ☐ Female ☐
Dillon Palmer	1473-415-8173	Min. of Agriculture - Forestry Dept.	dillon.palmer@moa.gov.gd	Male ☑ Female ☐
Vanessa Joseph	443-0105	SAEP	technical.officer@saep.gov.gd	Male ☐ Female ☑
Johnelle McDonald	459-5301	M.O.A/SAEP	johnelle.mcdonald@saep.gov.gd	Male ☐ Female ☑
Kenton Fletcher	457-9981	MOA/Land Use	Kenton.Fletcher@moa.gov.gd	Male ☐ Female ☐
Celia V Edwards	1473 417-2427	Ministry of Agriculture - Land Use Division	celia.edwards@moa.gov.gd	Male ☐ Female ☑
Stephen Fletcher (Ph.D)	1473 415-4224	RDU/SAEP	Saep manager@saep.gov.gd	Male ☑ Female ☐
Kenly Edwards	1473-420-2676	RDU/SAEP	csa.cae@saep.gov.gd	Male ☐ Female ☐
Michelle John	403 0275	ADU - SAEP	planning@saep.gov.gd	Male ☐ Female ☑
Joseph S. Noel	1+473 415 1980	Ministry of Agriculture Land Use Division	josephnoel@moa.gov.gd	Male ☑ Female ☐
				Male ☐ Female ☐
				Male ☐ Female ☐
				Male ☐ Female ☐

Field visit 01 November 2024



RDU: Climate Smart Agriculture & Rural Enterprise Programme (SAEP)

REGISTRATION FORM – FIELD VISITS

VENUE: Field visits

DATE: Friday November 1st, 2024

NO	FULL NAME	CONTACT No.	PRODUCTION TYPE Institution – Position	AGE GROUP	SEX
	CRAIG PAUL	1473-423-9077	Taste D Spice Teas/chocolate	Under 16 ☐ 16-35 ☑ 35-65 ☐ Over 65 ☐	Male ☑ Female ☐
	Anthony Abel	416-6666	Belmont Estate	Under 16 ☐ 16-35 ☐ 35-65 ☐ Over 65 ☐	Male ☐ Female ☐
	Petrina Lorraine	414-1004	Belmont Estate	Under 16 ☐ 16-35 35-65 ☑ Over 65 ☐	Male ☐ Female ☑
	ALICIA OSBRAD	534-1002	" "	Under 16 ☐ 16-35 ☐ 35-65 ☐ Over 65 ☐	Male ☐ Female ☐
	LAUREN CAIRY	456-4393	La-Mode - Chocolate balls production	Under 16 ☐ 16-35 ☑ 35-65 ☐ Over 65 ☐	Male ☐ Female ☑
	KIM RUSSELL	442-1897	crayfishbayorganics@gmail.com	Under 16 ☐ 16-35 ☐ 35-65 ☐ Over 65 ☐	Male ☐ Female ☐
				Under 16 ☐ 16-35 ☐ 35-65 ☐ Over 65 ☐	Male ☐ Female ☐
				Under 16 ☐ 16-35 ☐ 35-65 ☐ Over 65	Male ☐ Female ☐
				Under 16 ☐ 16-35 ☐ 35-65 ☐ Over 65 ☐	Male ☐ Female ☐
				Under 16 ☐ 16-35 ☐ 35-65 ☐ Over 65 ☐	Male ☐ Female ☐
				Under 16 ☐ 16-35 ☐ 35-65 ☐ Over 65 ☐	Male ☐ Female ☐
				Under 16 ☐ 16-35 ☐ 35-65 ☐ Over 65 ☐	Male ☐ Female ☐
				Under 16 ☐ 16-35 ☐ 35-65 ☐ Over 65 ☐	Male ☐ Female ☐

Annex 3. Environmental and Social Management Plan

1. Introduction

The purpose of this ESMP is to ensure that the project has concrete plans and processes in place to avoid, minimize, and/or mitigate the risks and potentially adverse project-related environmental, social and climate change impacts during the its implementation. This document: (i) assesses and summarizes project-related risks and impacts; (ii) sets out the principles, rules, guidelines, and procedures to assess any potential risks and impacts of future subprojects and activities identified at a later time; and (iii) provides measures to reduce, mitigate, and/or offset those adverse risks and impacts from the project. Specific objectives of this ESMP are to:

- Assess the potential environmental, social, and climate-related risks and impacts of the project, and propose mitigation measures which will effectively address these risks and impacts;
- Establish clear procedures for the E&S risk screening and management for subprojects and other activities to be financed under the project;
- Specify appropriate roles and responsibilities and outline the necessary monitoring and reporting procedures:
- Determine the training, capacity building, and technical assistance needed to successfully implement the provisions of this ESMP;
- Establish the budget requirements for implementation of this ESMP.

This ESMP was prepared following a design mission where key stakeholders were met and consulted including relevant government ministries (Ministry of Economic Development, Planning, Tourism, Creative Economy, Culture, Agriculture and Lands, Forestry, Marine Resources and Cooperatives; Ministry of Climate Resilience, the Environment and Renewable Energy; Ministry of Mobilisation, Implementation and Transformation), the Rural Development Unit (RDU), the Grenada Cocoa Association (GCA) and the Grenada Cooperative Nutmeg Association (GCNA), etc. The mission was also able to conduct field visits to the SAEP beneficiaries and other rural stakeholders including farmers, agriculture research station, and Non-Governmental Organizations.

2. Project description

The overall objective of the project is to promote the climate resilience and adaptive capacity of Grenadian small-scale producers through climate-smart agriculture practices and resilient infrastructure in drought- and hurricane-prone landscapes. The project is structured around 3 main components as described below.

Project components:

Component 1: Drought & Hurricane Resilient Infrastructure for vulnerable communities

This sub-component is designed to bolster the resilience of agricultural infrastructure against the increasingly unpredictable and severe climatic conditions in Grenada, including extended drought periods and more intense and unpredictable hurricanes. The main activities of this component are:

i) Public Ponds Restoration and Water Infrastructure Rehabilitation.
ii) Farm Connections from public ponds and restored/rehabilitated water infrastructure to farms.
iii) Water Quality Assurance and Community Capacity Building.
iv) Constructing or upgrading storage facilities and pens, including warehouses and processing facilities, livestock and poultry pens, to withstand hurricane impacts.

Component 2: Climate-resilient innovations and investments for vulnerable rural households and their most vulnerable members

This component aims to equip farmers with the tools and knowledge needed to adapt to the

increasing impacts of climate change in Grenada. It focuses on two critical areas: promoting sustainable, climate-resilient agricultural practices and providing emergency support to restore agricultural value chains, especially following severe events like Hurricane Beryl. The main activities of this component are:

i) Promotion of climate-adaptive technologies and best practices to enhance the capacity of farmers in Grenada to adapt to the challenges posed by climate change.
ii) Capacity building in climate-smart agriculture (CSA) practices and entrepreneurial skills to enhance the resilience and productivity of Grenadian farmers and people.
iii) Financing investments: The project will support small farmers to adopt CSA practices, including home gardeners. There are three main types of financing investments to be supported by the project: (i) Cocoa rehabilitation; (ii) Resilience-enhancing technologies (CSA practices); and (iii) Emergency response packages.

Component 3: Climate resilient institutions and risk framework
This component will focus on capacity building at the policy and institutional levels regarding climate change adaptation and access to finance mechanisms. It will build institutional capacities to support the implementation, monitoring, reporting and verification of project's action within the framework of the Nationally Determined Contribution (NDC) and the National Adaptation Plan (NAP). The key activities of this component are:

i) Institutional capacity strengthening, implementation of policy measures and report climate action.
ii) Participation of MCRE and key institutions in regional and international fora to advocate on adaptation to climate change and access to finance mechanisms.
iii) Improving risk management platforms and tools linked to the project activities at regional and country level.

Targeting:
The project will target the entire country, encompassing Grenada, Petite Martinique and Carriacou. While the project is national in scope, some investments are prioritised following a climate rationale. Investments aimed to increase the climate resilience of key agri-food sector infrastructure, mainly water infrastructure, will take into consideration vulnerability assessments.

The project beneficiaries will be targeted according to their climate vulnerability and risk exposure. The main direct beneficiaries of the project will be smallholder farmers. Smallholder farmers that are particularly exposed to climate change will be prioritized, considering several established criteria such as steepness of land, lack of access to water in the dry period, climate sensitivity of crops, etc.

The beneficiaries targeted under this project will include stakeholders from strategic agri-food systems in Grenada, with particular attention to cocoa agroforestry systems and associated value chains. Cocoa is cultivated in mixed-crop family gardens using an agroforestry model that combines cocoa with nutmeg, spices, fruits, vegetables and other food crops.

3. Institutional and legal framework

3.1. National laws and regulations

Throughout the years several laws and regulation have been enacted and amended in Grenada in order to provide the necessary legislative framework for environmental management. The main ones are listed below: more recent ones are as follows:

- **Physical Planning and Development Control Act, No. 25, of 2002**, to make fresh provision for the control of physical development, to continue the Land Development

Authority, to require the preparation of physical plans for Grenada, to protect the natural and cultural heritage, and for related matters.

- **Litter Abatement Act of 1973**, which has been supplemented by the passage of the waste management Act of 2001, addressing pollution control and abatement of litter.
- **Waste Management Act No. 16 of 2001**, to provide for the management of waste in conformity with best environmental practices and related matters.
- **Solid Waste Management Act No. 11 of 1995**, which established the Solid Waste Management Authority, charged with the duty of developing the solid waste management facilities, and improving the coverage and effectiveness of solid waste storage, collection and disposal facilities of Grenada.
- **Beach Protection Amendment Act of 2009**, prohibiting sand mining in Grenada.
- **National parks and Protected Areas Act of 1991**, for the designation and maintenance of National Parks and protected areas.
- **Environmental Levy Act No. 5 of 1997**, an act to impose and collect Environmental Levy on certain goods and services.
- **Forest, Soil and Water Conservation Act of 1949,** amended by Act No. 12 of 1967 and Act No. 34 of 1984. An Act to make provision for the conservation of the forest, soil, water and other natural resources of Grenada.
- **Agricultural Fires Act of 1951**, an Act to regulate the setting of fires on agricultural land.
- **Plant Protection Act No. 19 of 1986**, amended by Act No. 3 of 2002 and Act No. 13 of 2005. An Act to provide for the control of pests injurious to plants, and to prevent the importation of plants and materials harmful to agriculture.
- **Pesticides Control Act No. 28 of 1973**, amended by act no. 88 of 1979. An act to provide for the control of the importation, sale, storage and use of pesticides, and for connected matters.
- **Water Quality Act No. 1 of 2005**, an Act to govern matters relating to the Quality of Water Intended for Human Consumption.
- **National Water and Sewerage Authority Act of 1990**, amended by Act No. 41 of 1991, Act No. 52 of 1991, Act No. 30 of 1992, Act No. 15 of 1995, Act No. 35 of 1996, Act No.23 of 2008. An Act to establish the National Water and Sewerage Authority as a corporate body; to make provision for the functions, powers and administration of the Authority, for the transfer to the Authority of the assets and liabilities of the Central Water Commission, and to provide for connected matters.
- **Fisheries Act of 1986**, which provides for the protection of the marine resources in Grenada.
- **National Trust Act** set up for the protection of the cultural heritage of Grenada.
- **Public Health Act of 1958** which establishes the Sanitary Authority to protect the public health through food hygiene standards, pollution policies, and maintenance of drainage channels.
- **Land Acquisition Act of 1945**, amended by Act No. 16 of 1991, Act No. 20 of 1998. An Act to authorise the acquisition of land for public purposes.
- **National Heritage Protection Act of 1990**, amended by SRO 22 of 2009. An Act to provide for the protection of Amerindian art work and Pre-Columbian artefacts and archaeological remains, and for connected matters.

All of these legislations have been playing important resource management roles, which, to

some extent, have contributed to the enhancement and conservation of the natural environment and the preservation of public health and safety in Grenada. However, only two of those legislations (the Waste Management Act No. 16 of 2001 and the Physical Planning and Development Control Act, No. 25, of 2002) include provisions for environmental impact assessment (EIA).

The Physical Planning and Development Control Act No. 25, of 2002 stands out for its overall responsibility for land use management in general. It makes provision for the control of physical development, to continue the Land Development Authority, to require the preparation of physical plans for Grenada, to protect the natural and cultural heritage, and for related matters. The Physical Planning and Development Authority (PPDA) is set up under the Act with regulatory powers over any development taking place in, on, under or over the land.

Part 4 of the Act makes provision for the preparation of Environmental Impact Assessments. According to the Act, the Authority (meaning the Physical Planning and Development Control Authority) can request an EIA in respect of any development application including application for approval in principle, if the proposed development could significantly affect the environment (Subsection 1). Section 25 (1) states that the Authority must not grant permission for the development of land pursuant to an application to which this section applies unless it has first taken the report on the EIA into account. The Act also includes a list of 18 different types of developments for which an environmental impact assessment is normally required. They are as follows:

- Hotels of more than fifty rooms.
- Subdivisions of more than ten lots.
- Residential development of more than twenty-five units.
- Any industrial plant which in the opinion of the Authority is likely to cause significant adverse environmental impact.
- Quarrying and other mining activities.
- Marinas.
- Land reclamation, dredging and filling of ponds.
- Airports, ports and harbours.
- Dams and reservoirs.
- Hydro-electric projects and power plants.
- Desalination plants.
- Water purification plants.
- Sanitary land fill operations, solid waste disposal sites, toxic waste disposal sites and other similar sites.
- Gas pipeline installations.
- Any development projects generating or potentially generating emissions, aqueous effluent, solid waste, noise, vibration or radioactive discharges.
- Any development involving the storage and use of hazardous materials.
- Any coastal zone development.
- Any development in wetlands, marine parks, national parks, conservation areas, environmental protection areas or other sensitive environmental areas.

Another important part of the Act is its provision for preparing physical plans for Grenada (Part III section 13). Such plans are expected to cater for the economic, social, cultural and environmental needs, as well as addressing critical and sometimes very sensitive land use problems.

3.2. Adaptation Fund's ESP

The Adaptation Fund's Environmental and Social Policy (ESP) is intended to ensure that in

furthering the Fund's mission of addressing the adverse impacts of and risks posed by climate change, projects and programmes supported by the Fund do not result in unnecessary environmental and social harms.

The policy requires that all projects be screened for their environmental and social impacts, that those impacts be identified, and that the proposed project be categorized according to its potential environmental and social impacts. Projects likely to have significant adverse environmental or social impacts that are for example diverse, widespread, and irreversible should be categorized as Category A. Projects with potential adverse impacts that are less adverse than Category A projects, because for example they are fewer in number, smaller in scale, less widespread, reversible or easily mitigated should be categorized as Category B. Those projects with no adverse environmental or social impacts should be categorized as Category C. Regardless in which category a specific project/programme is screened, all environmental and social risks shall be adequately identified and assessed by the implementing entity in an open and transparent manner with appropriate consultation. The policy is aimed at allowing for a variety of approaches. Implementing entities that use a different but functionally equivalent system of categorization can continue to use that system and still meet the requirements of the policy.

All projects supported by the Adaptation Fund are required to be designed and implemented to meet the following 15 environmental and social principles, although it is recognized that depending on the nature and scale of a project all of the principles may not be relevant to every project.

- ESP 1: Compliance with the Law
- ESP 2: Access and Equity
- ESP 3: Marginalized and Vulnerable Groups
- ESP 4: Human Rights
- ESP 5: Gender Equity and Women's Empowerment
- ESP 6: Core Labour Rights
- ESP 7: Indigenous Peoples
- ESP 8: Involuntary Resettlement
- ESP 9: Protection of Natural Habitats
- ESP 10: Conservation of Biological Diversity
- ESP 11: Climate Change
- ESP 12: Pollution Prevention and Resource Efficiency
- ESP 13: Public Health
- ESP 14: Physical and Cultural Heritage
- ESP 15: Lands and Soil Conservation

3.3. IFAD's SECAP

IFAD's Social, Environmental and Climate Assessment Procedures (SECAP) were approved by the Executive Board and became effective in 2015. They were updated in 2017 and 2021. These procedures define an improved course of action for assessing social, environmental and climate risks to enhance the sustainability of IFAD projects.
SECAP (i) helps IFAD to identify social, environmental and climate risks and impacts, and their significance, and determine the level of risk management required to address the risks and impacts associated with IFAD-supported investments; (ii) helps to identify opportunities to mainstream climate resilience, environmental sustainability, nutrition, gender equality and the empowerment of women, youth and other vulnerable groups into IFAD strategies and programming; (iii) supports borrowers/recipients/partners and IFAD in improving decision-making and promoting the sustainability of project and programme outcomes through ongoing stakeholder engagement; (iv) assist borrowers/recipients/partners in fulfilling their own international and national social, environmental and climate commitments; (v) ensures that

IFAD's practices are aligned with its own policies and the procedures of other multilateral financial institutions; and (vi) enables IFAD to continue accessing environmental and climate financing.

SECAP goes beyond avoiding risks and impacts to identify opportunities for maximizing development gains by mainstreaming environmental, social and climate issues throughout the project cycle. Clear procedures on mainstreaming IFAD's cross-cutting themes (youth, gender, environment and climate change, and nutrition) are an important element of SECAP. To this end, SECAP enables the Fund to: (i) analyse and provide information to strengthen the social, environmental and climate dimensions of projects and programmes; (ii) maximize positive social and environmental impacts, climate change adaptation and mitigation benefits; and (iii) strengthen social inclusion in decision-making and ownership of the environmental and social sustainability of projects.
SECAP is structured around 9 environmental, social and climate standards with clear objectives, scope of application and requirements:

- Standard 1: Biodiversity conservation
- Standard 2: Resource efficiency and pollution prevention
- Standard 3: Cultural heritage
- Standard 4: Indigenous peoples
- Standard 5: Labour and working conditions
- Standard 6: Community health and safety
- Standard 7: Physical and economic resettlement
- Standard 8: Financial intermediaries and direct investments
- Standard 9: Climate change

Detailed guidance is provided in 9 corresponding Guidance Notes (GN) with: (i) an introduction to each subject, (ii) key steps, roles and responsibilities, objectives and background, (iii) criteria for environmental screening in IFAD projects; (iv) potential mitigation and adaptation plans and measures for controlling adverse impacts, (v) monitoring project implementation. The SECAP manual also includes a 10th guidance note that provides an overview of the importance of IFAD's mainstreaming commitments and highlights entry points for promoting mainstreaming along the project cycle. IFAD's mainstreaming commitments are related to environmental sustainability, climate finance, gender equality, women and youth empowerment and improved nutrition.

All IFAD projects are subject to an environmental, social and climate risk screening, and are assigned a risk category of High, Substantial, Moderate or Low:

- Projects with a low risk category do not do not require any further analysis.
- Moderate Risk projects require and Environmental, Social and Climate Management Plan (ESCMP), indicating how potential risks and impacts can be avoided or mitigated.
- High or Substantial risk projects require an Environmental, Social and Climate Management Framework (ESCMF) or Environmental and Social Impact Assessment (ESIA). These should also incorporate an ESCMP. In addition to that thematic studies or plans can also be required for substantial and high-risk project depending on the risks identified. These can include a Resettlement Action Framework or Plan (RAF or RAP), Indigenous Peoples Plan (IPP), FPIC implementation Plan, Pesticide Management Plan (PMP), etc.

For further information, please visit: https://www.ifad.org/en/social-environment-assessment-procedures.

3.4. Alignment between SECAP and ESP

While the structure of IFAD's SECAP and the Adaptation Fund's ESP differ in terms of structure (9 standards vs. 15 principles), they are overall aligned in terms of substance. The following table demonstrates this alignment:

AF ESP Principles	IFAD SECAP Standards, Guiding Values and Principles
ESP 1 **Compliance with the Law:** Projects supported by the Fund shall be in compliance with all applicable domestic and international law.	SECAP requires that activities in the framework of the IFAD financed projects or programmes meet IFAD's safeguard policy guidance, comply with applicable national laws and regulations (labour, health, safety, etc.) and international laws and treaties, and the prohibited investment activities list produced by the International Finance Corporation is adhered to. Project design should review: (i) current national policies, legislation and legislative instruments governing environmental management health, gender and social welfare, climate change (mitigation and adaptation) and governance with their implementation structures, identify challenges, and recommend appropriate changes for effective implementation; (ii) all relevant international treaties and conventions on the environment, climate change, health, gender, labour and human rights to which the country is a signatory.
ESP 2 **Access and Equity:** Projects supported by the Fund shall provide fair and equitable access to benefits in a manner that is inclusive and does not impede access to basic health services, clean water and sanitation, energy, education, housing, safe and decent working conditions, and land rights. Projects should not exacerbate existing inequities, particularly with respect to marginalized or vulnerable groups.	Access and Equity is a cross-cutting issue in all the 9 SECAP standards. SECAP requires that projects and programmes ensure the participation of target groups and equitable distribution of benefits. When projects result in physical or economic displacement (affecting access and user rights to land and other resources), the borrower or grant recipient should obtain FPIC from the affected people, document stakeholder engagement and consultation process and prepare resettlement plans or frameworks. The documents must be disclosed in a timely and accessible manner at the QA or relevant implementation stage. **Standard 2 – Resource efficiency and pollution prevention** highlights that Sustainable management requires that people who are dependent on these resources are properly consulted, enabled to participate in development and share equitably in the benefits of that development, and indicates that IFAD promotes an integrated water resources management approach that seeks the coordinated development and management of water, land and related resources in order to maximize economic and social welfare in an equitable manner and without compromising the sustainability of ecosystems. **Standard 3 – Cultural Heritage** includes the following objective: promote the equitable sharing of benefits from the use of Cultural Heritage. **Standard 4 – Indigenous People** includes the following objective: ensure indigenous peoples obtain fair and equitable benefits and opportunities from supported activities in a culturally appropriate and inclusive manner. **IFAD's mainstreaming themes in the project cycle guidance note** highlights that projects should aim at Expanding women's economic empowerment through access to and control of productive assets and benefits.
ESP 3 **Marginalised and Vulnerable Groups:** Projects supported by the Fund shall avoid imposing any disproportionate adverse impacts on marginalized and vulnerable groups including children, women and girls, the elderly, indigenous people, tribal groups, displaced	Marginalized and Vulnerable Groups is a cross-cutting issue in all the 9 SECAP standards, as such groups are also the primary target of IFAD interventions. A robust SECAP process requires attention to social dimensions such as land tenure, community health, safety, labour, vulnerable and disadvantaged groups, and historical factors, particularly in relation to natural resource management. It not only looks at compliance (e.g. managing potential negative impacts), but expected positive impacts and ways to maximize opportunities. To assure a good contribution to the quality of SECAP, project design should assess the socio-economic and cultural profile, including key issues relating to disadvantaged or vulnerable

people, refugees, people living with disabilities, and people living with HIV/AIDS. In screening any proposed project, the implementing entities shall assess and consider particular impacts on marginalized and vulnerable groups.	groups, conflict, migration, employment and livelihoods. Consultation with communities and stakeholders must be maintained throughout the project lifecycle, especially in high-risk projects. For investment projects with a projected high sensitivity to climate hazards, IFAD requires a climate vulnerability analysis which can help to improve the targeting of investment actions to include the most vulnerable and least resilient target groups. Other IFAD policies that support and complement this principle are: Improving Access to Land Tenure Security Policy, Gender Equality and Women's Empowerment Policy, Engagement with Indigenous Peoples Policy, Targeting Policy, Youth Policy Brief, Climate Change Strategy, Rural Enterprise Policy, Rural Finance Policy, Private Sector Strategy.
ESP 4 **Human Rights:** Projects supported by the Fund shall respect and where applicable promote international human rights.	Human Rights is a cross-cutting issue in all the 9 SECAP standards. Among the Guiding Principles and Specific Requirements for IFAD's Social Environmental Climate Assessment Procedures (SECAP), is the principle to "*support the efforts of borrowers/recipients/ partners to respect human rights, avoiding infringement on any human rights and addressing adverse human rights risks and impacts caused by clients' business activities*".
ESP 5 **Gender Equality and Women's Empowerment:** Projects supported by the Fund shall be designed and implemented in such a way that both women and men (a) are able to participate fully and equitably; (b) receive comparable social and economic benefits; and (c) do not suffer disproportionate adverse effects during the development process.	Gender Equality and Women's Empowerment is a cross-cutting issue in all the 9 SECAP Standards. **IFAD's mainstreaming themes in the project cycle guidance note** provides an overview of the importance of IFAD's mainstreaming commitments (including gender equality, women and youth empowerment); highlights entry points for promoting mainstreaming along the project cycle; proposes the use of assessments which – even if they may be focused on risk assessment and management – are opportunities for mainstreaming; and provides an overview of inventories of key sources of data, tools, methods and approaches that have been found useful.
ESP 6 **Core Labour Rights:** Projects supported by the Fund shall meet the core labour standards as identified by the International Labour Organization.	Core Labour Rights is a cross-cutting issue in all the 9 Standards. A robust SECAP process requires attention to social dimensions such as land tenure, community health, safety, labour, vulnerable and disadvantaged groups, and historical factors, particularly in relation to natural resource management. One of the guiding values and principles for SECAP is to minimize adverse social impacts and incorporate externalities. Avoid and mitigate any potential adverse impacts on health and safety, labour and working conditions and well-being of workers and local communities. The requirements set out in **Standard 5 – Labour and working conditions** are designed to achieve the following objectives: (i) Promote direct action to foster decent rural employment; (ii) Promote, respect and realize fundamental principles and rights at work through preventing discrimination and promoting equal opportunity of workers; supporting freedom of association and the effective recognition of the right to collective bargaining; and preventing the use of child labour and forced labour; (iii) Protect and promote the safety and health of workers; (iv) Ensure projects comply with national employment and labour laws and international commitments; and (v) Leave no one behind by protecting and supporting workers in disadvantaged and vulnerable situations, including a special focus, as appropriate, on women workers, young workers, migrant workers, workers in the informal economy and workers with disabilities

ESP 7 **Indigenous People:** The Fund shall not support projects that are inconsistent with the rights and responsibilities set forth in the UN Declaration on the Rights of Indigenous Peoples and other applicable international instruments relating to indigenous peoples.	**Standard 4 – Indigenous People** is a cornerstone to IFAD's goal to design projects not only with the full, effective and meaningful participation of indigenous peoples but also in a manner that aligns with their distinct vision and development priorities, building sustainable partnerships with indigenous peoples. Standard 4 seeks to ensure that projects are designed and implemented in a way that fosters full respect for indigenous peoples and their human rights, livelihoods and cultural uniqueness as they define them. The need for the standard is an acknowledgement of a history of discrimination and exclusion of indigenous peoples that has limited or prevented them from directing the course of their own development and well-being. The requirements set out in Standard 4 are designed to achieve the following objectives: (vi) Promote indigenous people's ability to determine and develop priorities and strategies for exercising their right to development; (vii) Ensure that programming is designed in partnership with indigenous peoples, with their full effective and meaningful consultation and participation, with the objective of seeking their free, prior and informed consent (FPIC); (viii) Ensure indigenous peoples obtain fair and equitable benefits and opportunities from supported activities in a culturally appropriate and inclusive manner; and (ix) Recognize and respect the rights of indigenous peoples to their lands, territories, waters and coastal seas and other resources that they have traditionally owned or otherwise occupied and used. Implementation of the requirements of Standard 4 also aims to avoid adverse impacts on indigenous peoples, their rights, lands, territories and resources and – together with affected indigenous peoples – to mitigate and remedy any adverse impacts that cannot be avoided. According to SECAP, when impacting indigenous peoples, the borrower or the grant recipient must seek FPIC from the concerned communities, document stakeholder engagement and consultation process and prepare an indigenous plan (IP). Whenever FPIC is not possible during project design, the FPIC implementation plan should specify how FPIC will be sought during early implementation. The FPIC plan and related documents must be disclosed in a timely and accessible manner at the Quality Assurance (QA) or relevant stage during implementation. IFAD SECAP promotes the Indigenous Peoples Plan as a tool to ensure that the design and implementation of projects foster full respect for indigenous peoples' identity, dignity, human rights, livelihood systems and cultural uniqueness, as defined by the indigenous peoples themselves. It also ensures that the affected groups receive culturally appropriate social and economic benefits, are not harmed by the projects, and can participate actively in projects that affect them. Other IFAD policies that support and complement these principles: Indigenous People's Policy; Targeting Policy; Gender Policy; Climate Change Strategy.
ESP 8 **Involuntary Resettlement:** Projects supported by the Fund shall be designed and implemented in a way that avoids or minimizes the need for involuntary resettlement. When limited involuntary resettlement	**Standard 7 – Physical and economic resettlement** recognizes that increasing investments in the rural sector may at times involve project-related land acquisition and restrictions on land use – actions that, if improperly managed, may have adverse impacts on communities and persons, including physical displacement (relocation, loss of residential land or loss of shelter), economic displacement (loss of land, assets or access to assets, leading to loss of income sources or other means of livelihood) or both. The term "involuntary resettlement" refers to these

is unavoidable, due process should be observed so that displaced persons shall be informed of their rights, consulted on their options, and offered technically, economically, and socially feasible resettlement alternatives or fair and adequate compensation.	impacts. Resettlement is considered involuntary when affected persons or communities do not have the right to refuse land acquisition or restrictions on land use that result in displacement. Throughout the process of identification, planning, implementation and evaluation of the various elements of resettlement or economic displacement and their impacts, adequate attention will be paid to gender concerns: specific measures addressing the needs of female headed households, gender-inclusive consultation, information disclosure, and grievance mechanisms will be put in place in order to ensure that women and men will receive adequate and appropriate compensation for their losses and to restore and possibly improve their living standards. Other IFAD policies that support and complement this principle are: Gender Equality and Women's Empowerment Policy, Engagement with Indigenous Peoples Policy, Targeting Policy, Land Policy, ENRM Policy, Youth Policy Brief, Climate Change Strategy.
ESP 9 **Protection of Natural Habitats:** The Fund shall not support projects that would involve unjustified conversion or degradation of critical natural habitats, including those that are (a) legally protected; (b) officially proposed for protection; (c) recognized by authoritative sources for their high conservation value, including as critical habitat; or (d) recognized as protected by traditional or indigenous local communities.	**Standard 1 – Biodiversity conservation** requires identification of habitat type and applies increasingly stringent requirements based on an areas' biodiversity values. Where natural habitats are affected, IFAD-funded/supported projects and programmes will proceed only after putting in place appropriate mitigation measures to achieve no net loss, and preferably a net gain of the associated biodiversity values over the long term. This must be accompanied by a robust long-term biodiversity action plan or equivalent that describes conservation outcomes and implementation, monitoring and evaluation actions. Other IFAD policies that support and complement these principles are: Environment and Natural Resources Management (ENRM) Policy; Land Policy; Climate Change Strategy.
ESP 10 **Conservation of Biodiversity:** Projects supported by the Fund shall be designed and implemented in a way that avoids any significant or unjustified reduction or loss of biological diversity or the introduction of known invasive species.	The requirements set out in **Standard 1 – Biodiversity conservation** are designed to achieve the following objectives: (i) maintain and conserve biodiversity; (ii) preserve the integrity of ecosystems; (iii) maintain and enhance the benefits of ecosystem services; (iv) adopt the use of a precautionary approach to biodiversity conservation and ensure opportunities for environmentally sustainable development; (v) ensure the fair and equitable sharing of the benefits from the utilization of genetic resources; and (vi) respect, preserve, and maintain knowledge, innovations and practices of indigenous peoples, and local communities relevant to the conservation and sustainable use of biodiversity and their customary use of biological resources. The main role of this safeguard standard is to avoid or, if avoidance is not possible, minimize and mitigate potential adverse social and environmental impacts on biodiversity and ecosystem services associated with project-related activities. This can be seen through the promotion and requirements on the "use of a precautionary approach" as outlined throughout standard 1. Requirements of Standard 1 address risks to biodiversity and ecosystem types, with increasing stringency depending on risk levels and biodiversity values of project areas. Mitigation activities to eliminate or reduce the negative impacts of a project on biodiversity should follow the following order of preference: (1) Complete avoidance of adverse impact; (2) Reduction of impacts on

	biodiversity where unavoidable; (3) Restoration of habitats to their original state; (4) Relocation of affected species; (5) Compensation for any unavoidable damage. Other IFAD policies that support and complement these principles are: Environment and Natural Resources Management (ENRM) Policy; Land Policy; Climate Change Strategy.
ESP 11 **Climate Change:** Projects supported by the Fund shall not result in any significant or unjustified increase in greenhouse gas emissions or other drivers of climate change.	SECAP asks to incorporate climate change risk analysis into projects, which are subject to an environmental, social and climate risk screening, and are assigned a risk category for climate vulnerability (substantial, high, moderate, low). The requirements set out in **Standard 9 – Climate change** are designed to achieve the following objectives: (i) ensure alignment of IFAD-supported projects with targets and priorities of countries' Nationally Determined Contributions and the goals of the Paris Agreement and other international frameworks; (ii) ensure that proposed activities are screened and assessed for climate change and disaster risks and impacts both of and to projects; (iii) apply the SECAP risk mitigation hierarchy principle of applying a hierarchy of risk management measures in project design; (iv) strengthen the climate resilience of communities and their adaptive capacity to address risks of climate change impacts and climate-related disasters; and (v) increase the ability of communities to adapt to the adverse impacts of climate change, and foster climate resilience and low GHG-emitting projects that do not threaten without compromising food production. **IFAD's mainstreaming themes in the project cycle guidance note** provides an overview of the importance of IFAD's mainstreaming commitments (including Climate change); highlights entry points for promoting mainstreaming along the project cycle; proposes the use of assessments which – even if they may be focused on risk assessment and management – are opportunities for mainstreaming; and provides an overview of inventories of key sources of data, tools, methods and approaches that have been found useful.
ESP 12 **Pollution Prevention and Resource Efficiency:** Projects supported by the Fund shall be designed and implemented in a way that meets applicable international standards for maximizing energy efficiency and minimizing material resource use, the production of wastes, and the release of pollutants.	**Standard 2 – Resource efficiency and pollution prevention** includes requirements that aim at ensuring that IFAD-supported projects and programmes minimize, mitigate and manage any risks and potential adverse impacts that may be related to resource use and pollution, with the following objectives: (i) avoid, minimize and manage the risks and impacts associated with hazardous substances and materials, including pesticides; (ii) avoid or minimize project-related emissions of short-and long-lived climate-change related pollutants; (iii) promote sustainable use of resources, including energy, land and water; and (iv) identify, where feasible, project-related opportunities for resource-use efficiency. Standard 2 outlines a project-level approach to mitigating, minimizing and managing any risks and potential adverse impacts that may be related to resource use and pollution. IFAD requires that key principles are applied. These include a precautionary approach to addressing significant environmental and social risks and impacts through the mitigation hierarchy; the "polluter pays" principle (whereby the cost of mitigation is borne by the polluter, where relevant); and adaptive management techniques (whereby lessons are learned from past management actions and are proactively utilized to predict and improve management as the project implementation progresses).
ESP 13 **Human Health:**	The requirements of **Standard 6 – Community Health and Safety** aim to ensure that IFAD-supported programs and projects avoid or minimize the

Projects supported by the Fund shall be designed and implemented in a way that avoids potentially significant negative impacts on public health.	risks and impacts to community health, safety and security. The requirements are designed to achieve the following objectives: (i) to anticipate and avoid adverse impacts on the health and safety of project-affected communities during the project life cycle from both routine and non-routine circumstances; (ii) to ensure that measures are taken to avoid or minimize community exposure to hazardous materials that be used during project activities; (iii) to promote quality and safety, and considerations relating to climate change, in the design and construction of infrastructure, including dams; (iv) to avoid or minimize community exposure to project-related traffic and road safety risks; (v) to minimize community exposure to diseases; (vi) to ensure that projects abide by the principles of "do no harm to nutrition"; (vii) to avoid risks of project-related gender-based violence, including risks of sexual harassment, sexual exploitation and abuse, and human trafficking to project-affected people and communities; (viii) to avoid or minimize adverse impacts on ecosystems services that may arise from project activities; (ix) to have in place effective measures to address emergency events; and (x) to ensure that the safeguarding of personnel and property is carried out in a manner that avoids or minimizes risks to the project-affected communities
ESP 14 **Physical and Cultural Heritage:** Projects supported by the Fund shall be designed and implemented in a way that avoids the alteration, damage, or removal of any physical cultural resources, cultural sites, and sites with unique natural values recognized as such at the community, national or international level. Projects/programmes should also not permanently interfere with existing access and use of such physical and cultural resources.	The requirements set out in **Standard 3 – Cultural heritage** are designed to achieve the following objectives: (i) preserve and safeguard Cultural Heritage; (ii) ensure that effective and active measures are taken to prevent IFAD-supported projects from altering, damaging, or removing any tangible or intangible Cultural Heritage; (iii) promote the equitable sharing of benefits from the use of Cultural Heritage; (iv) promote meaningful consultation on matters relating to Cultural Heritage. Other IFAD policies that support and complement ESP 14 are: Gender Equality and Women's Empowerment Policy, Engagement with Indigenous Peoples Policy, Targeting Policy, ENRM Policy, Climate Change Strategy.
ESP 15 **Lands and Soil Conservation:** Projects supported by the Fund shall be designed and implemented in a way that promotes soil conservation and avoids degradation or conversion of productive lands or land that provides valuable ecosystem services.	**Standard 2 – Resource efficiency and pollution prevention** includes a specific focus on soil conservation, stating that *sustainable soil management is an essential element of sustainable agriculture and is central to sustainable intensification, climate -change resilience and safeguarding ecosystem services and biodiversity. The updated World Soil Charter lists nine guiding principles that guide all actions to ensure that soils are managed sustainably and that the functions of degraded soils are rehabilitated or restored. IFAD will integrate these principles into its projects, as appropriate, to ensure sustainable soil management and to promote restoration of degraded soils* Other IFAD policies that support and complement these principles: Land Policy; Targeting Policy; ENRM Policy; Climate Change Strategy.

4. Screening and categorization

ENRICH was screened against the Adaptation Fund's 15 Environmental and Social Principles as well as IFAD's 9 Environmental, Social and Climate Standards using the SECAP screening tool. Following the screening exercise the project is rated as Category B (moderate risk). In compliance with the Adaptation Fund's ESP and IFAD's SECAP, the project is designed to avoid and mitigate environmental and social harms by integrating risk assessment and management throughout the process of project development as well as implementation.

The project interventions, while highly beneficial for building climate resilience in Grenada's agricultural sector, involve activities that can potentially have low to moderate environmental and social impacts. These impacts, however, are likely to be localized, manageable, and reversible, given the appropriate mitigation measures and safeguards. With the adherence to best practices aligned with the fifteen Environmental and Social Principles and IFAD's SECAP, these risks can be effectively managed and minimized. The table below provides details on the screening and justification for the moderate risk classification (category B).

Unidentified Sub-Projects (USP): Given the demand-based approach of the small grants in component 2 and the lack of the specific locations and technical characteristics of certain infrastructure investments under component 1, some degree of unidentified subprojects is unavoidable in ENRICH. Under Output **1.1.2**, while the locations of the ponds to be rehabilitated is already known, the specific restoration needs of the ponds and specific characteristics of the check dams to be constructed will be identified following a comprehensive feasibility study of the selected public ponds and water infrastructure during start of the project. For **Output 1.1.4**, while the typology of the hurricane resilient infrastructure is already identified, determining the specific type of infrastructure, its location, and its management will be done during implementation based on a participatory decision-making approach. For **Output 2.1.2**, the specific sites for the FFS are not yet identified. The specific investments under **Output 2.1.3** are inherently demand-driven, as they depend on individual assessments of each farmer's unique vulnerabilities, priorities, and adaptation potential. While the type of interventions to be financed has been thoroughly identified as described in the activities' description, the specific locations of these interventions cannot be identified at the design stage. The USP approach allows the project to remain adaptable, supporting small farmers with customized resilience-enhancing solutions.

While USPs may involve an increased risk of non-compliance with the Environmental and Social Policy (ESP) and Gender Policy (GP) due location specific risks not identified at the design, ENRICH was designed to minimize these risks and has built in safeguards to mitigate them in line with Adaptation Fund requirements. As a result, the specific type of activities to be financed under the abovementioned outputs have been defined to a degree, resulting in only partially unidentified subprojects which already allowed a pre-identification of environmental and social risks based on the nature of the activities, which have been taken into consideration in the table below. For each of these partially unidentified sub-projects, the project will conduct robust screening and monitoring processes to ensure compliance with ESP and GP standards. Each resilience-enhancing investment will undergo an environmental and social screening process, and specific gender-sensitive criteria will be applied to ensure equitable access to resources and opportunities as detailed in this ESMP and Gender Action Plan. Additionally, gender and environmental considerations will be integrated into the design and selection criteria for each USP, ensuring alignment with the AF's policies and reducing any compliance risks.

Environmental and social	No further assessment	Potential impacts and risks – further assessment and management required for compliance

principles	required for compliance	
Compliance with the Law		**Low risk:** The project will comply with all relevant laws and regulations. The project will be executed by the government, therefore the risk of non-compliance with the law is highly unlikely. There is however a low risk of non-compliance with environmental regulations by service providers, however mitigation measures will be put in place to ensure compliance by ensuring permits and approvals are obtained whenever required and through the monitoring and supervision of the PCU and IFAD.
Access and Equity		**Low risk:** There is a risk of a low participation of vulnerable groups (youth and women) in the project activities. However, though a participatory and inclusive approach, the project will enable fair and equitable access to project benefits to all participants, including marginalised and vulnerable groups. The project emphasizes targeted support and outreach, particularly to youth and women, through specialized entrepreneurship and vocational training activities and will offer flexible grants, job placement support, and practical climate-resilient skills training, which will address the barriers these groups face, promoting active participation. This risk will also be mitigated by adhering to the project's targeting and gender strategies and action plans which are developed to promote access, equity and inclusion.
Marginalized and Vulnerable Groups		**Low risk:** There is a risk of a low participation of vulnerable groups in the project activities. To address this, the project's priority target group will be smallholder farmers that are particularly vulnerable to the impacts of climate change. Additionally, the project will contribute to inclusive growth by focusing on vulnerable groups, such as women and youth, and enabling them to actively participate in climate-resilient value chains. Entrepreneurship Training (ET) and Business Development Services (BDS) will empower women and youth to establish climate-resilient enterprises, while Targeted Vocational Skills Training (VST) for Climate-Resilient Agriculture will ensure that young people acquire the technical skills needed to thrive in an evolving agricultural sector. This holistic approach strengthens the economic resilience of marginalized groups and helps reduce poverty by creating sustainable livelihood opportunities.
Human Rights	X	**No risk:** The project activities are not expected to contravene international or national human rights standards. The project is designed to uphold international and national human rights standards, prioritizing the well-being, dignity, and rights of all stakeholders, including vulnerable groups like smallholder farmers, women, and youth in line with Principle 4: Human Rights, as outlined in the Environmental and Social Policy (ESP). It aligns with Grenada's legal framework promoting equality, non-discrimination, and social justice by ensuring activities are transparent, inclusive, and participatory. Community consultations will incorporate local voices into decision-making, and a grievance redress mechanism will provide an accessible platform for addressing concerns, ensuring no group is marginalized or excluded from project benefits. No further assessment is required, but monitoring will ensure adherence to human rights principles and compliance with the Universal Declaration of Human Rights (UDHR) throughout implementation.
Gender Equality and Women's Empowerment		**Low risk:** There are potential risks of gender disparities in project benefits and low involvement in project activities. A gender analysis and gender action plan were conducted to assess impacts on women and design targeted measures to promote gender equity and inclusion ensuring active involvement of women in the project activities. Measures such as capacity building, prioritization criteria

		for women and women's representation have been identified to ensure gender equality and promote women's empowerment.
Core Labour Rights		**Low risk:** The project is not anticipated to violate core labour rights, as it will adhere to national labour laws and international standards. Regular monitoring will be conducted to ensure compliance with labour rights throughout the project cycle. There are however low risks of occupational health and safety as accidents can occur during the construction and rehabilitation of infrastructure. Specific measures to mitigate these risks are included in the ESMP.
Indigenous Peoples	X	**No risk:** No indigenous communities are identified in the target areas. Therefore, no further assessment is necessary.
Involuntary Resettlement		**Low risk:** Project activities will not involve any resettlement. The project will avoid any physical resettlement including for activities like water infrastructure rehabilitation and other infrastructure construction. While unlikely, these activities could however potentially lead to a temporary disruption of livelihoods or temporary restriction to natural resources. At this stage, these risks are expected to be low as the project will prioritize the rehabilitation of already existing infrastructure. Specific screenings and assessments would be conducted for these activities as necessary. The project will first seek to avoid these risks and if unavoidable will ensure they are minimized and that potential affected persons are consulted and compensated in line with the national laws, ESP and SECAP.
Protection of Natural Habitats	X	**No risk:** The project will not have any impacts on Natural Habitats as the project will not intervene in or around protected areas. Protected areas will be excluded from the project target zones including for sub-projects for which the specific locations are not yet identified.
Conservation of Biological Diversity		**Low risk:** Risks include potential loss of biodiversity due to construction or rehabilitation works. Potential impacts are expected to be low and mitigation measures have been identified in the ESMP promoting sustainable land use and agroforestry practices.
Climate Change		**Low risk:** The project is designed to improve climate resilience and is not expected to contribute to climate change. Monitoring will be conducted to ensure that activities maintain their low greenhouse gas emissions profile.
Pollution Prevention and Resource Efficiency		**Moderate risk:** Activities like the construction of facilities could lead to pollution or inefficient use of resources. To mitigate these risks the project will promote water and resource efficiency practices as well as good agricultural practices. The ESMP will also include pollution control measures, such as proper waste disposal, water quality monitoring, and use of environmentally friendly materials.
Public Health	X	**No risk:** The project is not expected to have any impacts on public health.
Physical and Cultural Heritage		**Low risk:** No physical or cultural heritage sites are expected to be impacted. Any chance finds during construction will follow the national "chance find" procedure to manage unanticipated discoveries.
Lands and Soil Conservation		**Low risk:** Earthworks, infrastructure construction and restoration could potentially lead to soil erosion or land degradation. This however is expected to be minor and localised. The ESMP will include measures to mitigate any negative impacts and monitoring will be conducted to ensure soil stability and land productivity.

5. Environmental, Social and Climate Impact Assessment

Principle 1: Compliance with the Law

Risk description. The project will be executed by the Grenadian government and will comply with all relevant laws and regulations. The risk of non-compliance with the law is therefore highly unlikely. The project also complies with the Environmental and Social Policy of the Adaptation Fund and Social, Environmental and Climate Assessment Procedures of IFAD and was designed in way to minimize negative environmental and social impacts.

As described in section 3.1 on the national laws and regulations, Grenada has in place several pieces of legislation to protect its environment which the project will comply with and adhere to. In addition to the different laws listed above, the Physical Planning Department authorized under the Planning and Development Authority, authorized by Act No. 25 of 2002 has the primary responsibility to issue environmental permits for development or construction. Activities or projects that require an Environmental Impact Assessment are listed above.

Although this is not specified in the act, in practice, an EIA is so far only required for private sector developments, where the relevant line Ministries are consulted to provide input into the evaluation of the EIA. Grenada does not require an EIA for projects developed by the government. Approvals however are required from the Physical Planning Unit (PPU) for certain developments such as storage increase, pipeline constructions and improvements of water intakes.

Mitigation measures. While Grenada does not currently have comprehensive environmental management legislation in place, some level of environmental management occurs nonetheless. Although it would be preferable that this is covered by existing legislation, adherence to the national laws supplemented by the requirements of the Adaptation Fund's ESP and IFAD's SECAP during project implementation would ensure that environmental and social risk management is factored into all activities. Ensuring that this stipulation is built into all contractual arrangements will ensure that the project's contractors and service providers are also complying the relevant environmental and social provisions therefore avoiding any risk of non-compliance with the law, the ESP or SECAP. The PCU and IFAD will also monitor compliance by ensuring permits and approvals are obtained whenever required.

To ensure that national environmental and social guidelines are adhered to, the project documentation, will be examined the Physical Planning Department, as well as the Secretariat of Agriculture, Lands and Forests within MED prior to implementation to ensure that the proposed mitigation measures to be put in place to manage the identified environmental and social risks are adequate and in line with the national requirements. The PCU will also obtain any required permits or approvals from the PPU prior to any construction or rehabilitation works.

Principle 2: Access and Equity

Risk description. There is a low risk of a low participation of vulnerable groups in the project activities, especially youth and women. The project recognizes that these may face distinct challenges that could limit their participation and access to project benefits. These barriers include limited access to financial resources, inadequate technical skills, restricted decision-making power, and socio-cultural norms that may prevent their full engagement in project activities. Given these constraints, there is a risk that without intentional efforts, these vulnerable groups might not fully benefit from the project interventions, leading to a perpetuation of existing inequalities and inequities.

Mitigation measures. The project has been designed with a strong emphasis on inclusive and participatory approaches to ensure fair and equitable access to all project benefits. This

approach includes conducting targeted outreach and engagement activities aimed specifically at vulnerable groups. The project will proactively identify youth and women as priority beneficiaries and will implement tailored capacity-building and support mechanisms to address their unique needs. For example, entrepreneurship and vocational training activities will be tailored to empower women and youth by building their technical and business skills in areas such as climate-smart agriculture, water management, and sustainable land use practices.

ENRICH will offer flexible grants and financial support mechanisms that cater to women and youth, who often face challenges accessing credit and financing. By doing so, the project aims to reduce the financial barriers that may hinder their ability to participate in climate-resilient agricultural activities. In addition, the project's vocational training programs will focus on providing practical skills and job placement support, ensuring that women and youth can access employment opportunities and build sustainable livelihoods within the project's scope.

ENRICH will also ensure equitable access to the microinsurance scheme by refining and tailoring the Livelihood Protection Policy (LPP) microinsurance product to the project's target groups focusing on vulnerable small-scale agroforestry farmers, to cover critical recovery costs for agroforestry systems following potential extreme events.

To ensure effective implementation, the project will adhere to its targeting and gender strategies and action plans. These strategies will include setting clear targets for the inclusion of women and youth. The PCU will also oversee the implementation of activities, provide feedback, and ensure that the concerns of women and youth are incorporated into project decision-making. By integrating these targeted measures and adhering to its gender and inclusion frameworks, the project aims to create an enabling environment where all community members, particularly women and youth, can actively participate in and benefit from project activities thus promoting greater social equity and enhancing community resilience.

Principle 3: Marginalized and Vulnerable Groups

Risk description. ENRICH will not cause any negative impacts on marginalized and vulnerable groups in Grenada. There is also a low probability of exclusion of these groups from the project. The project aims to address the vulnerabilities of smallholder farmers who are particularly exposed and vulnerable to the impacts of climate change, such as droughts, hurricanes, and unpredictable rainfall patterns. These farmers often rely on traditional, rain-fed agricultural systems, making them more susceptible to climate shocks that threaten their livelihoods and food security. As the project focuses on building climate resilience, it prioritizes this group, ensuring that smallholder farmers receive the necessary support to adapt to the changing climate through improved infrastructure, sustainable land and water management practices, and the adoption of climate-resilient technologies.

In addition to smallholder farmers, the project places a strong emphasis on inclusive growth by actively involving vulnerable groups, such as women and youth, in climate-resilient value chains. Women, who are often disproportionately affected by climate change due to limited access to resources, decision-making, and economic opportunities, will be supported to overcome these barriers. By offering entrepreneurship training (ET) and business development services (BDS), the project empowers women to establish climate-resilient enterprises, such as small-scale agribusinesses, processing facilities, and other value-added activities. This targeted support allows women to become more economically independent and enhances their ability to contribute to household and community resilience.

Similarly, the project recognizes the importance of engaging youth in the agricultural sector, particularly in the context of climate change. Many young people face unemployment or underemployment, and traditional farming methods may not provide viable opportunities for long-term livelihoods. Through targeted vocational skills training (VST) for climate-resilient

agriculture, the project ensures that young people acquire the technical knowledge and practical skills required to participate in modern, sustainable farming systems. This training will cover areas such as climate-smart agriculture, agroforestry, water conservation techniques, and the use of innovative technologies to increase productivity while minimizing environmental impacts.

Mitigation measures. By equipping both women and youth with the tools, knowledge, and financial support they need, the project fosters their inclusion in the agricultural value chain and promotes the development of climate-resilient enterprises. These efforts contribute to the diversification of income sources for vulnerable groups, reducing their reliance on traditional, climate-sensitive livelihoods. The holistic approach taken by the project not only builds the capacity of smallholder farmers but also strengthens the overall economic resilience of marginalized groups, creating sustainable livelihood opportunities that help reduce poverty and improve the well-being of communities as a whole.

This inclusive growth strategy ensures that vulnerable populations, are actively involved in the transition to a more resilient and sustainable agricultural sector. By addressing the specific needs of smallholder farmers, women, and youth, the project contributes to a more equitable distribution of benefits and a stronger, more adaptive economy capable of withstanding future climate challenges.

Principle 4: Human Rights

The project has been designed to align with both international and national human rights standards, ensuring that all activities are conducted in a manner that respects and promotes human rights principles. The interventions prioritize the well-being, dignity, and rights of all stakeholders, including vulnerable groups such as smallholder farmers, women and youth. As such, the project is not expected to cause any adverse impacts that would contravene established human rights standards at the local or international levels.

At the national level, Grenada has a robust legal framework that upholds the rights of its citizens and promotes equality, non-discrimination, and social justice. The project complies with these regulations by ensuring that all project activities are designed and implemented in a transparent, inclusive, and participatory manner. For example, consultations will be conducted with local communities to incorporate their voices in decision-making processes, and all stakeholders will have the opportunity to provide input and feedback throughout the project lifecycle. This inclusive approach ensures that the rights of all participants are respected, and no group is marginalized or excluded from benefiting from the project.

Additionally, the project will establish a grievance redress mechanism, which provides a transparent and accessible platform for all stakeholders to raise concerns or grievances related to project activities.

Principle 5: Gender Equality and Women's Empowerment

Risk description. The project recognizes the potential risks of gender disparities in accessing project benefits and the low involvement of women in project activities. Despite women's significant role in the agricultural sector and local economies, they often face systemic barriers that limit their participation in and benefit from development projects. Such barriers include unequal access to land, resources, financing, training, and decision-making platforms. These challenges can prevent women from engaging meaningfully in project activities and hinder their ability to fully benefit from the interventions.

In Grenada, a complex web of gender-based disparities persists across various sectors of society, hindering the full participation and empowerment of women and girls. These gaps span multiple dimensions, including economic opportunities, education, legal protections, sociocultural norms, climate change impacts, political representation, and access to information. These gaps

are as follows:

- Gender Disparities: Women face significant gender disparities in employment, leadership representation, and access to land and resources.
- Poverty and Vulnerability: Female-headed households and those in high-risk geographic areas are more vulnerable to poverty.
- Educational Disparities: Girls have slightly lower primary education enrolment and literacy rates compared to boys.
- Legal and Institutional Gaps: Gender laws are not fully implemented, and gender-based violence remains a serious issue.
- Sociocultural Norms and Gender Roles: Traditional gender roles limit women's economic opportunities and participation in decision-making.
- Gender-Based Impacts of Climate Change: Women are more vulnerable to the impacts of climate change due to their roles and lower access to information and decision-making.
- Public Policy and Institutional Response: Gender is not well integrated into climate action and disaster risk reduction strategies.
- Representation and Agency: Women's political representation in parliament has declined in recent years.
- Access to Information and Participation: Women have limited access to climate information and participation in decision-making processes.

Mitigation measures. To proactively address these issues, the project has conducted a comprehensive gender analysis and developed a Gender Action Plan (GAP). The gender analysis serves as a critical tool for understanding the specific needs, roles, and challenges faced by women in the context of climate change and agriculture in Grenada. It highlights the existing gender gaps and identifies potential risks that could exacerbate these disparities if left unaddressed. Based on this analysis, the Gender Action Plan outlines targeted strategies and measures to ensure that women are not only included in the project activities but are also empowered to lead and shape these initiatives.

Key measures have been incorporated to promote gender equity and ensure active involvement of women throughout the project. These include capacity-building activities specifically designed for women, such as training in climate-resilient agricultural practices, entrepreneurship, and leadership. By equipping women with the necessary skills and knowledge, the project strengthens their capacity to contribute to and benefit from the agricultural value chains. Additionally, targeted vocational training and business development services will enable women to establish and manage climate-resilient enterprises, further enhancing their economic resilience and decision-making power.

The project has also established clear prioritization criteria for women’s inclusion, particularly in areas where their participation is traditionally limited. This includes setting specific quotas or targets for women’s representation in project activities, such as training sessions, community consultations, and decision-making bodies. By ensuring that women have a seat at the table, the project promotes gender-balanced decision-making and fosters an environment where women’s voices are heard and valued.

Furthermore, women’s representation will be actively promoted through partnerships with local women’s organizations, cooperatives, and community groups. These partnerships will facilitate outreach and mobilization, ensuring that women are aware of the opportunities available to them and can access the resources and support needed to participate effectively.

The Gender Action Plan also includes specific monitoring and evaluation mechanisms to track gender-related outcomes and assess the effectiveness of the interventions. Indicators such as the number of women participating in training sessions, the proportion of women in leadership roles, and the percentage of women-led enterprises supported by the project will be used to

measure progress. Regular monitoring will allow the project to identify any emerging gender-related issues and make necessary adjustments to ensure that women's inclusion and empowerment are sustained throughout the project's lifecycle.

Principle 6: Core Labour Rights

Risk description. The project is not anticipated to violate core labour rights. The project has been designed to comply with both national labour laws and international standards to ensure that it upholds core labour rights throughout its implementation. In Grenada, national labour regulations, such as the Employment Act, Labour Relations Act and Minimum Wage Order provide a good framework to protect the rights of workers, regulate employment conditions, and ensure safe and fair working environments. Additionally, Grenada is a signatory to several International Labour Organization (ILO) conventions, which establish international benchmarks for labour rights, including those related to fair wages, non-discrimination, freedom of association, the right to collective bargaining, and the elimination of forced and child labour.

Given this regulatory context, the project has been developed with a strong commitment to upholding and promoting these core labour rights. No project activities are anticipated to violate labour standards, and the project will proactively ensure compliance with all relevant legal requirements. This includes adhering to regulations related to working hours, wages, benefits, and safe working conditions. The project's implementing entities and any contracted organizations will be required to respect workers' rights in all activities, from construction and rehabilitation of infrastructure to agricultural support services and training activities.

There are however potential risks related to occupational health and safety. While these are expected to be low in impact, the project activities, particularly those related to the rehabilitation and construction of infrastructure, may pose potential occupational health and safety (OHS) risks. These risks include physical hazards such as slips, trips, and falls; injuries from handling heavy machinery or equipment; exposure to hazardous substances; and the potential for accidents during construction or maintenance work. Additionally, workers could face environmental risks, such as heat stress and dehydration, when working outdoors for extended periods, particularly in the tropical climate of Grenada.

Mitigation measures. To further reinforce these commitments, the project will incorporate labour compliance as part of the Environmental and Social Management Plan. This will include measures to ensure that all workers involved in project activities, whether directly employed or contracted, are provided with fair and equitable working conditions. For example, the project will require that any third-party contractors adhere to the same labour standards and be held accountable through contractual agreements. Specific attention will be given to ensuring that all workers are informed of their rights and have access to grievance mechanisms where they can safely report any concerns related to labour rights violations or unfair treatment.

The project's adherence to international standards will further strengthen its commitment to labour rights. This includes compliance with ILO conventions related to the elimination of child labour and forced labour, ensuring that no project activity involves exploitative practices. The project will also promote equal opportunity and non-discrimination in recruitment and employment, ensuring that all workers, regardless of gender, age, disability, or ethnicity, are treated fairly and have equal access to employment opportunities and benefits associated with the project.

To mitigate OHS risks, the project will adhere to national OHS regulations, complemented by the requirements of ESP 6 and SECAP's Standard 5 on Labour and Working Conditions, and implement strict safety protocols, including the use of personal protective equipment (PPE), training on safety procedures, and continuous monitoring of compliance with OHS standards. Ensuring a safe working environment will be a priority throughout the project to protect the health

and well-being of all workers involved.

Relevant clauses on core labour rights will be included in all contractual arrangements with contractors and service providers to ensure the compliance of all project activities with these requirements.

Principle 7: Indigenous Peoples

The project does not pose any risk to indigenous communities, as no indigenous groups have been identified within the target areas in Grenada. Grenada's population does not include indigenous peoples who meet the criteria outlined in the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) or IFAD's SECAP. As such, the project does not anticipate any impacts on indigenous rights, cultures, lands, or resources. Consequently, no specific mitigation or management measures are required to address impacts on indigenous peoples.

The absence of indigenous communities in the proposed intervention areas was confirmed during the design mission through the consideration of historical, social, and demographic data, as well as consultations with local stakeholders, government bodies, and community representatives. The findings validated that there are no communities with a distinct social, cultural, or economic identity that could be categorized as indigenous in the project locations. The project will however maintain an inclusive approach by ensuring that all local community members, regardless of their social, cultural, or ethnic background, have equal access to project benefits.

Principle 8: Involuntary Resettlement

Risk description. The project is considered to have a low risk in terms of resettlement impacts, as the identified activities will not require any form of physical resettlement or displacement of communities. The project design has been developed to avoid any relocation of households or significant alteration of land use patterns, even for activities such as the rehabilitation of water infrastructure or construction of new facilities, which could otherwise trigger resettlement concerns. While these activities may involve some degree of construction or land modification, the project has prioritized utilizing public lands or existing infrastructure locations to minimize any need for land acquisition or physical relocation.

Although there is no risk of physical resettlement, there is potential for temporary disruptions to livelihoods or restrictions to natural resources during the implementation phase. Such disruptions could occur if construction activities temporarily limit access to agricultural land, water sources, or other community resources that local residents rely on for their livelihoods. These impacts, while not resulting in permanent loss of access or use, could still cause short-term inconvenience for smallholder farmers who depend on consistent access to water and land for their agricultural activities.

Mitigation measures. To address these potential impacts, the project will implement a thorough assessment process for activities involving infrastructure rehabilitation or construction. This process will include stakeholder consultations, site-specific screenings, and if required, the development of detailed management plans to ensure that any temporary disruptions are identified and mitigated early. Where avoidance of such impacts is not feasible, the project will ensure that affected persons are adequately consulted, informed, and compensated in accordance with Grenada's national laws, the Adaptation Fund's Environmental and Social Policy (ESP), and IFAD Social, Environmental and Climate Assessment Procedures (SECAP).

The project will also incorporate a grievance redress mechanism to allow affected individuals or communities to voice any concerns regarding temporary disruptions or restrictions to resources. This mechanism will ensure that grievances are addressed promptly and fairly, fostering trust

and transparency between project implementers and local communities.

Principle 9: Protection of Natural Habitats

Risk description. According to the data of the World Database on Protected Areas, the Protected Areas of Grenada include four National Parks, one Forest Reserve, one Marine Protected Area, ten Natural Landmarks and ten Protected Sites which are listed in the table below:

Table 18: List of Grenada's Protected Areas

National Parks	Grand Etang
	High North
	Levera
	Mt. St Catherine
Forest Reserves	Grand Etang
Marine Protected Areas	Molinere/Beausejour
Natural Landmarks	Annandale Fall
	Concord Falls
	Fossil Beds at Grand Cay
	Hog Island
	La Baye Rock
	Lake Antoine
	Marquis Island
	Marquis River Falls
	Quarantine Point
	River Sallee Boiling Springs
Protected Sites	Calivigny Island
	Canoe Bay
	La Sagesse
	Lauriston Point, Sandy Island, Mabouya
	Limlair-Thibaud
	Northern Seascape
	Sabazan
	Southern Seascape
	White and Saline Islands Coral Reefs
	Tyrrel Bay Mangrove

ENRICH is however not anticipated to have any adverse impacts on natural habitats, as its activities will not take place in or around ecologically sensitive areas, including designated protected areas, wildlife reserves, or critical natural habitats. During the project design phase, special attention was given to ensure that the selected intervention zones do not overlap with any protected or conservation areas, thereby safeguarding ecologically valuable regions from potential disturbances. This exclusion applies not only to the currently identified project sites but also extends to any activities for which specific locations are yet to be finalized.

Mitigation measures. To maintain this commitment, the project employed a rigorous site-selection and screening process, explicitly excluding any areas classified as protected under national legislation or international designations, such as Ramsar sites or Important Bird Areas (IBAs). This process will involve consultation with relevant environmental authorities, review of spatial data on protected areas, and field assessments to confirm that no interventions will be conducted in or near these sensitive zones. By adhering to these criteria, the project ensures that no activities will disrupt natural habitats, degrade biodiversity, or interfere with the ecological

integrity of protected areas.

Furthermore, the project will prioritize locations that are already developed or degraded, such as existing agricultural lands, public lands, or areas with minimal ecological value. This approach will help avoid unintended encroachment into natural habitats or areas that support significant biodiversity. Any necessary water resource management measures, like the restoration of public ponds or construction of hurricane-resistant facilities, will be carried out in a manner that minimizes ecological disturbance and promotes the sustainable use of natural resources.

In addition to adhering to the site exclusion criteria, the project will incorporate ecosystem-based approaches and sustainable land management practices to further ensure that natural habitats are not impacted. These measures include planting vegetation around ponds and infrastructure sites to prevent erosion, enhance soil stability, and create microhabitats that support biodiversity. Continuous monitoring and oversight will be employed to verify that project activities remain within designated zones and that no encroachment into protected or sensitive areas occurs during implementation.

Through these strategies, the project aligns with the Adaptation Fund's Environmental and Social Policy (ESP), which requires that projects avoid any conversion or degradation of natural habitats. The project's clear exclusion of protected areas and its emphasis on ecological sustainability guarantee that natural habitats will remain unaffected, and no additional assessments or mitigation measures are necessary in this regard. Regular environmental compliance checks and stakeholder consultations will be conducted to ensure that this commitment is upheld throughout the project's lifecycle.

Principle 10: Conservation of Biological Diversity
Risk description. Despite its small size, Grenada possesses a high degree of biodiversity, with natural ecosystems ranging from natural rain and dry forests, terrestrial agricultural systems to fresh water systems, mangroves forests, and coastal and marine ecosystems. These ecosystems house many endemic, threatened and endangered species and are the source of various ecosystem goods and services which support the livelihood of the Grenadian population. These systems are also threatened by the impacts of climate change and natural disasters infrastructure development, habitat degradation and loss, use of genetically modified organisms, unsustainable production and consumption, over exploitation of resources among other factors. Additionally, the country's biodiversity is characterized as particularly fragile and vulnerable to external shocks, such as extreme weather such as hurricanes, and extreme drought conditions in 2009 and 2010 (Thomas, 2016). Taking these factors into consideration, the preservation of germplasm for specific crops such as cocoa, nutmeg, and other tree crops is of great importance for the continuity of their production.

The management of plant genetic resources is limited in Grenada, with no effective mechanism in place to record and monitor activities in this area. While emphasis is being placed on the revitalization of the cocoa and nutmeg industry, the contribution of other crops such as coconut, mangoes, paw-paw, cassava, yams, dasheen, tannia, sweet potato and beans towards food security, value added and income generation cannot be overlooked (Dottin. M.). At the same time, population growth, infrastructural development, as well as unsustainable regional and local production and consumption patterns, drive the increasing demand for, and extraction of raw materials and other natural resources, as well as conversion of natural environments to generally unsustainable productive systems (IFAD, 2019).

The project activities however, present a low risk of potential biodiversity loss, particularly in areas where construction or rehabilitation works are planned. These activities, which include the rehabilitation of water infrastructure, restoration of public ponds, and construction of hurricane-resistant facilities, could lead to localized impacts on flora and fauna, including the removal of vegetation, and soil disturbance. Such impacts might result in a temporary loss of biodiversity in

the immediate vicinity of the construction sites.

However, these risks are considered low due to several factors. First, the project has strategically selected intervention areas that have already undergone some level of human development or degradation, such as existing agricultural fields, public land, or sites previously used for similar activities. This approach reduces the likelihood of significant biodiversity impacts, as these areas typically have lower ecological value and less diverse ecosystems compared to undisturbed natural habitats. Furthermore, the project will avoid any intervention in or near protected areas or ecologically sensitive zones, ensuring that impacts on critical habitats and high-value conservation areas are avoided.

Mitigation measures. To address potential biodiversity risks, the project incorporates specific mitigation measures outlined in the Environmental and Social Management Plan (ESMP). These measures include promoting sustainable land use and agroforestry practices that enhance ecosystem services and biodiversity. For example, re-vegetation and afforestation initiatives will be implemented around rehabilitated water infrastructure and restored ponds to restore lost vegetation, stabilize soil, and create habitats that support local wildlife.

The project will also integrate sustainable agricultural practices, such as agroforestry and crop diversification, to enhance biodiversity on agricultural lands and support the resilience of local ecosystems. By incorporating agroforestry practices, the project will help maintain habitat connectivity, reduce soil erosion, and create microhabitats that support a variety of plant and animal species. These practices will also contribute to the overall health and sustainability of the agricultural landscapes, reducing the need for chemical inputs and promoting ecological balance.

Regular monitoring will be conducted throughout the project implementation to assess the effectiveness of these mitigation measures and identify any unexpected biodiversity impacts. Any adverse biodiversity impacts identified during monitoring will trigger adaptive management responses, such as modifying construction practices, enhancing restoration efforts, or implementing additional protective measures to safeguard local biodiversity.

In summary, while the project poses some risk of biodiversity loss due to its construction and rehabilitation activities, the potential impacts are expected to be low. The project's proactive approach to site selection, coupled with the implementation of sustainable land use and agroforestry practices, will minimize these risks and promote biodiversity conservation in the target areas. The ESMP's targeted mitigation measures and continuous monitoring will ensure that any biodiversity impacts are effectively managed.

Principle 11: Climate Change
Risk description. The project is specifically designed to enhance climate resilience and mitigate the adverse impacts of climate change. Given its focus on sustainable agricultural practices, water resource management, and nature-based solutions, the project is not expected to contribute to climate change through increased greenhouse gas (GHG) emissions. In fact, many of the project interventions, such as reforestation, agroforestry, and sustainable land management, will have a net positive effect on carbon sequestration and emissions reduction.

Despite these positive outcomes, a low risk remains due to the potential for unintentional GHG emissions during certain project activities. For example, construction and rehabilitation works related to water infrastructure, such as pond restoration or the building of hurricane-resistant facilities, may result in minor emissions through the use of machinery and transport of materials. Similarly, the energy required for water pumps and other infrastructure could lead to small increases in emissions if not properly managed. These however are expected to be compensated by the carbon sequestration and emissions reduction of the other project activities.

Mitigation measures.

The project will promote sustainable farming practices that reduce the need for energy-intensive inputs like chemical fertilizers, which can also contribute to lower GHG emissions. Additionally, to further ensure low emissions, the project will prioritize the use of low-carbon technologies and environmentally friendly construction practices whenever possible. For example, materials and equipment with low embedded carbon will be selected whenever feasible.

Principle 12: Pollution Prevention and Resource Efficiency
Risk description. The project carries a moderate risk of pollution and inefficient use of resources due to activities such as the construction and rehabilitation of agricultural and water-related infrastructure. These activities, including the construction of hurricane-resistant storage facilities, livestock pens, and the restoration of public ponds, could potentially lead to localized pollution, inefficient resource consumption, and environmental degradation if not properly managed.

Potential pollution risks could arise from construction processes, such as the generation of solid waste, runoff of construction materials, and potential contamination of water bodies. The use of machinery and transportation of materials might also result in oil spills, dust generation, and air emissions, contributing to localized air and water pollution. Additionally, improper waste management practices could lead to the accumulation of non-biodegradable materials, such as plastics and construction debris, negatively impacting the surrounding environment and local communities.

Another risk is related to the inefficient use of natural resources, such as water and building materials. Construction activities can place a significant demand on water resources, which are already strained in Grenada due to seasonal variability and the impacts of climate change. Inefficient water usage during construction, for instance, could exacerbate water scarcity, especially in areas already experiencing limited water availability. Similarly, the use of non-sustainable building materials or inefficient design approaches may lead to the depletion of local resources and increased project costs, reducing the overall sustainability of project outcomes.

While the project will not directly support or promote the use of agrochemicals, such as fertilizers and pesticides, these substances may still be used by farmers participating in project activities. The use of agrochemicals by farmers, even outside of the project's direct influence, could pose potential environmental and health risks. Improper handling, storage, or application of these chemicals could lead to contamination of soil and water bodies, negatively impacting biodiversity and posing health hazards to farmers and nearby communities.

Mitigation measures. To address these risks, the project will incorporate a series of mitigation measures designed to promote water and resource efficiency and minimize pollution. The Environmental and Social Management Plan (ESMP) will serve as a guiding framework, outlining specific pollution control measures to be implemented during project activities. For instance, proper waste disposal protocols will be established to ensure that all construction and operational waste is collected, sorted, and disposed of according to national and international best practices. This will include separating hazardous from non-hazardous waste and ensuring safe handling and disposal of materials that could cause environmental harm.

Water quality monitoring will be a key component of the ESMP to prevent contamination of water resources during construction and operational phases. Regular testing of water sources in proximity to construction sites will be conducted to detect any changes in water quality, such as increased turbidity, chemical contamination, or alterations in pH levels. If monitoring indicates negative impacts, corrective actions will be taken immediately, such as adjusting construction practices or implementing erosion control measures.

The project will also promote the use of environmentally friendly materials and low-impact construction techniques whenever possible. For instance, sourcing sustainable building

materials, using energy-efficient equipment, and adopting construction methods that reduce the overall environmental footprint will be prioritized. Where feasible, renewable energy solutions, such as solar power for water pumps or energy-efficient lighting in storage facilities, will be integrated to reduce emissions and resource use.

Furthermore, water and resource efficiency practices will be actively promoted throughout the project. This includes implementing rainwater harvesting systems, optimizing irrigation techniques for agricultural activities, and ensuring efficient water use during construction. Training and capacity-building activities for contractors and workers will emphasize the importance of resource conservation, pollution prevention, and compliance with the ESMP standards.

Although the project will not finance or encourage the use of chemical inputs, it will support the adoption of environmentally sustainable agricultural practices including Integrated Pest Management (IPM) and organic farming methods as alternatives. These approaches will be emphasized through training sessions aimed at educating farmers on the environmental and health impacts of agrochemicals and promoting the use of non-chemical pest control strategies, and soil fertility management practices.

To ensure compliance with these measures, the ESMP will establish clear indicators and verification methods, such as waste generation records, water usage logs, and pollution monitoring reports. This ongoing monitoring will help identify any emerging risks or issues and enable the project team to implement adaptive management strategies to maintain environmental and social performance.

Principle 13: Public Health

The project is not anticipated to have any direct negative impacts on public health. The planned activities, which include climate-resilient agricultural interventions, water infrastructure rehabilitation, and institutional strengthening, are designed to improve the overall well-being and resilience of communities without posing any health risks. The project's focus on sustainable agricultural practices, water management, and capacity-building ensures that the health and safety of the population are prioritized. Any minimal or indirect risks that might arise will be managed effectively through ongoing monitoring and adherence to environmental and social safeguards.

Principle 14: Physical and Cultural Heritage

Risk description. The project is not expected to pose any risks to physical or cultural heritage sites as the proposed activities, such as infrastructure rehabilitation and agricultural interventions, will not take place in or around known heritage areas. Project target zones have been selected to avoid locations with historical, archaeological, or cultural significance, thus minimizing any potential impact on these resources. However, there is still a low risk of encountering unrecorded heritage or cultural artefacts during construction or earth-moving activities, particularly in rural or less-surveyed areas.

Mitigation measures. To address this risk, the project will incorporate a "chance find" procedure, consistent with national regulations, to manage any unanticipated discoveries. This procedure will ensure that construction or project activities are immediately halted if a chance find is made, and that qualified experts are consulted to assess the significance of the discovery.

The national "chance find" procedure includes steps such as notifying the appropriate authorities, securing the area to prevent further disturbance, and conducting an assessment to determine whether the find warrants preservation or documentation. If necessary, project activities will be adjusted or relocated to avoid adverse impacts on the discovered heritage.

Principle 15: Lands and Soil Conservation

Risk description. The project activities involving earthworks, infrastructure construction, and restoration pose a low risk of causing soil erosion and land degradation, primarily due to the nature of the interventions and the localized areas in which they will take place. However, these activities can disturb the soil structure, especially during excavation, grading, or the clearing of land for new infrastructure, potentially leading to soil displacement and increased erosion rates.

Soil erosion may occur due to several factors, including the removal of vegetation cover, compaction of soil from heavy machinery, and increased runoff from disturbed surfaces. In the context of Grenada, where the terrain can be steep and rainfall events can be intense, these risks could manifest as localized erosion, especially in areas that lack adequate vegetative cover following construction. While the project anticipates that these impacts will be minor and confined to specific locations, it is critical to implement proactive measures to prevent and mitigate these effects.

Mitigation measures. To address these concerns, the Environmental and Social Management Plan (ESMP) will include a series of mitigation measures focused on soil conservation and land stabilization. These measures may encompass practices such as:

- Vegetative Buffer Strips: Establishing vegetative buffers around construction sites to help absorb rainfall, reduce runoff, and protect against soil erosion. Native plants can be utilized to enhance biodiversity and restore ecological functions.
- Erosion Control Techniques: Implementing erosion control techniques, such as silt fencing, straw bales, or geotextiles, to capture sediment and prevent it from entering nearby water bodies during rainfall events.
- Minimizing Disturbance: Limiting the extent of land disturbance to only what is necessary for construction and restoration activities, and scheduling works during dry periods to minimize soil erosion risk.
- Site Rehabilitation: Immediately rehabilitating disturbed areas after construction by replanting vegetation or using cover crops to stabilize soil and restore its structure.

Through these proactive measures and ongoing monitoring, the project is positioned to effectively mitigate potential soil erosion risks, thereby maintaining the ecological integrity of the project sites.

6. Environmental and Social Management Plan

Based on the environmental and social assessment above, an Environmental and Social Management Plan (ESMP) was developed outlining the environmental and social impacts, mitigation measures, required consultation activities, responsibilities and monitoring indicators as seen below. The detailed mitigation measures are described in the section above.

Table 19: List of Grenada's Protected Areas

ESMP Matrix							
ESP	**Environmental, Social and Climate impacts**	**Mitigation measures**	**Public consultation activities**	**Institution responsible for implementation**	**Monitoring indicators**	**Means of verification**	**Verification frequency**
ESP 1	Non-compliance with permit requirements	Obtain relevant permits and approvals from the PPU as relevant	Consultations with relevant government agencies	Rural Development Unit (RDU)	Number of permits obtained	Copies of permits and approvals obtained.	Annual
ESP 2 ESP 3	Low participation of vulnerable groups (youth and women)	Conduct targeted outreach through community workshops, information sessions, and partnership with local organisations to engage women and youth.	Stakeholder engagement workshops to gather input from vulnerable groups.	Rural Development Unit (RDU)	Number of women and youth participating in activities.	Attendance records and feedback surveys.	Biannual
ESP 5	Gender disparities in project benefits	Implement the gender action plan with prioritization criteria for women and targeted capacity-building measures.	Gender-focused community forums to gather feedback.	RDU	Gender balance in project participation.	Participation tracking and gender analysis reports.	Biannual
ESP 6	Potential occupational health and safety risks	Conduct safety training for workers and implement safety	Safety awareness campaigns and	RDU and health and safety officers	Number of safety incidents reported.	Incident reports and safety audits.	Biannual

		protocols.	training sessions.				
	Influx of project workers	Develop a code of conduct for workers. Limit the number of workers from outside the community by prioritize workers from local communities whenever possible.	Meetings with local community leaders to discuss impacts	RDU and contractors	Number of complaints from the community; incidents reported	Grievance logs and community feedback	As needed
ESP 8	Temporary disruption of livelihoods due to construction works	Screen all infrastructure activities to identify potential risks of temporary access restrictions or disruptions. Seek avoidance of any disruptions or restrictions. Consult potential affected persons if temporary disruption risks arise and are unavoidable.	Consultations with potential affected individuals for feedback.	RDU	Number of consultations held.	Consultation records and feedback forms.	As needed
ESP 9	Impacts on natural habitats	Exclude protected areas from project activities and conduct environmental screenings.	Consultations with relevant government institutions.	RDU and environmental agencies	Monitoring of protected area boundaries.	Environmental screening reports.	Annually
ESP 10	Potential loss of biodiversity	Promote sustainable land use and	Community discussions on	RDU and local environmental	Number of biodiversity	Adoption and monitoring	Annually

		agroforestry practices in project implementation. Apply eco-friendly construction practices and minimize land clearing.	biodiversity conservation.	NGOs	conservation practices adopted.	reports.	
ESP 12	Pollution from construction and rehabilitation works	Implement pollution control measures, including proper waste disposal and resource efficiency practices.	Workshops on pollution prevention strategies.	RDU	Levels of pollution and resource use efficiency.	Environmental monitoring reports.	Biannual
	Risks from agrochemical use	The project will not support agrochemicals but will provide information on safe usage practices where applicable.	Informational sessions on agrochemical risks and safety.	RDU and agricultural extension services	Instances of agrochemical misuse reported.	Monitoring of farmer practices and compliance checks.	Annually
ESP 14	Impacts on cultural heritage sites	Follow the national "chance find" procedure for any unexpected discoveries during construction.	Consultation with line agencies responsible for chance finds.	RDU and cultural heritage authorities	Number of chance finds reported and managed.	Chance find reports.	As needed
ESP 15	Soil erosion and land degradation	Implement erosion control measures such as silt fences and re-vegetation of disturbed areas post-construction.	Consultations with local communities and contractors.	RDU and soil conservation experts	Soil stability and productivity assessments.	Soil health and erosion monitoring reports.	Annually

7. Framework for E&S Management for USPs

The project activities have been designed to allow for the pre-identification of environmental and social risks, and the overall activities and intervention areas have been clearly defined during the design phase. Most of the project activities are fully identified where both the location and the nature of the activity are determined and for which the environmental and social risks as well as mitigation measures have been identified in the ESMP. However, for certain activities, the specific site locations or specific technical characteristics cannot be established at this stage and will be determined during the implementation phase. These activities are considered to be partially unidentified.

To different degrees, this concerns activities under Output 1.1.2 Public ponds, water infrastructure is restored to improve water catchment and storage, Output 1.1.3 Farm connections established using a landscape approach, Output 1.1.4 Hurricane-resistant infrastructure constructed and rehabilitated, Output 2.1.2 Climate-adaptive agricultural technologies and best practices promoted, and Output 2.1.3 Resilience enhancing investments financed.

Output 1.1.2 Public ponds, water infrastructure is restored to improve water catchment and storage: This activity aims to restore public ponds and rehabilitate water infrastructure to enhance water catchment and storage capacity, addressing the growing challenge of water scarcity during prolonged dry seasons and improving resilience to flooding during storms. As this is a rehabilitation of already existing ponds, their location is already known. However, the specific restoration needs will be identified following a comprehensive feasibility study of the selected public ponds and water infrastructure which will be conducted across Grenada, Carriacou, and Petite Martinique. The specific characteristics of the 600 check dams to be constructed to enhance water harvesting from rainfall and surface runoff, directing it into the restored public ponds will also be determined during implementation.

Output 1.1.3 Farm connections established using a landscape approach: This activity will connect farms to rehabilitated public ponds and restored water infrastructure, ensuring a reliable and efficient water supply for agricultural production. The project will support the design and installment of water distribution systems that transport water from restored public ponds to farms across Grenada, Carriacou, and Petite Martinique. A total of 600 acres will be connected to rehabilitated water infrastructure, supporting farmers who are most vulnerable to drought. While the overall nature of the activity is defined and the locations of the ponds are known, the technical characteristics of the water distribution systems remain to be determined at implementation. However, the environmental and social risks related to this activity are considered to be fully assessed under this ESMP based on the available information with no further assessments required during implementation.

Output 1.1.4 Hurricane-resistant infrastructure constructed and rehabilitated: This activity focuses on constructing and upgrading hurricane-resistant infrastructure across the country, in at least 50 communities, to safeguard key agricultural resources, ensuring farmers can recover quickly and resume operations after extreme weather events. Types of facilities to be considered include Storage Warehouses for Crops, Agricultural Equipment Storage Facilities, Processing Facilities and Livestock Pens. In total, the ENRICH project will develop 30,000 square meters of hurricane-resistant infrastructure across Grenada, benefiting smallholder farmers and agricultural communities. While the typology of the hurricane resilient infrastructure is already identified, determining the type of infrastructure, its location, and its management will be done during implementation based on a participatory decision-

making approach.

Output 2.1.2 Climate-adaptive agricultural technologies and best practices promoted: The FFS activity is designed to serve as a practical, field-based learning platform, where farmers can observe and test CSA innovations in real-time. The Project will establish 120 Farmer Field Schools over the course of its implementation, aiming to conduct four FFS sessions per year over a three-year period, beginning in the second year. With each FFS accommodating around 25 farmers, a total of 3,000 participants are expected to benefit directly from this initiative by the end of the project. While the activity is fully defined, the sites for the FFS will determined during implementation. The FFS sites will be established in key agricultural production zones, chosen based on the criteria of accessibility, soil health, and climate vulnerability. The parcels chosen for FFS will be representative of the region's agro-ecological conditions, ensuring that lessons learned are applicable across similar farming systems. Although the specific sites are yet to be identified, the E&S risk related to this activity are considered to be fully assessed under this ESMP and no additional negative impacts are foreseen following the sites selection.

Output 2.1.3 Resilience enhancing investments financed: the project will support small farmers, including home gardeners, to adopt CSA practices though grants. Two main types of financing investments will be supported by the Project: (i) Start-up financing; and (ii) Resilience-enhancing technologies (known as well as CSA practices).

The type of activities and services to be financed through these grants have already been pre-identified. These include:

- Small works (e.g., irrigation systems, drainage),
- Land access legal advice,
- Land preparation,
- Inputs (seeds, organic fertilizers),
- Equipment (solar pumps, drip irrigation systems),
- Technical assistance,
- Packaging and labelling,
- Certifications, and
- Laboratory analysis.

Regarding Water Management Practices, CSA practices will prioritize technologies that increase access to water and improve water use efficiency to address the longer drought periods that are becoming more frequent due to climate change. These include:

- Underground cisterns.
- Rainwater harvesting systems.
- Storage tanks.
- Solar pumps.
- Drip irrigation systems.
- Mulching and terracing.

For livestock farmers, the Project will support:

- Pens and fencing.
- Cut-and-carry pastures.
- Compost production.

To reduce soil runoff and storm damage in heavy rain periods, the Project will finance the following practices:

- Live barriers.
- Intercropping.
- Construction of small on-farm drainage systems.
- Use of shade houses for controlled growing environments.
- Composting facilities.
- Beekeeping.

Under this output, the project will provide flexible financing for backyard gardens and other CSA investments, with a structured system of grants based on farm size and type of production. The backyard gardens will focus on roots and tubers production, alongside nutrient-rich crops like orange flesh sweet potatoes, cabbage, carrots, and green leafy vegetables and allow for the integration of fruit trees or Moringa trees and, where feasible, include small livestock such as goats, chickens, and rabbits to enhance food security and nutrition.

While the nature and scope of activities are known as described above, the specific technical characteristics and specific sites where these investments will take place will be identified during implementation as this will depend on the selection of the grants' beneficiaries. The project will however, not fund any activities that could have negative environmental effects, such as farming on steep slopes, deforestation, or non-agricultural house improvements.

The ESMP already covers potential risks related to these activities based on their nature. In addition, rigorous screening and assessment of environmental and social risks against the 15 principles of the AF ESP will be conducted during implementation phase to ensure that any potential additional risks related to the USP location not already covered under this ESMP are appropriately managed. This concerns activities under outputs 1.1.2, 1.1.4 and 2.1.3.

7.1. Identification of specific project sites:

The exact locations for activities under Outputs 1.1.3, 1.1.4, 2.1.2, and 2.1.3 will be determined through a participatory and evidence-based approach during project implementation. This process will ensure alignment with project objectives, environmental and social safeguards, and local needs. The following steps will guide the location selection:

- **Data-Driven Identification:** Geographic targeting will leverage detailed vulnerability assessments, such as the Revised Universal Soil Loss Equation (RUSLE) analysis, and other climate vulnerability data already developed under the project. These tools will pre-identify priority areas, such as watersheds with high erosion risks (Output 1.1.3), locations prone to water scarcity or flooding (Output 1.1.4), and regions where ecosystem restoration and climate-smart agriculture practices will have the highest impact (Outputs 2.1.2 and 2.1.3).

- **Stakeholder Engagement:** Local stakeholders, including farmers, community groups, and government representatives, will actively participate in workshops and consultations to validate and refine pre-identified locations. These discussions will ensure that site selections align with community needs and priorities while maximizing the project's environmental, social, and economic benefits.

- **Environmental and Social Screening:** All potential locations will undergo environmental and social screening in accordance with the Adaptation Fund's 15 Environmental and Social Principles and the project's Environmental and Social Management Plan (ESMP). This screening will identify and mitigate potential risks to ensure sustainable and equitable outcomes.

- **Iterative Refinement:** Based on stakeholder feedback, site conditions, and alignment with project goals, final locations will be selected and integrated into the Annual Work Plans and Budgets (AWPB). The selection process will be documented to ensure transparency and accountability.

7.2. Process for environmental and social risk screening, assessment and management for USPs

The process for the identification and management of environmental and social risks for USPs will first take into consideration the following:

a) The adoption of the provisions and eligibility criteria applied the overall project:

Environmental and social principles	Applicable provisions
ESP 1: Compliance with the Law	The sub-project should comply with all relevant national laws and regulations and prepare relevant assessments when required.
ESP 2: Access and Equity	The sub-project should enable fair and equitable access to project benefits to all participants, including marginalized and vulnerable groups through a participatory and inclusive approach and will adhere to the project's targeting and gender strategies and action plans.
ESP 3: Marginalized and Vulnerable Groups	The sub-project should have a specific focus on inclusive growth by focusing on vulnerable groups, such as women and youth, and enabling them to actively participate in climate-resilient value chains.
ESP 4: Human Rights	The sub-project should respect and adhere to all relevant conventions and laws on human rights.
ESP 5: Gender Equality and Women's Empowerment	The sub-project should adhere to the provisions and measures outlined in the gender analysis and gender action plan to promote gender equity and inclusion ensuring active involvement of women in the project activities.
ESP 6: Core Labour Rights	Sub-projects involving labour should ensure adherence and compliance with relevant labour laws and ILO labour standards.
ESP 7: Indigenous Peoples	Not applicable
ESP 8: Involuntary Resettlement	Sub-projects that could involve physical or economic resettlement will be avoided.
ESP 9: Protection of Natural Habitats	Sub-projects in proximity to protected areas or that could lead to potential impacts on natural habitats will be excluded.
ESP 10: Conservation of Biological Diversity	Sub-projects with potential impacts on biodiversity will adhere to the provisions under this ESMP and will develop specific ESMPs to mitigate potential risks when required.
ESP 11: Climate Change	Sub-projects will be designed to improve climate resilience. Eligible activities are not expected to contribute to climate change.
ESP 12: Pollution	Sub-projects will promote water and resource efficiency practices as

Prevention and Resource Efficiency	well as good agricultural practices. Sub-project with potential impacts will adhere to the provisions of this ESMP and develop specific ESMP when required.
ESP 13: Public Health	Sub-projects are not expected to have any impacts on public health.
ESP 14: Physical and Cultural Heritage	Sub-projects are not expected to have impacts on physical or cultural heritage sites. Any chance finds during construction will follow the national "chance find" procedure to manage unanticipated discoveries.
ESP 15: Lands and Soil Conservation	Sub-projects with potential impacts on soils will adhere to the provisions under this ESMP and will develop specific ESMPs to mitigate potential risks when required.

b) The adherence of the sub-project ESMPs to the AF principles, the SECAP standards and the relevant national laws and regulations: as outlined in this ESMP.

c)The adherence to the proposed framework for Environmental and Social Risk Screening and Management outlined below:

The following framework outlines a systematic approach for the Rural Development Unit (RDU) to ensure that all Unidentified Sub-Projects (USPs) adhere to the Adaptation Fund's Environmental and Social Principles (ESPs) and maintain compliance with the overall Environmental and Social Policy (ESP) and Gender Policy. This framework consists of several key steps which are detailed below:

i. Initial Screening of USPs

An initial screening of USPs against the 15 ES Principles is required to quickly assess whether the proposed USP is likely to have any potential additional environmental or social risks. Based on the screening, the USPs will be categorized as follows (a screening checklist is provided in Appendix 1):

- **Category A (high risk):** Sub-projects with potential significant adverse environmental and social impacts that are irreversible, diverse, or unprecedented. These sub-projects will be excluded.
- **Category B (moderate risk):** Sub-projects with potential moderate adverse environmental and social impacts that are site-specific and reversible. These sub-projects would require a specific Environmental and Social Management Plan (ESMP).
- **Category C (low/no risk):** Sub-projects with minimal or no adverse environmental and social impacts. No further environmental and social assessment is required; however, the implementation of these activities should follow good practices.

The screening will evaluate environmental impacts, social impacts as well as compliance with relevant laws, regulations and policy frameworks. During the screening the RDU will take into consideration the following

ii. Environmental and Social Risk Assessment and Management

Preparation of Environmental and Social Management Plans (ESMP) for Category B sub-projects: In order to ensure that moderate-risk sub-projects have clear mitigation strategies, the development of specific ESMPs is required (A template is provided in Appendix 2). **The ESMP** outlines the potential impacts, mitigation measures, monitoring

indicators, and responsibilities:

- Risk identification: Documented potential risks and their magnitude based on the specific sites where the sub-project is located and taking into consideration the preliminary risk assessment conducted at design in this ESMP.
- Mitigation Measures: Identification of specific steps and measures to avoid, minimize, or manage the identified risks taking into consideration the measures identified in this ESMP and the general provisions and criteria described above.
- Roles and Responsibilities: Identification of responsible parties for implementing and monitoring mitigation measures.
- Monitoring Indicators: Identification of clear metrics and indicators to measure compliance and impact reduction.

Ensure adherence to Good International Industry Practice for Category C sub-projects: While no additional assessment is required for category C sub-projects, the project should follow standard good practices and ensure compliance with the 15 principles of the ESP.

iii. Stakeholder Engagement and Public Consultation

Consultations during USP screening and assessment: Ensure that stakeholder consultations are held at multiple stages of the USP assessment process, including during initial screening, and ESMP formulation.

Disclosure of Information: Share information about potential impacts, mitigation measures, and project activities with affected communities in an accessible manner. This includes making draft ESMPs available for public review.

Incorporate Feedback: Use feedback from stakeholders to refine the screening process, assessments, and management plans for USPs.

iv. Gender Considerations

Gender Assessment and Action Plan: consult the gender analysis and gender action plan as part of the screening and assessment processes for USPs to address specific gender-related issues identified.

Promote Gender Equality: Ensure that both men and women are equally involved in consultations and benefit-sharing, and that gender-differentiated impacts are addressed.

v. Implementation and Supervision of Environmental and Social Management Plans

Implementation of ESMPs: The RDU should ensure that the ESMPs for USPs are implemented by responsible parties (e.g. contractors).

Regular Monitoring and Compliance Checks: Conduct regular monitoring of the implementation of mitigation measures and compliance with ESMPs.

Adjustments and Adaptive Management: If new risks emerge during implementation, adapt and revise management plans as necessary, following the adaptive management approach.

vi. Summary Table of Screening and Risk Management for USPs

Stage	Action	Requirements	Responsible entity

Initial Screening	Categorization	Assess risk category (A, B, C) based on ESP principles.	RDU/ Safeguards Specialist
E&S risk assessment	Development of ESMPs for category B sub-projects	Detailed ESMP development with specific mitigation measures.	RDU/Safeguards Specialist
Consultation	Stakeholder Engagement	Multi-stage consultations, feedback integration, and information sharing.	RDU, Stakeholders and Beneficiaries
Gender Action Plan	Gender Analysis	Inclusion of gender considerations in screening and management plans.	RDU/Gender Specialist
Implementation	ESMP Execution	Ensure mitigation measures are applied effectively.	RDU/Contractors
Monitoring	Compliance Checks	Regular reviews and adaptive management based on findings.	RDU

7.3. Preliminary environmental and social assessment of USP related risks

Output 1.1.2 Public ponds, water infrastructure is restored to improve water catchment and storage

Activity 1: Public Ponds Restoration and Water Infrastructure Rehabilitation

ESP	Potential Risk Level	Preliminary Assessment and Mitigation
Compliance with the Law	Low	**Assessment:** Risk of non-compliance with construction and water extraction and storage regulations. **Mitigation**: Obtain permits and comply with regulations.
Access and Equity	No risk	The project will ensure equitable access to water management solutions by targeting vulnerable farmers.
Marginalized and Vulnerable Groups	No risk	The project will ensure inclusion of the most vulnerable farmers.
Human Rights	No Risk	Positive impact through improved water security

		and resilience.
Gender Equity and Women's Empowerment	Low	**Assessment:** Limited participation of women. **Mitigation**: Gender-targeted training and capacity-building in line with gender action plan.
Core Labour Rights	Low	**Assessment:** Potential occupational health and safety risks related to construction and rehabilitation works. **Mitigation:** Conduct safety training for workers and implement safety protocols.
Indigenous Peoples	No risk	Not applicable
Involuntary Resettlement	No Risk	No risk of resettlement as this concerns rehabilitation of existing water ponds.
Protection of Natural Habitats	No risk	Activities in proximity or with potential impacts on natural habitats are excluded.
Conservation of Biological Diversity	Low	**Assessment:** Potential impact on local ecosystems. **Mitigation**: Promote sustainable water use measures to protect habitats.
Climate Change	No risk	Positive contributions through water conservation and efficient use.
Pollution Prevention and Resource Efficiency	Moderate	**Assessment:** potential water and soil pollution from construction waste. **Mitigation:** Ensure proper waste management during construction.
Public Health	No risk	No impacts on public health foreseen.
Physical and Cultural Heritage	No Risk	No impacts on culturally significant sites is foreseen.
Lands and Soil Conservation	Moderate	**Assessment:** Potential soil erosion in construction sites. **Mitigation**: Implement erosion control measures such as silt fences and re-vegetation of disturbed areas post-construction.

Output 1.1.4 Hurricane-resistant infrastructure constructed and rehabilitated

Activity 1: Hurricane-Resistant Facilities constructed and rehabilitated

ESP	Potential Risk Level	Preliminary Assessment and Mitigation
Compliance with the Law	Low	**Assessment:** Risk of non-compliance with construction regulations. **Mitigation**: Obtain permits and comply with regulations.
Access and Equity	No risk	The project will ensure equitable access to water management solutions by targeting vulnerable groups.
Marginalized and Vulnerable Groups	Low risk	The project will ensure inclusion of the most vulnerable groups.
Human Rights	No risk	Positive impact through improved water security and resilience.
Gender Equity and Women's Empowerment	Low risk	**Assessment:** Limited participation of women. **Mitigation**: Gender-targeted training and capacity-building in line with gender action plan.
Core Labour Rights	Low risk	**Assessment:** Potential occupational health and safety risks related to construction and rehabilitation works. **Mitigation:** Conduct safety training for workers and implement safety protocols.
Indigenous Peoples	No risk	Not applicable
Involuntary Resettlement	Low risk	**Assessment:** No risk of physical resettlement, however there is a risk of potential temporary disruption of livelihoods due to construction works. **Mitigation:** Seek avoidance of any disruptions or access restrictions and consult potential affected persons if temporary disruption risks arise and are unavoidable.
Protection of Natural Habitats	No risk	Activities in proximity or with potential impacts on natural habitats are excluded.
Conservation of Biological Diversity	Low risk	**Assessment:** Potential impact on local ecosystems. **Mitigation**: Apply eco-friendly construction practices and minimize land clearing.

Climate Change	No risk	No risk.
Pollution Prevention and Resource Efficiency	Moderate	**Assessment:** Pollution from construction and rehabilitation works. **Mitigation:** Implement pollution control measures, including proper waste disposal.
Public Health	No risk	No impacts on public health foreseen.
Physical and Cultural Heritage	No Risk	No impacts on culturally significant sites is foreseen.
Lands and Soil Conservation	Moderate	**Assessment:** Potential soil erosion in construction sites. **Mitigation**: Implement erosion control measures such as silt fences and re-vegetation of disturbed areas post-construction.

Output 2.1.2 Climate-adaptive agricultural technologies and best practices promoted

Activity 1: Start-Up Financing:

ESP	Potential Risk Level	Preliminary Assessment and Mitigation
Compliance with the Law	Low	**Assessment:** Risk of non-compliance with local business, environmental or licensing laws for new enterprises. **Mitigation**: Ensure compliance reviews and legal guidance as part of the business development process.
Access and Equity	Low	**Assessment:** Potential barriers for marginalized or less-resourced individuals in accessing funds. **Mitigation**: Employ inclusive selection criteria and provide additional support where needed.
Marginalized and Vulnerable Groups	Low	**Assessment:** Risk of exclusion due to socioeconomic status or geographic constraints. **Mitigation**: Prioritize outreach and support to marginalized groups in line with the targeting strategy and gender action plan.
Human Rights	No Risk	No direct human rights concerns.

Gender Equity and Women's Empowerment	Low	**Assessment:** Risk of unequal access to financing for women. **Mitigation**: Ensure gender-specific outreach and equal opportunities in line with the provisions of the gender action plan.
Core Labour Rights	Low	**Assessment:** Risk associated with labour standards if employees are hired. **Mitigation**: Adhere to national labour regulations and enforce safe working conditions.
Indigenous Peoples	No risk	Not applicable
Involuntary Resettlement	No risk	No resettlement risks associated with start-up activities.
Protection of Natural Habitats	No risk	Activities with potential impacts on natural habitats are excluded.
Conservation of Biological Diversity	Low	**Assessment:** Risk of activities negatively impacting biodiversity. **Mitigation**: Promote only biodiversity-friendly business practices.
Climate Change	No risk	Positive contributions through climate-resilient enterprises.
Pollution Prevention and resource efficiency	Moderate	**Assessment:** Potential waste generation or environmental impact. **Mitigation**: Include waste management and pollution control requirements in business plans.
Public Health	No risk	No impacts on public health foreseen in start-up financing.
Physical and Cultural Heritage	No Risk	Activities will not have impacts on cultural heritage.
Lands and Soil Conservation	Low	**Assessment:** Potential risk on agricultural soils depending on enterprises activities. **Mitigation:** Ensure that business practices related to land use comply with conservation best practices.

Activity 2: Financing of Resilience-Enhancing Technologies / CSA Practices

ESP	Potential Risk Level	Preliminary Assessment and Mitigation
Compliance with the Law	Low	**Assessment:** Risk of non-compliance with agricultural, water use, or land-use regulations. **Mitigation**: Obtain necessary permits and follow regulations for all CSA practices.
Access and Equity	Low	**Assessment:** Ensure equitable access to CSA technologies and support services. **Mitigation**: Apply inclusive criteria and prioritize marginalized groups.
Marginalized and Vulnerable Groups	Low	**Assessment:** Risk of exclusion of marginalized groups. **Mitigation**: Prioritize outreach and support to marginalized groups in line with the targeting strategy and gender action plan.
Human Rights	No Risk	Activities improve resilience and livelihoods, with no identified human rights concerns.
Gender Equity and Women's Empowerment	Low	**Assessment:** Risk of women's exclusion from technology adoption. **Mitigation**: Ensure gender-targeted training and support in line with the gender action plan.
Core Labour Rights	Low	**Assessment:** Potential risks related to labour conditions during works and installation of CSA technologies. **Mitigation:** Ensure fair labor practices in the provision and installation of CSA technologies.
Indigenous Peoples	No risk	Not applicable
Involuntary Resettlement	No risk	No resettlement risks; ensure activities respect communal lands.
Protection of Natural Habitats	No risk	Any works in proximity or with potential impacts on natural habitats will be excluded.
Conservation of Biological Diversity	Low	**Assessment:** Risk of using non-native species or inputs. **Mitigation**: Promote the use of native and adaptive

		species.
Climate Change	Low	Positive impact through increased resilience to climate variability.
Pollution Prevention and Resource Efficiency	Moderate	**Assessment:** Risk of runoff or improper input use (e.g., fertilizers). **Mitigation**: Implement best practices for fertilizer application and water management and promote the use of organic inputs.
Public Health	No risk	No impacts on public health foreseen.
Physical and Cultural Heritage	No Risk	No anticipated risks; ensure activities do not disturb cultural sites.
Lands and Soil Conservation	Low	**Assessment:** Risk of soil erosion or degradation. **Mitigation**: Utilize mulching, terracing, and other soil conservation techniques.

Activity 3.1: Financing Water Management Practices (Cisterns, Rainwater Harvesting, etc.)

ESP	Potential Risk Level	Preliminary Assessment and Mitigation
Compliance with the Law	Low	**Assessment:** Risk of non-compliance with water extraction and storage regulations. **Mitigation**: Obtain permits and comply with regulations.
Access and Equity	No risk	The project will ensure equitable access to water management solutions by targeting vulnerable farmers.
Marginalized and Vulnerable Groups	Low risk	**Assessment:** Risk of limited access to grants. **Mitigation**: Target outreach to vulnerable communities in line with the targeting strategy.
Human Rights	No Risk	Positive impact through improved water security and resilience.
Gender Equity and Women's Empowerment	Low	**Assessment:** Limited participation of women. **Mitigation**: Gender-targeted training and capacity-building in line with gender action plan.

Core Labour Rights	Low	**Assessment:** Minimal labour risks. **Mitigation:** Ensure safety protocols in installations.
Indigenous Peoples	No risk	Not applicable
Involuntary Resettlement	No Risk	No risk of resettlement due to water infrastructure at the farm level.
Protection of Natural Habitats	No risk	Activities in proximity or with potential impacts on natural habitats are excluded.
Conservation of Biological Diversity	Low	**Assessment:** Potential impact on local ecosystems. **Mitigation**: Promote sustainable water use measures to protect habitats.
Climate Change	No risk	Positive contributions through water conservation and efficient use.
Pollution Prevention and Resource Efficiency	Moderate	**Assessment:** potential water and soil pollution from mulch materials, manure runoff and compost leachate. **Mitigation:** Ensure proper waste management for runoff and storage systems.
Public Health	No risk	No impacts on public health foreseen.
Physical and Cultural Heritage	No Risk	No impacts on culturally significant sites is foreseen.
Lands and Soil Conservation	Moderate	**Assessment:** Potential soil erosion from water distribution practices. **Mitigation**: Use soil stabilization methods such as terracing.

Activity 3.2: Financing Erosion and Storm Protection (Live Barriers, Intercropping, etc.)

ESP	Potential Risk Level	Preliminary Assessment and Mitigation
Compliance with the Law	Low	**Assessment:** Non-compliance with agricultural and environmental regulations. **Mitigation**: Verify all necessary legal compliance.
Access and Equity	No risk	The project will ensure equitable access to erosion and storm protection solutions by targeting

		vulnerable farmers.
Marginalized and Vulnerable Groups	Low	**Assessment:** Limited access of vulnerable groups to erosion control and storm protection measures. **Mitigation**: Target outreach and tailored support.
Human Rights	No Risk	Activities have a positive impact on livelihoods and resilience.
Gender Equity and Women's Empowerment	Low	**Assessment:** Limited access of women to erosion control and storm protection measures. **Mitigation:** Ensure women's participation in soil conservation activities in line with the GAP provisions.
Core Labour Rights	Low	**Assessment:** Potential minimal labour and working conditions related risks. **Mitigation:** Ensure safe working conditions in line with national laws and ILO standards.
Indigenous Peoples	No risk	Not applicable
Involuntary Resettlement	No Risk	No anticipated risks of resettlement.
Protection of Natural Habitats	No risk	Activities with impacts on natural habitats are not eligible.
Conservation of Biological Diversity	Low	**Assessment:** Potential impact on biodiversity. **Mitigation**: Promote native and biodiversity-friendly practices.
Climate Change	No risk	Positive impact on resilience to extreme weather events.
Pollution Prevention and Resource Efficiency	Moderate	**Assessment:** Potential impacts from composting facilities. **Mitigation:** Ensure proper composting and runoff management to prevent pollution.
Public Health	No Risk	No health risks identified.
Physical and Cultural Heritage	No Risk	No impacts on cultural heritage foreseen.
Lands and Soil	Low	**Assessment:** Potential localised soil erosion and

Conservation		degradation. **Mitigation:** Promote sustainable vegetation management and good agricultural practices.

8. Monitoring and reporting

The RDU will establish a dedicated monitoring team responsible for data collection, analysis, and reporting. Extension officers, local institutions, and third-party experts may be involved as needed. Standardized data collection tools, including surveys, interviews, GIS mapping, remote sensing, and laboratory testing will be used to ensure accurate and reliable data. Additionally, periodic monitoring reports will be prepared to inform IFAD and the Adaptation Fund. By establishing these protocols, the project can effectively monitor environmental and social performance, manage potential risks, and ensure alignment with the Adaptation Fund's ESP principles and SECAP throughout implementation.

In addition, annual Environmental and Social Compliance Reports will be submitted by the PCU, detailing the environmental and social performance of the USPs. The project will also undergo annual supervision missions, a mid-term review and a final Evaluations where the overall compliance with the ESP and SECAP and effectiveness of the ESMP in managing risks will be assessed.

9. Roles and responsibilities

The successful implementation and monitoring of the Environmental and Social Management Plan (ESMP) for the project will involve several key roles and responsibilities primarily led by the Rural Development Unit (RDU) under the Secretariat of Agriculture, Lands and Forests within MED. The RDU will take the lead in coordinating and overseeing the execution of the ESMP, ensuring that all project activities comply with the Adaptation Fund's ESP, IFAD's SECAP and the national environmental regulations. This includes conducting necessary assessments for Unidentified Sub-Projects (USPs) and ensuring that risk management measures are effectively integrated into the project design and implementation processes. The RDU will also be responsible for engaging relevant stakeholders, including local communities and vulnerable groups, to promote transparency and inclusive participation in project activities.

Monitoring the ESMP will be a collaborative effort involving various stakeholders. The RDU will include a monitoring and evaluation expert who will work closely with the safeguards expert to track compliance with the mitigation measures outlined in the ESMP. The team will be responsible for regular site inspections, data collection on environmental and social indicators, and reporting on the effectiveness of the implemented measures. Additionally, the RDU will facilitate capacity-building initiatives for project staff and stakeholders to enhance their understanding of environmental and social issues. Regular feedback loops will be created to incorporate lessons learned into project adjustments, ensuring continuous improvement in addressing environmental and social risks throughout the project lifecycle.

10. Budgetary considerations

The total budget for the implementation of the ESMP and project-level GRM is $74,100. This is already fully integrated in the project's budget.

ESMP Budget Breakdown ($58,500):

The ESMP implementation budget covers key activities essential to managing and mitigating environmental and social risks. The main components include:

- Consultant Costs: Fees for environmental and social specialists to conduct assessments, update the ESMP, and provide guidance on mitigation measures as necessary.
- Field Visits: Regular site inspections and environmental monitoring visits to assess compliance with the ESMP and to identify potential issues early.
- Screening and Updating ESMP: Costs associated with periodic reviews of activities and updating the ESMP based as necessary.
- Monitoring and Reporting: Ongoing monitoring of environmental and social indicators, as well as preparing regular reports to ensure compliance.
- Trainings: Capacity-building activities for project staff and stakeholders to ensure they understand their roles in ESMP implementation and risk management.

The costs related to the implementation of the specific mitigation measures are already fully integrated within costs of the related project activities.

GRM Budget Breakdown ($15,600):

The GRM budget ensures that community grievances related to the project are effectively addressed. The budget covers:

- Setup and Operationalization: Establishment of the GRM system, including channels for submitting grievances (e.g., hotline, email, in-person).
- Training and Awareness: Informing local communities and project stakeholders about the GRM process and how to submit grievances.
- Processing and Resolution of Complaints: Staff time for handling and resolving grievances, including any necessary investigations.
- Monitoring and Reporting: Tracking the status of grievances and preparing reports to ensure transparency and timely resolution.

Appendix 1: Indicative format for Environmental and Social Screening

1. Environment Impacts and Risks

The Screening will be in terms of (a) Direct Environmental Risks; (b) Direct Environmental Impacts; (c) Indirect Environmental Risks; and (d) Indirect Environmental Risks on the following issues.

- Compliance with the Law
- Protection of Natural Habitats
- Conservation of Biological Diversity
- Climate Change
- Pollution Prevention and Resource Efficiency
- Public Health
- Physical and Cultural Heritage
- Land and Soil Conservation

2. Social Impacts and Risks

The screening will be in terms of (a) Direct Social Risks; (b) Direct Social Impacts; (c) Indirect Social Risks; and (d) Indirect Social Risks on the following issues.

- Compliance with the Law
- Access and Equity
- Marginalized and Vulnerable Groups
- Human Rights
- Gender Equity and Women's Empowerment
- Core Labour Rights
- Involuntary Resettlement
- Public Health
- Physical and Cultural Heritage

3. Categorization and next steps

- Category A (high risk): excluded
- Category B (moderate risk): ESMP required
- Category C (low risk): no further assessment required

Appendix 2: ESMP outline

Table 20: ESMP Matrix

ESMP Matrix						
Environmental and Social impacts	**Recommended mitigation**	**Public consultation activities**	**Institution responsible for implementation**	**Means of verification**	**Verification frequency**	**Estimated cost**

Appendix 3: Grievance Redress Mechanism

The Grievance Redress Mechanism (GRM) aims to provide a clear, structured, and accessible platform for stakeholders to raise concerns and grievances related to the project. This system ensures transparency, timely resolution of complaints, and enhances trust and accountability between the project implementers and the communities it serves. The GRM will be implemented at the RDU level and will cover all activities associated with the project. A detailed GRM is proposed below which will be finetuned and updated as relevant by the RDU at the project's start-up.

1. GRM principles

GRMs designed according to the following principles are more likely to provide timely and effective resolution of grievances.

Developed based on engagement and dialogue with key stakeholders, notably target groups: to ensure the GRM's design and performance meets communities' needs, and that they will use it in practice.

Accessible: being known to all target groups for whose use they are intended, and providing adequate assistance for those who may face particular barriers to access, e.g. lack of awareness of the GRM, language, literacy, costs, physical location and fears of reprisal.

Predictable: providing a clear and known procedure with an indicative timeframe for each stage, and clarity on the types of processes and outcomes available and means of monitoring implementation. In order for a GRM to be trusted and used, it should provide public information about its procedures.

Equitable: seeking to ensure that aggrieved parties have reasonable access to sources of information, advice and expertise necessary to engage in a grievance process on fair, informed and respectful terms. Where imbalances are not redressed, perceived inequity can undermine both the perception of a fair process and the GRM's ability to arrive at durable solutions.

Transparent: keeping parties to a grievance informed about its progress, and providing sufficient information about the mechanism's performance to build confidence in its effectiveness and meet any public interest at stake. Providing transparency about a GRM's performance to wider stakeholders, through statistics, or more detailed information about the handling of certain cases, can be important to demonstrate its legitimacy and retain broad trust. At the same time, confidentiality of the dialogue between parties and of individuals' identities should be provided.

Rights compatible: grievance redress processes are generally more successful when all parties agree that outcomes are consistent with applicable national and internationally recognized rights.

Enabling continuous learning: to enhance policies, procedures, and practices in order to improve GRM performance and prevent future harm, including by: conducting regular analysis of the frequency, patterns, and causes of grievances; strategies and processes used for grievance resolution; and the effectiveness of those strategies and processes.

2. Potential channels for submitting grievances

The project will provide multiple channels for submitting grievances to ensure inclusivity and accessibility for all stakeholders. These channels will include:

- **Email**: Dedicated project email address
- **Phone Hotline:** A designated project grievance hotline with contact details shared publicly.
- **In-Person:** Complaints can be submitted directly at RDU offices or during community meetings.
- **Grievance boxes:** Locked grievance boxes placed in accessible locations (e.g., community

centers) for anonymous submissions.
- **Online Platform:** A webpage linked to the project's site, allowing stakeholders to submit grievances and receive updates on their status.
- **Extension workers:** Extension workers supporting project activities can act as intermediaries to receive grievances and facilitate communication between the community and the project team.

3. Steps in the Grievance Redress Process

The GRM process will be divided into five key steps to ensure systematic handling of all grievances:

Step 1: Submission of Grievance

Stakeholders can submit grievances through any of the channels listed above. Complaints can be submitted verbally or in writing and may be anonymous. The grievance submission will be logged in a Grievance Register with details such as the date, location, nature of the complaint, and complainant's contact information (if provided).

Step 2: Acknowledgment and Initial Screening

Within 10 working days, the RDU's GRM Officer will acknowledge receipt of the grievance, providing a unique reference number and expected timeline for resolution. The grievance will be screened to determine if it is related to the project. If the grievance is unrelated, the complainant will be informed and directed to the appropriate authority.

Step 3: Investigation and Assessment

For project-related grievances, the RDU will investigate within 10-15 working days, depending on the complexity of the issue. The investigation may involve consultations with the complainant, site visits, and discussions with relevant project staff or community members.

Step 4: Resolution and Response

Based on the investigation findings, a resolution plan will be developed and shared with the complainant within 40 working days of receipt of the grievance. This plan will outline the proposed actions to address the grievance, the timeline for implementation, and a mechanism for monitoring the resolution. If the complainant is satisfied with the proposed resolution, the grievance will be considered closed.

Step 5: Appeal and Escalation

If the complainant is not satisfied with the proposed resolution, they can file an appeal. Appeals will be reviewed by the RDU's Director within 15 working days. If a satisfactory resolution is still not reached, the grievance can be escalated to IFAD or to the national environmental or social authority.

Step 6: Closure and Documentation

Once a grievance is resolved, the outcome will be documented in the Grievance Register, including the actions taken and the final status of the complaint. All grievance records will be maintained and reviewed periodically to identify any recurring issues and to improve the project's social and environmental performance.

4. Monitoring and Reporting

The GRM system will be monitored continuously to ensure its effectiveness. The RDU will produce annual reports summarizing the number of grievances received, the nature of the grievances, the status of resolution, and any systemic issues identified. This information will be used to inform project management decisions and improve stakeholder engagement.

5. Confidentiality and Anonymity

The GRM will ensure confidentiality and anonymity where requested. No personal details of complainants will be disclosed without their explicit consent, and anonymous grievances will be treated with the same level of attention as identified grievances.

6. Awareness and Capacity Building

The RDU will conduct regular awareness-raising activities to inform stakeholders about the GRM, including its objectives, procedures, and available submission channels. Training sessions for project staff and community representatives will also be held to ensure effective implementation and understanding of the GRM.

7. IFAD's complaints procedure

IFAD projects must be carried out in compliance with its environmental, social and climate policies and safeguards. Projects should also promote the sustainable use of natural resources, build resilience to climate change and be led by rural people themselves.

IFAD's Complaints Procedure[66] ensures that appropriate mechanisms make it possible to file a complaint with IFAD if a person or persons believe(s) they are, or might be, adversely affected by an IFAD project that is not complying with IFAD's Social, Environmental and Climate Assessment Procedures (SECAP).

Every individual or group has the right to voice their complaints in relation to IFAD's work without threats to their safety or fear of retaliation.

The procedure does not apply to complaints related to sexual harassment, exploitation and abuse. These complaints should be reported to IFAD's Ethics Office[67]. Complaints related to fraud, corruption, or financial and administrative matters should be reported to IFAD's Office of Oversight and Audit[68].

- To submit a complaint by email, download the Complaints Form from this link: https://www.ifad.org/en/web/new-ifad.org/social-environment-assessment-procedures/complaints-and-incidents and send the completed version to SECAPcomplaints@ifad.org.

- To submit a complaint by mail, fill in the Complaints Form (Word) and send it to:

IFAD, SECAP Complaints
Office of Development Effectiveness (ODE)
Via Paolo di Dono, 44
00142 Roma, RM, Italy

The complaint should include the following information:

- Name, address, telephone number and other contact information

- Whether the complainants wish to keep their identity confidential, and if so, why

- Name, location, and nature of the IFAD project/programme

- How the Complainants believe they have been, or are likely to be, adversely affected by the IFAD-supported project or programme.

[66] https://www.ifad.org/en/web/new-ifad.org/social-environment-assessment-procedures/complaints-and-incidents
[67] https://www.ifad.org/en/ethics
[68] https://www.ifad.org/en/anticorruption

Annex 4. Climate Vulnerability analysis in Grenada

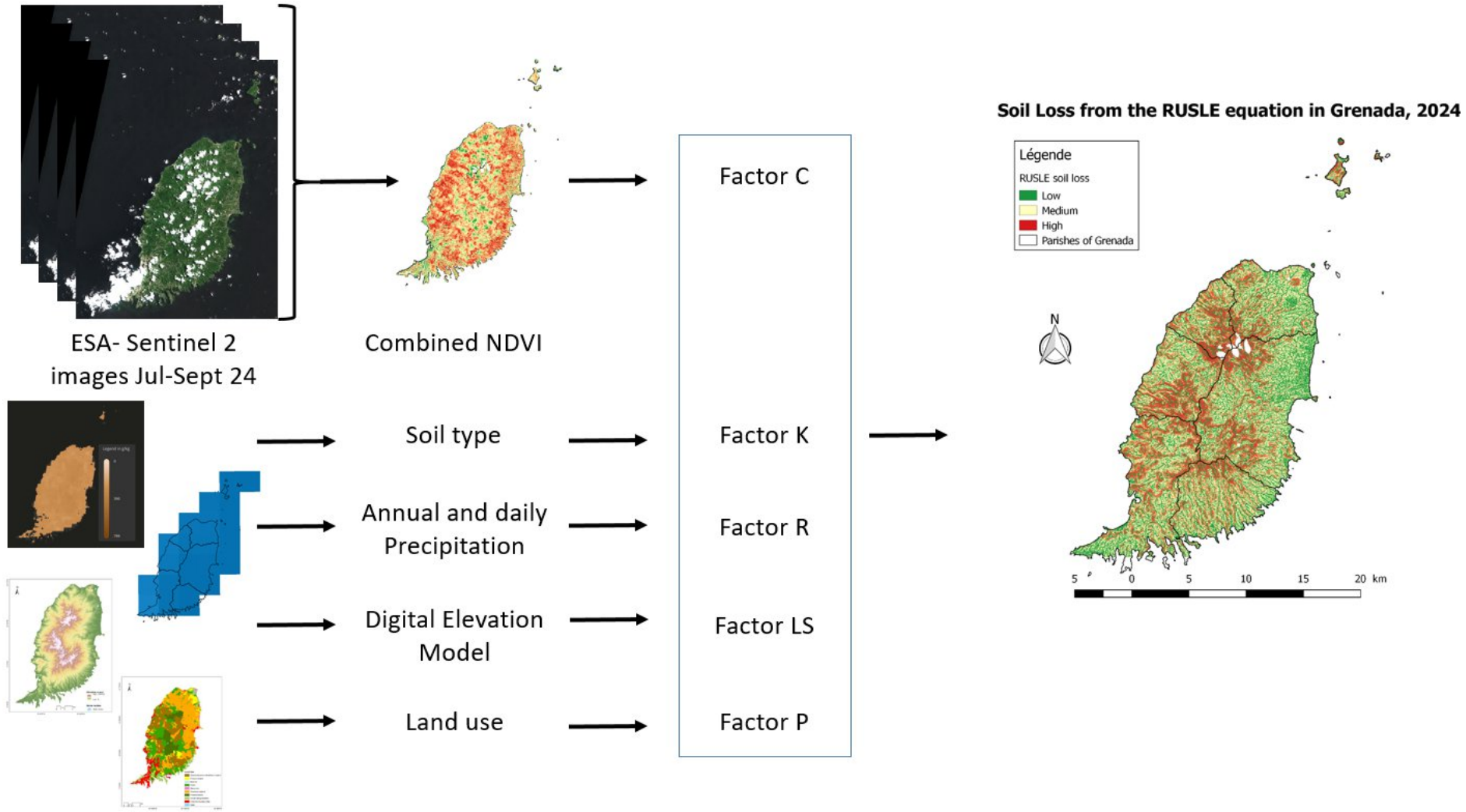
The vulnerability assessment conducted for Grenada under the ENRICH project follows an integrated approach, combining various data sources and indicators to identify regions most at risk from climate change impacts. The assessment focuses on several key components: hazard, exposure, sensitivity, and adaptive capacity. One of the critical methods applied in this analysis is the Revised Universal Soil Loss Equation (RUSLE) model, which plays a significant role in understanding soil erosion sensitivity.

Revised Universal Soil Loss Equation (RUSLE)

The RUSLE model is a widely used tool for estimating long-term average annual soil erosion caused by rainfall and runoff. It incorporates several factors, including rainfall intensity, soil type, slope length and steepness, and land cover. In the context of Grenada, RUSLE was applied to assess erosion sensitivity using the most updated data available. The model integrates data from Sentinel-2 satellite imagery, soil types from SoilGrids, annual and daily precipitation from CHIRPS and terrain information derived from NASA's Shuttle Radar Topography Mission (SRTM) to analyze erosion risk, particularly after Hurricane Beryl in 2024. The period of July to September 2024, following the hurricane, was selected to capture the immediate post-storm vegetation and soil conditions, ensuring that the erosion estimates reflect the latest and most accurate situation on the ground. To avoid the presence of clouds in the satellite imagery from the ESA dataset, we used a multi-step approach. **Multiple images were selected over the July-September 2024 period**, which provided several captures of the island under varying conditions**. Cloud masking techniques** were applied to each image to filter out cloud-covered areas. This was done by detecting cloud pixels and excluding them from the analysis. Once the clouds were removed, we took **the average of Bands B4 (Red) and B8 (Near-Infrared)** from the ESA dataset to calculate an **average Normalized Difference Vegetation Index (NDVI)** for the period. This method allowed us to build a composite image that represents the full island without interference from clouds, providing a clear and accurate assessment of vegetation and land cover during the post-Hurricane Beryl period.

The RUSLE model results provided a detailed understanding of where erosion risks are highest, helping to highlight vulnerable areas that are prone to land degradation and loss of soil fertility. These findings, in combination with other environmental factors, informed the sensitivity component of the vulnerability assessment. Below is the figure of the overlay of the data to produce the RUSLE for Grenada in 2024.

Figure 16: RUSLE in Grenada, 2024



Sources: NASA, CHIRPS, ESA, SOILGRID, WorldCover.

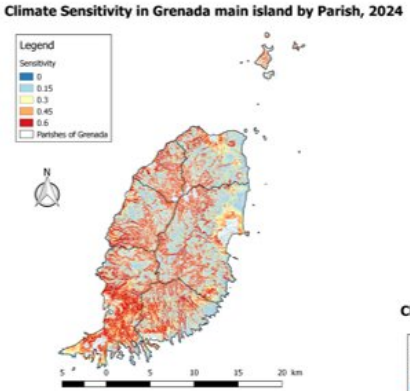
Overlaying Maps to Develop the Vulnerability Index

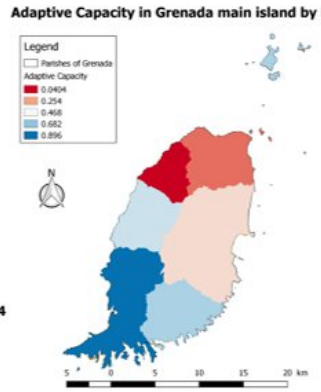
The vulnerability index was created by overlaying multiple thematic maps, each representing one of the key vulnerability components:

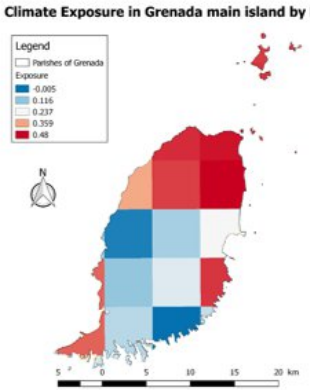
Vulnerability Component	Indicator	Data Source	Period	Data Resolution
Hazard	High precipitation events (>20mm/d)	CHIRPS	1981-2023	5km
Exposure	SPEI – drought index at 18 months period	CHIRPS TerraClimate	1981-2023	5km
Sensitivity	Population density	Worldpop	2020	100m
	RUSLE – Soil Loss by year	ESA/Sentinel – CHIRPS – SOILGRIDS – SRTM/NASA	2024	10 m
Adaptation Capacity	Poverty	GoG	2008	Per Parish
	Electricity	GoG	2011	Per Parish

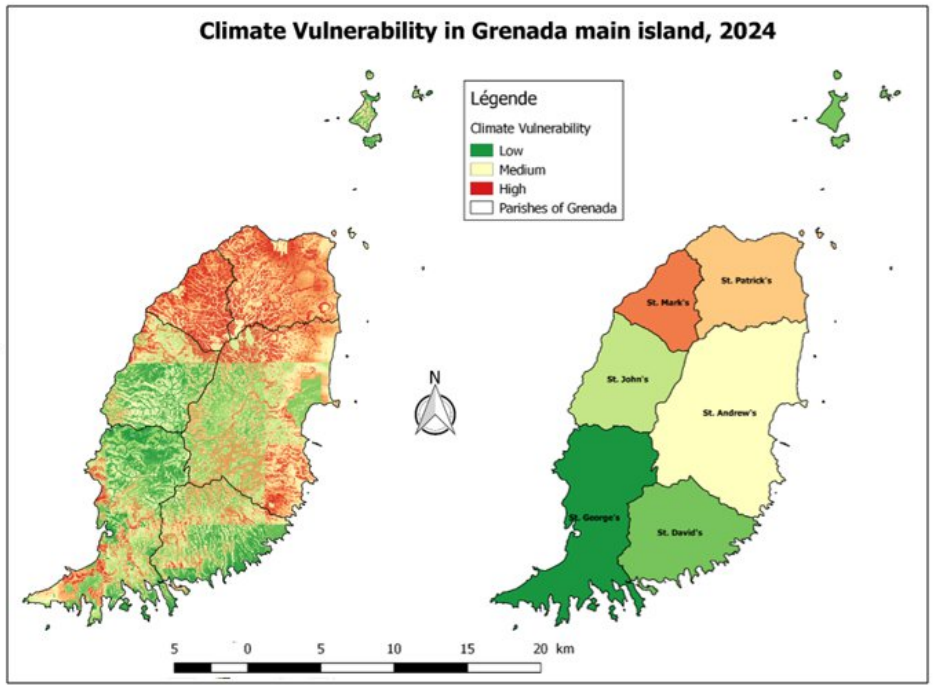
Each layer was standardized and all the layers were then overlaid to produce a composite vulnerability map, identifying the areas most at risk from climate change impacts. This index enabled the Programme to prioritize interventions in the most vulnerable parishes of Grenada, including St. Mark's, St. Patrick's, and St. Andrew's.

Figure 17: Exposure and Hazard, Sensitivity, Adaptive Capacity and Climate Vulnerability in Grenada, 2024.


Climate Sensitivity in Grenada main island by Parish, 2024
Legend
Sensitivity
0
0.15
0.3
0.45
0.6
Parishes of Grenada
N
5 0 5 10 15 20 km


Adaptive Capacity in Grenada main island by Parish, 2024
Legend
Parishes of Grenada
Adaptive Capacity
0.0404
0.254
0.468
0.682
0.896
N
5 0 5 10 15 20 km


Climate Exposure in Grenada main island by Parish, 2024
Legend
Parishes of Grenada
Exposure
-0.005
0.116
0.237
0.359
0.48
N
5 0 5 10 15 20 km


Climate Vulnerability in Grenada main island, 2024
Légende
Climate Vulnerability
Low
Medium
High
Parishes of Grenada
St. Mark's
St. Patrick's
St. John's
St. Andrew's
St. George's
St. David's
N
5 0 5 10 15 20 km

Annex 5. Gender Analysis and Gender Action Plan

Part I. Situational analysis

Demographic statistics

The population of Grenada is estimated at 113,015 people (2021) of which 36.69% live in urban areas and 63.3% in rural areas. The percentage of female population is 49.65% compared to 50.35% male population. Grenada has 0.79 thousand more males than females what it means that the sex ratio in Grenada is 101.41 males per 100 females[69]. The 14.4% of the population is in the range of 15-24 years, considered as a young population. This percentage is distributed evenly between men and women. The maternal mortality rate was 21 per 100,000 live births in 2020[70] and the infant mortality rate was 14.42 in 2021.[71] For 2022, life expectancy at birth was 75.34 years, with that of women being 5.7 years higher than that of men (Men 72.6 and Women 78.3)[72]

Poverty

In 2018, Grenada faced significant challenges regarding poverty, with a quarter of its population living in poverty conditions and 3.5% in extreme poverty. The gender distribution showed a slight female majority, representing 54% of the poor population, while men constituted 46%. Even more concerning was the situation of households headed by women with children, which accounted for 15.1%73 of households in poverty, revealing a particular vulnerability in this demographic group.

Education

Primary education in Grenada encompasses children from ages 5 to 12. Boys have an impressively high enrollment rate of 99.4%, indicating near-universal participation in primary education for male children. In contrast, girls have a slightly lower, though still substantial, enrollment rate of 93.1%[74]. This difference of over 6 percentage points suggests that while both genders have good access to primary education, there may be some factors affecting girls' participation more than boys.

In Adults, the literacy rates in Grenada reached impressive levels in 2014, with an overall literacy rate of 98.6% across the population. Notably, this high level of literacy was equally distributed between genders, with both men and women achieving the same 98.6%[75] literacy rate. This statistic indicates that Grenada has been highly successful in providing equal access to basic education and literacy skills for both males and females.

Grenada has made significant progress in eradicating gender disparity at primary and secondary levels. However, gender gaps remain in tertiary education and skills training, with lower participation rates for men and boys. Subject choice segregation, influenced by gender stereotyping, affects women's school-to-work transition and income potential.[76]

Women´s voice and agency

In terms of voice and agency, women's representation in Grenada's government exhibited improvements by 2020; however, data in this area are limited. With 46.7% of seats in Parliament being held by women (compared to 26.7% in 2000), Grenada was above the regional average of 33% in terms of representation. In 2022 women in parliaments decreased to 31,25%, below the regional average[77.] However, other indicators of agency, such as female representation in top

[69] Statistics Times. https://statisticstimes.com/demographics/country/grenada-demographics.php#google_vignette
[70] https://datos.bancomundial.org/indicador/SH.STA.MMRT?locations=GD
[71] Portal de Indicadores Básicos. Región de las Américas. OPS. https://opendata.paho.org/es/indicadores-basicos
[72] Portal de Indicadores Básicos. Región de las Américas. OPS. https://opendata.paho.org/es/indicadores-basicos
[73]World Bank. (2021). Living Conditions in Grenada Poverty and Equity Update.
https://documents1.worldbank.org/curated/en/367321631770928387/pdf/Living-Conditions-in-Grenada-Poverty-and-Equity-Update.pdf
[74]Unicef. (2017). Situation Analysis of Children in Grenada. https://www.unicef.org/easterncaribbean/media/1341/file/ECA-GRENADA-SitAn-Web-2017.pdf
[75]United Nations Educational Scientific Cultural Organization (UNESCO). UIS.Stat. Montreal: UIS; 2021. https://hia.paho.org/es/paises-2022/perfil-granada
[76] National Plan Secretariat Ministry of Finance, Planning, Economic, and Physical Development. (2019). National Sustainable Development Plan.
https://observatorioplanificacion.cepal.org/sites/default/files/plan/files/GRANADA-NSDP20202035.pdf
[77] World Development Indicators. https://datatopics.worldbank.org/world-development-indicators/themes/people.html

management positions and data on different forms of gender-based violence are still lacking[78].

Women remain underrepresented in decision-making roles in both the public and private sectors. In 2019, around 42 percent of all ministerial positions in Grenada were held by women, a figure higher than the average of 33 percent in the Latin America and Caribbean (LAC) region, yet still significantly lower than the 47 percent of parliamentary seats also held by women. However, female representation declines markedly at higher management levels, reflecting the persistence of a glass ceiling. A recent ILO study revealed that while 50 percent of women in Grenada hold middle management positions, only 20 percent reach top executive levels. Although more than 60 percent of the companies surveyed described their culture as inclusive[79]. There remains a widespread perception that women face greater challenges in reaching leadership positions, even when they possess the same qualifications and skills as men.

Legal status of women

The law generally provided the same legal status and rights for women as for men. Article 1 of the Constitution of Grenada states that "everyone in Grenada is entitled to fundamental rights and freedoms, regardless of race, place of origin, political opinions, color, creed or sex, but subject to respect for the rights and freedoms of others and the public interest…".

Grenada stated its commitment to gender equality and women's empowerment through the ratification of Convention on the Elimination of all forms of Discrimination against Women (CEDAW) and the Inter-American Convention on the Prevention, Punishment and Eradication of Violence against Women. Grenada has also endorsed the Beijing Declaration and Platform for Action, the SDGs, the Montevideo Strategy for Implementation of the Regional Gender Agenda within the Sustainable Development Framework by 2030, and the SAMOA Pathway. Together, these form the normative framework for gender equality and the empowerment of women.

In Granada, however, there are limitations to the implementation of the agreements. For example, as recorded in the 2023 Country Reports on Human Rights Practices: Grenada, in its section on discrimination and social abuses, the law criminalized rape of men and women, including spousal and domestic or intimate partner rape and other forms of domestic and sexual violence. The law did not specify criminalization of so-called corrective rape of lesbian, gay, bisexual, transgender, queer, or intersex (LGBTQI+) persons; however, it stipulated a sentence of flogging or up to 30 years' imprisonment for any nonconsensual form of sex. Authorities generally enforced the law effectively. According to women's rights monitors, violence against women and children remained a serious and pervasive problem.

The law either prohibited sexual harassment, but there were no criminal penalties for it, the government noted it was a persistent problem. The Gender-based Violence Unit and Social Services within the Ministry of Social Development conducted awareness drives and assisted survivors of sexual harassment.

The law did not provide for civil or criminal penalties for sexual harassment in employment. The law did not explicitly prohibit discrimination based on gender for access to credit. The government enforced the law effectively.

Sociocultural factors related to gender

In Grenada, traditional gender roles continue to exert a significant influence across many sectors of society. These deeply ingrained expectations shape the social dynamics and responsibilities attributed to men and women. Women are commonly expected to take on the role of primary caregivers, bearing the main responsibility for household management and childcare. This societal norm often places a disproportionate burden of domestic duties on women. In rural areas, agricultural women are generally rendered invisible in their productive role, when there are men in the household with whom they share tasks. They are seen as helpers and therefore, their possibilities of accessing

[78] World Bank Group. Grenada Country Gender Scorecard. 2021
[79] World Bank (2021). Breaking Barriers to Women's Economic Inclusion in Grenada
https://documents1.worldbank.org/curated/en/099603503082357057/pdf/IDU0d3d82498080b0049d80931b04db7448ac3d6.pdf

assets and services for production are considerably reduced. Conversely, men are typically viewed as the primary economic providers for their families. This traditional division of labor reflects persistent cultural attitudes that assign distinct roles based on gender, potentially limiting opportunities and choices for both men and women in various aspects of their lives, including career paths, employment opportunities, access to assets and services for production and personal development.[80]

Gender-based violence.

Intimate partner violence/domestic violence and sexual violence are persistent problems in Grenada, Carriacou, and Petite Martinique. In recent years, actions have been taken to gain a deeper understanding of the problems and more significantly, to sensitize and mobilize individuals, communities, and various sectors to take action to respond to victims and offenders and prevent those forms of violence[81] in 2018 was carried out "The Grenada National Women's Health and Life Experiences Survey". The key findings[82] reveal that emotional abuse, the most common form of IPV; and physical violence are more prevalent than sexual violence:

- One in every four Grenadian women has suffered physical violence at some point in their life.
- Close to one in every ten Grenadian women has experienced sexual violence over her lifetime.
- Emotional abuse is the most common form of IPV and is suffered by about three in every 10 Grenadian women.
- Among the 26.9 percent of Grenadian women who suffer lifetime physical violence from their intimate partner, for more than two-thirds of them this violence is severe – hitting, kicking, burning or threatening with a weapon.
- For many women, the abuse does not stop during pregnancy. Among ever-pregnant women, 5.3 percent reported being beaten during at least one pregnancy, including in her stomach.
- Over their lifetime, almost one in every four Grenadian women will have experienced at least one form of non-partner sexual violence which includes acts of rape (10.7%); attempted rape (10.4%); and unwanted sexual touching (15.5 %).

[80] World Bank (2021). Breaking Barriers to Women's Economic Inclusion in Grenada https://documents1.worldbank.org/curated/en/099603503082357057/pdf/IDU0d3d82498080b0049d80931b04db7448ac3d6.pdf
[81] National Plan Secretariat Ministry of Finance, Planning, Economic, and Physical Development. (2019). National Sustainable Development Plan. https://observatorioplanificacion.cepal.org/sites/default/files/plan/files/GRANADA-NSDP20202035.pdf
[82] United Nations. Barbados and the Eastern Caribbean. "*1 in every 3 women in Grenada will experience Intimate Partner Violence*". Press Releases. August 2020

Employment

Employment rates in Grenada show a significant gender disparity in labor market participation. Men have a notably higher employment rate at 59%, while women's employment rate stands at 43%. This gap is further emphasized by the fact that for every 100 men participating in the labor market, only 74[83] women do so. These statistics highlight a considerable gender imbalance in workforce engagement, suggesting that women face greater barriers or have fewer opportunities in accessing employment.

An analysis of working conditions in Grenada reveals notable gender disparities in employment patterns. Women face higher unemployment rates compared to men, with a 19.5% unemployment rate for females versus 14.5% for males. This gender gap is even more pronounced among youth aged 15-24, where female unemployment reaches 34%, significantly higher than the 22% rate for young males. Interestingly, when it comes to working hours, a larger percentage of men (26.6%) work between 41-60 hours per week compared to women (19.7%)[84]. This could suggest that men are more likely to engage in full-time or overtime work. The data also indicates that Grenadian women, more than men, are concentrated in lower income brackets. Also are predominantly employed in service and sales roles, clerical support positions, and as private employees. These statistics highlight persistent gender-based differences in employment opportunities, job types, and working hours, and income in Grenada's labor market.

In agriculture, forestry and fishing women are underrepresented (5% compared to 16.5 percent men)[85], meaning that women represent approximately 23% of the workforce in the Agriculture, Forestry and Other Land Use sector. Furthermore, gender segregation into lower-paid jobs exists in these sectors. For example, most workers on crop farms are women, live-stock farming and fishing are male-dominated, and the majority of workers in cocoa and nutmeg factories (for sorting and packing) are women (Caribbean Policy Development Center 2021). It is important to take into consideration that official figures on women's participation in this sector generally underestimate their real participation, due to the invisibility of their contributions when the male figure is recognized as the person in charge of production and head of the household.

Access to land

Agricultural data from Grenada reveals significant gender disparities in land ownership and employment within the sector. Male holders in the household sector significantly outnumber females, with 6,631 male holders compared to 2,675 female holders. This gender imbalance is also reflected in the composition of holders' households, where male members (16,046) exceed female members (14,219). The disparity is even more pronounced in agricultural employment, with 3,886 male employees working on holdings compared to only 566 female employees. Age distribution data for holders shows that for both genders, the majority fall within the 50-59 years age bracket, followed by the 40-49 years group[86]. However, the number of male holders consistently surpasses female holders across all age categories, with the gap being particularly wide in younger age groups. This data suggests a substantial gender imbalance in agricultural land ownership and employment in Grenada, with men dominating across all metrics and age groups.

Gender-based impacts of climate change

The agricultural sector and tourism sector are particularly susceptible to natural disasters and the broader impacts of climate change, such as rising sea levels, droughts, and shifting weather patterns, which pose significant risks to the population and their livelihoods. These challenges are already intensifying Grenada's development issues, highlighting the urgent need for a more robust

[83] CEPAL. (2023). https://statistics.cepal.org/portal/inequalities/employ-and-social-protection.html?lang=es&indicator=2471
[84] World Bank (2021). Breaking Barriers to Women's Economic Inclusion in Grenada https://documents1.worldbank.org/curated/en/099603503082357057/pdf/IDU0d3d82498080b0049d80931b04db7448ac3d6.pdf
85 World Bank (2021). Breaking Barriers to Women's Economic Inclusion in Grenada https://documents1.worldbank.org/curated/en/099603503082357057/pdf/IDU0d3d82498080b0049d80931b04db7448ac3d6.pdf
[86] FAO. (s.f). https://www.fao.org/3/ca6956en/CA6956EN-GD-data.pdf

institutional approach to disaster risk management and the protection of natural resources. [87]

Coastal households face heightened risks from natural disasters, and in Grenada, a greater percentage of impoverished households reside in high-risk zones compared to their non-impoverished counterparts. In 2018, 4.2 percent of poor households were located within 10 meters (33 feet) of the ocean, while 3.2 percent were similarly close to a river, in contrast to 3.3 percent and 3.7 percent of non-poor households, respectively. Furthermore, a higher proportion of poor households worry about isolation from landslides, with 17.0 percent expressing concern compared to 10.1 percent of non-poor households. Both groups, however, showed significant apprehension regarding potential flooding that could result in isolation[88]. According to the Gender Impact Assessment of Hurricane Ivan (2005), the living conditions of many poor female-headed households worsened after the disaster[89].

Assigned roles and gender inequalities aggravate the impacts of climate change on women and the households under their responsibility. Cultural aspects, their socioeconomic status and the territories where they are located determine the intensity of the effects. The differences in roles and responsibilities between men and women significantly influence their ability to make decisions and adopt measures to deal with climate variations and implement mitigation and adaptation actions and disaster risk reduction. Rural women are especially affected due to the environment in which they live and their dependence on forests, agriculture, coasts and the sea as their main sources of work and food. The scarcity of resources of all kinds generated by climatic events affects the supply of resources and basic services necessary for the execution of domestic and care tasks, such as water, energy and food, increasing the complexity of their performance, as well as the direct consequences on the health and nutrition of women and their families.

Women have less access to climate information and are less involved in decision-making than men. For both reasons, they may not be prepared for a climate emergency. During natural disasters, due to their domestic and caregiving role, their main concern is the well-being of their family members, limiting their mobility and ability to seek information and help. Pregnant women, girls, and mothers with young children may experience additional challenges regarding mobility and the loss of support systems, which can occur due to family disruptions. Women's time demands tend to increase in the face of climate shocks. The analysis of what happened during Hurricane Ivan showed that women, who represent a large proportion of informal workers, did not have access to formal social security mechanisms. At the same time, as childcare centers were severely damaged, women's time as primary caregivers were also directly affected.[90]. During droughts, women and girls experience greater demands on their time as they are responsible for collecting and distributing water. All of these restrictions affect their resilience, make them more vulnerable and reduce their ability to adapt to extreme climate variations.

To enhance gender responsiveness in Grenada's climate change and adaptation strategies, several key actions are recommended. Firstly, it's crucial that Grenada's subsequent National Adaptation Plan (NAP) and all sector plans are informed by gender and sex-disaggregated data, ensuring they are truly gender-responsive. This should be complemented by the use of intersectional and gender-based analysis plus (GBA+) approaches in data collection at both national and local levels. Additionally, efforts should be made to enhance the national gender agency's knowledge of climate change risks, mitigation, adaptation, and disaster management to facilitate the mainstreaming of gender in related national measures. While the identification of gender focal points in governmental agencies and ministries is a positive first step, more comprehensive efforts are needed for effective gender mainstreaming. This includes mapping these focal points, assessing their knowledge base,

[87] World Bank. (2021). Living Conditions in Grenada Poverty and Equity Update.
https://documents1.worldbank.org/curated/en/367321631770928387/pdf/Living-Conditions-in-Grenada-Poverty-and-Equity-Update.pdf
[88] World Bank. (2021). Living Conditions in Grenada Poverty and Equity Update.
https://documents1.worldbank.org/curated/en/367321631770928387/pdf/Living-Conditions-in-Grenada-Poverty-and-Equity-Update.pdf
[89]WBG. Gender and Disasters Risk Management: Grenada Country Profile.
https://documents1.worldbank.org/curated/en/099625111282240498/pdf/P1712560312b6901c097740224d911ff486.pdf?_gl=1*1je878m*_gcl_au*NDk0MTIwMTI4LjE3MjM3MjUzMzI.
[90] World Bank (2021). Breaking Barriers to Women's Economic Inclusion in Grenada
https://documents1.worldbank.org/curated/en/099603503082357057/pdf/IDU0d3d82498080b0049d80931b04db7448ac3d6.pdf

providing training to address knowledge gaps, and allocating both financial and time resources for gender-related activities. These steps are essential to ensure that gender considerations are thoroughly integrated into Grenada's climate change and adaptation policies and practices.[91]

Although there is no specific information available about the impact of the recent Hurricane Beryl (July 2024) on women and their families, the SAEP Hurricane Beryl Damage Assessment Report[92] highlights the importance of accelerating timely response processes to emergencies due to extreme weather events in the country and, especially, the adoption of measures that allow women to have the appropriate preparation and resources to adaptively face the effects caused by these phenomena.

Public policies and institutions

Grenada has recently intensified its focus on gender issues and rural women's empowerment through various policies and programs. The cornerstone of these efforts is the Grenada National Gender Policy and Development Plan 2014-2024, and the National Sustainable Development Plan (2020-2035).

The first incorporates the basic principles underlying the human rights framework, which are universality and indivisibility, equality and non-discrimination, participation and inclusion, accountability and the rule of law. This policy was further reinforced by the Medium-Term Agenda (2019-2021), which integrated gender equality as a cross-cutting theme, ensuring its consideration across various sectors and policy areas.

This National Gender Policy specifically targets the economic empowerment of rural women, aiming to improve their access to productive resources and promote their leadership in agriculture and fisheries.

In relation to climate action and sustainable development, this policy includes commitments to ensure the equal participation of men and women in the development of strategies and mechanisms for climate change adaptation (approach 2), to ensure that DRR approaches consider differential gender impacts and the need for differential approaches to recovery and resilience building (approach 1) and to undertake gender analysis and gender impact assessments (approach 3).

The Ministry of Social Development, through its Gender Unit, plays a crucial role in coordinating women-focused initiatives, including providing technical training and microcredits for rural women entrepreneurs.

The Secretariat of Agriculture, Lands and Forests within MED contributes to these efforts through its Rural Women's Access Program, which aims to improve rural women's access to land, agricultural inputs, credit, and markets. These combined initiatives demonstrate Grenada's commitment to economically empowering rural women and promoting gender equality in agriculture.

Through skills training, microcredit schemes, and facilitating access to productive resources, Grenada is working to unlock the potential of its rural women, fostering both individual empowerment and broader economic development.[93]

Looking towards the future, Grenada drafted its National Sustainable Development Plan (2020-2035) (NSDP). It recognizes gender disparities as a weakness of the local context and not only includes gender equality as one of its key themes but also incorporates it as a cross-cutting theme throughout the plan. This consistent and multi-faceted approach to gender equality in national policies suggests a sustained effort to address gender disparities and promote equal opportunities across all aspects of Grenadian society.[94]

Accordingly, in this NSDP, Grenada has shown commitment to gender equality through international

[91]UNWomen. (2021). Gender Inequality of Climate Change and Disaster Risk in Grenada
[92] SAEP. Rural Development Unit. (2024). *Hurricane Beryl Damage Assessment Report.*
[93] CEPAL (s.f). Gender Mainstreaming in National Plans.
https://www.cepal.org/sites/default/files/presentations/gender_mainstreaming_in_national_plans_in_grenada.pdf
[94] CEPAL (s.f). Gender Mainstreaming in National Plans.
https://www.cepal.org/sites/default/files/presentations/gender_mainstreaming_in_national_plans_in_grenada.pdf

agreements and national policies, including the National Gender Equality Policy and Action Plan (GEPAP) 2014-2024. The country has adopted gender mainstreaming as its primary strategy and established an Inter-Ministerial Council of Gender Focal Points[95].

The NSDP #1 National Goal refers to "High Human and Social Development: Putting People at the Center of Sustainable Development and Transformation" and one of its Outcomes refers to a Resilient, Inclusive, Gender-Sensitive, and Peaceful Society.

The NSDP aims to achieve gender equality, parity, equity and balance, and to build a gender-sensitive society. It includes three sets of gender equality indicators: education and training; economic empowerment; and gender-based violence.

Gaps

In Grenada, a complex web of gender-based disparities persists across various sectors of society, hindering the full participation and empowerment of women and girls. These gaps span multiple dimensions, including economic opportunities, education, legal protections, sociocultural norms, climate change impacts, political representation, and access to information. These gaps are as follows:

Gender Disparities: Women face significant gender disparities in employment, leadership representation, and access to land and resources.
Poverty and Vulnerability: Female-headed households and those in high-risk geographic areas are more vulnerable to poverty.
Educational Disparities: Girls have slightly lower primary education enrollment and literacy rates compared to boys.
Legal and Institutional Gaps: Gender laws are not fully implemented, and gender-based violence remains a serious issue.
Sociocultural Norms and Gender Roles: Traditional gender roles limit women's economic opportunities and participation in decision-making.
Gender-Based Impacts of Climate Change: Women are more vulnerable to the impacts of climate change due to their roles and lower access to information and decision-making.
Public Policy and Institutional Response: Gender is not well integrated into climate action and disaster risk reduction strategies.
Representation and Agency: Women's political representation in parliament has declined in recent years.
Access to Information and Participation: Women have limited access to climate information and participation in decision-making processes.

Recommendations

To address the multifaceted gender gaps in Grenada, a comprehensive set of recommendations has been developed, targeting various aspects of society and governance. These recommendations aim to promote gender equality, empower women and girls, and create a more inclusive society. The proposed strategies span across multiple domains, including economic empowerment, social protection, education, legal reforms, and cultural shifts. They advocate for promoting women's employment and entrepreneurship, enhancing social protection for vulnerable households, improving girls' access to education, and strengthening legal protections against gender-based discrimination and violence. These recommendations are as follows:

Gender Disparities: Promote women's employment, entrepreneurship, and access to resources.
Poverty and Vulnerability: Enhance social protection and targeted housing support for vulnerable female-headed households.
Educational Disparities: Improve access to education for girls and monitor school attendance.
Legal recommendations: Strengthen legal protections against gender discrimination and gender-based violence.

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[95] National Plan Secretariat Ministry of Finance, Planning, Economic, and Physical Development. (2019). National Sustainable Development Plan. https://observatorioplanificacion.cepal.org/sites/default/files/plan/files/GRANADA-NSDP20202035.pdf

Sociocultural Norms and Gender Roles: Challenge traditional gender roles and recognize women's contributions in rural areas.
Gender-Based Impacts of Climate Change: Integrate gender considerations into climate strategies and provide climate education for women.
Public Policy and Institutional Response: Strengthen gender mainstreaming in public policies and increase budget allocations for gender equality.
Representation and Agency: Promote women's political participation and monitor gender representation in leadership.
Access to Information and Participation: Improve women's access to information and engagement in decision-making processes.

Part II: Gender Action Plan (GAP)

The Enhancing the resilience of vulnerable small Island Communities to climate change hazards in Grenada (ENRICH) is committed to the social inclusion of the most vulnerable groups of the population linked to the country's agricultural and fishing activities. It focuses on producers located in areas of greatest risk to climatic events and among them, small producers (men and women), who have limited financial resources and small properties, being particularly vulnerable to climate change. Additionally, it seeks to ensure that men and women, young people and adults, have access to all the services offered by the program, so that they are part of the objective of "achieving climate resilience and adaptive capacity of small Granada producers through climate-smart agricultural practices and resilient infrastructure in landscapes prone to droughts and hurricanes". The ENRICH project is structured in three components and has the following outcomes and outputs.

Table 21: Enrich project outcome and output table

Component 1. Drought- and hurricane resilient infrastructure for vulnerable rural communities
Outcome 1.1. Vulnerable communities have improved access to a sustainable use of water and to drought and hurricane-resistant infrastructure
Output 1.1.1 Capacities of communities enhanced to maintain water collection systems
Output 1.1.2 Public ponds and water infrastructure is restored to improve water catchment and storage
Output 1.1.3 Farm connections are established using a landscape approach
Output 1.1.4 Hurricane-resistant infrastructure constructed
Component 2. Climate-resilient innovations and investments for vulnerable rural households and their most vulnerable members
Outcome 2.1. Vulnerable rural households and their most vulnerable members have greater capacity to adapt to climate change
Output 2.1.1 Capacity of women and youth on entrepreneurial marketing and business development reinforced
Output 2.1.2. Climate-adaptive agricultural technologies and best practices promoted
Output 2.1.3 Resilience enhancing investments financed
Component 3. Climate resilient institutions and risk mitigation framework
Outcome 3.1. Improved capacity of local institutions and vulnerable communities to manage and share climate adaptation knowledge and cope with adverse climatic shock
Output 3.1.1 Institutional capacity strengthened for the implementation of policy measures, climate action reporting advocacy and Knowledge Management
Output 3.1.2 Vulnerable agroforestry farmers equipped with parametric microinsurance for the agricultural sector

The preparation of the Action Plan required i) a review of the commitments of international financial organizations (International Fund for Agricultural Development (IFAD) and the Adaptation Fund (AF) expressed in their policies, strategies and actions to ensure gender equality in their projects, ii) the analysis of national laws and policies and current international commitments, as well as institutional policies and strategies and iii) the Gender Analysis contained in the first part of this document, which provides an overview of the gender gaps and problems faced by women in Grenada, based on a bibliographic review of national and international sources.

The Action Plan is prepared based on the structure of the Components and the Results Framework

of the Program. It is presented as a matrix according to the requirements of the Adaptation Fund. This matrix contains the components and activities by expected result and product, indicators and goals, the implementation schedule and the assignment of responsibilities. It previously includes measures that must be considered in the execution of the Program to contribute to the reduction of gender gaps and the active participation of women and youth in the services and benefits contemplated in each component.

Measures to contribute to the reduction of gender gaps

***Ensure access to relevant Project information*.** Dissemination of project opportunities among the target population will be carried out through mechanisms (community meetings, radio programmes, posters, etc.) that take into account the participation of women, using female role models and gender-inclusive language. Outreach and awareness-raising campaigns, using appropriate and culturally relevant communication channels, are essential to inform and motivate the participation of remote rural communities and marginalized subgroups.

Participation in Project activities. The most appropriate times for carrying out project activities will be identified so that women have the opportunity to participate. The project has an ambitious overall target of 40% participation of women, which varies however, by specific activity. It is essential to ensure their representation in leadership roles within the Project, such as management committees and working groups, to amplify their voice in decision-making processes. Training programmes will be inclusive in their design to address the specific needs of each vulnerable subgroup. These programmes should be adapted to accommodate participants with different levels of education and capacities. Through the various training sessions, awareness will be raised about the importance of support from men in families in carrying out domestic and care tasks.

Availability and accessibility of the services provided by the Project. Ensuring the availability and accessibility of the services and technologies offered by the Program requires an inclusive approach. A comprehensive gender analysis and initial diagnosis as part of the Program's baseline, which incorporates community consultations, are the first steps to deepen and better understand the specific needs, barriers and opportunities of each gender group. This information should guide the inclusive design of services and technologies, adapting them to address the specific limitations and needs of each gender. The establishment of access quotas is also included to ensure an equitable distribution of resources among groups according to gender. Additionally, it implies that service providers and Program managers are duly aware of gender equality and prepared **to open access opportunities to women.**

Capacity Building and Knowledge Exchange. Providing transportation to training centers or ensuring the availability of technology in remote rural areas through mobile community centers or mobile phone-based technologies can improve physical and digital access to training. The inclusion of content to raise awareness of gender equality among all project participants, including service and technology providers, helps to reduce cultural barriers that could limit women's participation. Recognition and appreciation of traditional knowledge contributed by men and women from their own experiences are key to the training processes.

Table 22: Women participation by output, and component

	Total Beneficiaries	Women benef.	%
Component 1.			
Output 1.1.3 Farm connections established with a landscape approach	600	200	33,3
Output 1.1.1 Capacities of communities enhanced to maintain water collection systems	625	250	40,0
Component 2.			
Output 2.1.1 Climate-adaptive agricultural technologies and best practices promoted	3000	1000	33,3

Table 22: Gender Action Plan (GAP)

Objective: Promote climate resilience and adaptive capacity of smallholder farmers in Granada, especially women and youth, through climate-smart agricultural practices and resilient infrastructure in drought- and hurricane-prone landscapes					
Component 1. Drought and hurricane resilient infrastructure for vulnerable rural communities					
	Indicators	**Goal**	**Calendar**	**Responsible**	**Budget (USD)**
Outcome 1.1. Women in vulnerable communities have improved access to a sustainable use of water and to drought and hurricane-resistant infrastructure	Number of women with access to improved water services for agriculture	200		PCU/RDU	806,298
Output 1.1.1 Women's capacities to maintain water collection systems enhanced	Number of women farmers trained	250		PCU/RDU in collaboration with the Grenada Bureau of Standards and NAWASA	48,580
Activity 1.1.1.1 Design of gender-sensitive and women-involved training programmes	Gender-sensitive training programme on water collection systems	1	Y1	PCU/RDU in collaboration with the Grenada Bureau of Standards	7,150
	% of women trained	40	Y1		41,430
Output 1.1.4. Hurricane-resistant infrastructure constructed with gender considerations	Number of hurricane resistant assets* constructed	50		PCU/RDU	757,718
Activities 1.1.4.1 Construct and rehabilitate hurricane-resistant infrastructure	Guide for identification and construction with a gender focus prepared	1	Y1	PCU/RDU	7,150
	Number of infrastructure and facilities built or rehabilitated according to the guidance	50	Y2 to Y5	PCU/RDU	750,568
Component 2: Climate-resilient innovations and investments for vulnerable rural households and their most vulnerable members					
	Indicators	**Goals**	**Calendar**	**Responsible**	**Budget**
Outcome 2.1. Women and youth in vulnerable rural households have greater capacity to adapt to climate change and cope with adverse climate shocks	% of women and youth of the total project beneficiaries who report greater capacity to adapt to climate change and cope with climate shocks	50		PCU/RDU	1,662,391
Output 2.1.1. Capacity built on entrepreneurial marketing and development with a particular focus on women and youth	Number of women and youth trained on vocational skills and in business development	270		PCU/RDU in collaboration with key partners such as GIDC, GNTA, and TAMCC	751,815
Activity 2.1.1.2. Implementation of training programs for women and youth on vocational skills	Number of women and youth trained on vocational skills	180	Y2	PCU/RDU in collaboration with key partners such as GIDC, GNTA, and TAMCC	511,569
Activity 2.1.1.3. Implementation of training programs for women and youth on entrepreneurship, business development and marketing	Number of women and youth trained on entrepreneurship, business development and marketing	90	Y2 to Y4	PCU/RDU in collaboration with key partners such as GIDC, GNTA, and TAMCC	240,245
Output 2.1.2 Capacity of women farmers on CSA reinforced via FFS	Number of women implementing CSA technologies and practices	840		PCU/RDU	164,020
Activity 2.1.1.1. Capacity building for extension services in methodologies and techniques for the inclusion of beneficiaries with a gender focus (women and youth)	% of extension workers trained in methodologies and techniques for the inclusion of beneficiaries with a gender focus	100	Y1	PCU/RDU in collaboration with the UWI and CARDI	7,150
	Technologies and good practices adapted from a gender perspective	5	Y1	PCU/RDU	7,150
Activity 2.1.2.2. Implement the Farmer Field School (FFS) mainstreaming climate change and gender approach	Number of women trained and receiving technical assistance	1200	Y2 to Y4	PCU/RDU	120,000
Activity 2.1.2.4. Extension services promote active participation of women in Farmer Field Schools	% of women of the total of farmers in Farmer Field Schools (FFS)	40	Y2 to Y5	PCU/RDU	29,720
Output 2.1.3 Resilience enhancing investments financed	Number of women and youth implementing resilience enhancing investments with Project financing	600		PCU/RDU	746,557
Activity 2.1.3.1 Establishing a small grants programme for resilience-enhancing technologies that prioritizes women and youth as beneficiaries	Number of small grants programs for resilience-enhancing technologies, designed with criteria prioritizing women and youth	1	Y2 to Y5	PCU/RDU	7,150
	% of women and youth who access small grants	40	Y2 to Y5	PCU/RDU	739,407
Component 3. Climate resilient institutions and risk mitigation framework					
	Indicators	**Goals**	**Calendar**	**Responsible**	**Budget**

Outcome 3.1. Governance Framework and Risk Management capacities are strengthened	% of women accessing tailored climate information for resilience strengthening (planning and decision-making processes).	50		PCU/RDU	26,000
Output 3.1.1 Institutional capacity strengthened for the implementation of policy measures, climate action reporting and advocacy	Number of institutional stakeholders trained on policy and regulatory measures, and trained to monitor, report and verify climate action with emphasis on strategic mechanisms	50		PCU/RDU	26,000
Activity 3.1.1.1 Implement institutional actions to collect information from the field with a gender and intersectionality focus	Project database with information differentiated according to gender and intersectionality	1	Y1 to Y5	PCU/RDU	7,150
Activity 3.1.1.2. Build the capacities of key institutions to assess the impacts of climate change on women involved in the agrifood sector and the cocoa value chain.	Number of key institutions with capacity to assess the impacts of climate change on women	5	Y1	PCU/RDU	18,850
Output 3.1.2 Vulnerable agroforestry farmers equipped with parametric microinsurance for the agricultural sector	Number of women covered with innovative parametric micro-insurance	20		PCU/RDU	14,300
Activity 3.1.2.1. Parametric microinsurance for vulnerable agroforestry farmers	Innovative parametric micro-insurance in place, taking into consideration the high vulnerability condition of women	1	Y3 to Y5	PCU/RDU	14,300

Notes on GAP Budget estimates
Activity 1.1.1.1. Proportion of PCU (GAP application and gender-oriented studies) costs dedicated to ensuring gender mainstreaming: 10%.
Activity 1.1.1.2. Proportion of activity costs dedicated to ensuring gender mainstreaming: 40%.
Activity 1.1.4.1a. The infrastructure costs include studies required for rehabilitation / reconstruction. These studies will integrate gender guidelines developed with resources from the ´application of the gender action plan´ and inputs from ´gender-specific assessments´ under the PCU component costs. These correspond to 10% of PCU costs dedicated to ensuring gender mainstreaming.
Activity 1.1.4.1b. Proportion of activity costs dedicated to ensuring gender mainstreaming: 10%.
Activity 2.1.1.2. Proportion of activity costs dedicated to ensuring gender mainstreaming: 60%.
Activity 2.1.1.3. Proportion of activity costs dedicated to ensuring gender mainstreaming: 60%.
Activity 2.1.1.1a. Proportion of PCU (GAP application and gender-oriented studies) costs dedicated to ensuring gender mainstreaming: 10%.
Activity 2.1.1.1b. Proportion of PCU (GAP application and gender-oriented studies) costs dedicated to ensuring gender mainstreaming: 10%.
Activity 2.1.2.2. Proportion of activity costs dedicated to ensuring gender mainstreaming: 40%.
Activity 2.1.2.4. Proportion of activity costs dedicated to ensuring gender mainstreaming: 10%.
Activity 2.1.3.1a. The criteria will be developed with resources from the ´application of the gender action plan´ and inputs from ´gender-specific assessments´ under the PCU component costs. These correspond to 10% of PCU costs dedicated to ensuring gender mainstreaming.
Activity 2.1.3.1b. Proportion of activity costs dedicated to ensuring gender mainstreaming: 40%.
Activity 3.1.1.1. Proportion of PCU (GAP application and gender-oriented studies) costs dedicated to ensuring gender mainstreaming: 10%.
Activity 3.1.1.2. Proportion of activity costs dedicated to ensuring gender mainstreaming: 10%.
Activity 3.1.2.1. Proportion of PCU (GAP application and gender-oriented studies) costs dedicated to ensuring gender mainstreaming: 20%.

Annex 6 Lessons learnt from Climate Smart Agriculture and Rural Enterprise Programme

Lessons learnt from IFAD's financed projects in Grenada
Rural development.

Since the last IFAD financed interventions in Grenada, the approach for the development of rural areas has been a complex multi-sectoral intervention that recognizes the entanglement of diverse economic activities and the vast and varied needs of the different subgroups of rural poor. Supporting agriculture only is not sufficient to improve the livelihood of vulnerable population in rural areas. Small businesses in agro-processing or non-agricultural activities are also part of the process, which makes the intervention more complex and requires seeking collaboration beyond the traditional institutional partners.

IFAD has championed in supporting rural enterprises in a varied range of sectors in the last projects, finding that even though agriculture is the backbone of the rural economies, the other activities not related to agriculture are part of a subsistence strategy for poor families. Most poor households engage as vendors, process agricultural products or provide services, with little or no access to technical support services, so they remain at a subsistence level. Realizing that some of these activities might have the potential to consolidate and become a profitable business, IFAD financed the setting up of a Training and Outreach Centre for the Grenada Investment Development Corporation (GIDC) in St Andrews, one of the poorest parishes in the rural sector. GIDC is a public owned local institution that provides support to the Small and Micro Enterprise (SME) sector and has its headquarters in St Georges'. The new Training and Outreach Centre will support microenterprises in all sectors, with particular focus on business development services such as registration, business plans and training. Early training in Entrepreneurship allows participants to understand the requirements for starting a business, the skills they need to run the business and the different functions they have to master –technology, marketing, finance and administration-, increasing the chances of success by ensuring preparedness. The consolidation of non-agricultural businesses contributes to improving the livelihood of poor rural households on sustainable basis.

IFAD's experience also indicates that social needs are as pressing as economic needs and the intervention cannot address all of them. Building synergies with other institutions to address social infrastructure needs, gender equality and domestic violence or health issues allow rural development projects to provide responses while focusing on their own goals and objectives related to reduce poverty. Grenada created the Rural Development Unit (RDU) as an institutional framework for rural development that houses two flagship programs: the Climate Smart Agriculture and Enterprise Development Programme (SAEP) and the Basic Needs Trust Fund (BNTF), the first one focused on poverty reduction and the second on social infrastructure. Investments of both projects are supported by partnerships with other institutions such as the Gender Department of the Ministry of Social Affairs, the Ministry for Youth and Sports, the Royal Grenada Police Force, etc. Nonetheless, the project needs to react and take action when immediate needs are affecting the effectiveness of the intervention. For example, the Entrepreneurship Training conducted by GIDC identified that some of the dropouts were caused by emotional distress that required counselling. The recruitment of counselling services allowed to reduce dropouts and has been identified as a lesson learnt for future training to vulnerable population. The immediate support allowed the beneficiary to identify the problem and look for help. The same happened with the COVID 19 pandemic, when many members of the target population could not access online training due to lack of access to Internet. Service providers took specific actions, not specifically considered at design, to address the issue and assist them to continue training. For example,

GIDC linked with the Internet providers to improve access in certain areas. Ensuring access to Internet to all rural areas is part of the social infrastructure plans of the GOG.

Rural development projects have recently focused on addressing CC, either through adaptation or mitigation, and protecting the environment. The extreme vulnerability of rural population to CC was made evident last June with Hurricane Beryl. There were vast damages in rural areas that the SAEP had to respond, as some of them affected the investments financed by the project. Extreme events will become more frequent in the future and development projects need to be include disaster preparedness investments, disaster mitigation support for beneficiaries and strengthening disaster relief mechanisms and policies.

Lessons learnt.

i. Rural development must have a comprehensive approach, supporting all economic activities that rural poor engage as part of their subsistence strategy. Projects must involve institutions that provide quality technical services in many economic sectors supporting all activities to increase productivity and income.
ii. Rural development projects must have a comprehensive but focused approach. The intervention must provide immediate support on situations that negatively affect the ability of beneficiaries to benefit from the services and opportunities provided by the project. Nonetheless, the strategy should consist of looking for synergies with other institutions in order to remain focused on the primary goal of reducing rural poverty. Involving and collaborating with relevant institutions, particularly for addressing social needs, ensures the project remains focused and ensures the sustainability of support after project completion, building linkages for further assistance if required.
iii. Rural poor are highly vulnerable to external shocks, particularly to natural disasters. Projects must be flexible to address catastrophic events as well as include specific mechanisms for unforeseen shocks on the livelihoods of the target group.

Agriculture

Farmers produce and market on individual basis, with a vast majority of small holders -80% of total farmers- producing cash crops in the rainy season. The low quality of produce and the dependence on climatic conditions makes agriculture a risky business. Organizations in rural areas are small and become active for a specific purpose, usually accessing funds or services from the Government. The investments that involve a group of farmer usually rely on public institutions and the facilities or infrastructure depend on the Government for maintenance or governance. Farmers usually regard the adoption of CSA practices for adaptation to CC as an individual endeavor, with little involvement on larger scope interventions –such as rehabilitation of ponds, reforestation of basins or catchment areas- that are generally planned and implemented by the Government. SAEP provided incentives to groups in accessing grant financing, but the vast majority of proposals for adopting CSA practices were individual farmers. Any intervention at this level should take into account this cultural feature and implement awareness campaigns at the community level in order to foster empowerment and sustainable public-private partnerships.

There is limited experience on supporting value chain development in Grenada. Since the country has a strong dependency on food imports, most processing firms are cottage size and involve very little number of primary producers. The most integrated value chains in Grenada relate to nutmeg and cocoa production, processing and exporting. The nutmeg industry –with a long history in the country where it used to be the second world's largest exporter- was severely hit by Hurricanes Ivan and Emily 20 years ago. The recovery is underway and Grenada is currently the 8th nutmeg exporter in the world. The cocoa value chain also involves smallholders and is significant for

international trade. Both products represent around 23% of total exports. The cocoa value chain, developed with more private drive than the nutmeg industry, is composed of a larger number of processing plants open to new market opportunities or product diversification. An investment in this value chain has the potential to reach a larger number of smallholders and strengthen small firms that are willing to grow, particularly in the export market.

Agriculture is a traditional activity in Grenada, regarded as a last resort in case of an economic downturn. It is considered only a subsistence activity for smallholders, with low income levels and traditional practices that cannot compete with imported products. Farmers work in agriculture during the rainy season, creating gluts in the market, and getting employment in other sectors –mainly construction- in the rest of the year. This part-time approach yields low-income levels and cannot encourage the development of a sustainable business. The vast majority do not keep records, hence they are not aware if making profits or which crop is more profitable. SAEP provided marketing support; after working with farmers for three years, the PCU had to provide business management training, as beneficiaries continued using the same practices and producing certain products by tradition, not questioning the benefit of producing this specific crop or using this specific practice.

The average age of farmers is 57 years old; the opinion of many officers of the Secretariat of Agriculture, Lands and Forests within MED is that young people is not interested in agriculture. Nonetheless, the experience of SAEP indicates that youth engage in agriculture when approaching agriculture as a business, with modern technologies and targeting market opportunities. The GIDC training on entrepreneurship to young men and women fostered looking for business opportunities at their own community level. Most of initiatives proposed were linked to agriculture or agro-processing, showing that there are business opportunities in agricultural production, marketing and processing. These businesses participated in a fair organized by the PCU and were the most successful, having high sales and good feedback from buyers. Since youth is a critical resort for the long-term development of rural communities, the promoted activities must be suitable for involving young men and women in agriculture. For example, those lines of production with less requirement for land –a usual barrier for women and youth- such as hydroponics, or high value products that provide the highest income per unit of land or services that add value to meet market demands, might be more appealing for women and youth than producing traditional cash crops.

Lessons learnt.

i) Farmers regard organization as a way to access some public programs but they work their farms individually and market individually. The support on-farm must be on individual basis, yet the larger scope investments also necessary for effectiveness and efficiency, usually planned and run by the Government, must be part of the intervention. This mix of private-public infrastructure must be part of an overall intervention plan. In the case of shared infrastructure, like public ponds or irrigations systems, there must be clear rules on the management of facilities and the maintenance over time. Farmers need to empower from shared facilities; projects must provide training and organizational strengthening to users promoting their involvement in managing and maintaining the infrastructure.
ii) The nutmeg and cocoa industries are exceptional due to its vertical integration, guided by the processing industry to ensure quantity and quality of produce. The support to these two industries may benefit a large number of small farmers and firms that are willing to grow and increase exports. Support and capacity building must focus on the specific needs of all stakeholders within the value chain.

iii) Most farmers approach agriculture as a traditional activity without considering if they are making profit or a loss in their activities. Fostering a new approach to agriculture with business orientation, technology and investments is key for ensuring a higher income from agriculture.
iv) Targeting youth for the adoption of technologies may be more successful and sustainable than targeting traditional farmers, as they aim at becoming full time farmers and business oriented.
v) Young men and women usually have limited access to land, so that the intervention must prioritize those production methods and products that reduce the need for land or increase the produce and income per unit of land.

Inclusion of youth

Comprehensive approach to training of vulnerable youth. The unemployment rates among youth has been structurally high in the Caribbean. Grenada is no exception and the rates among youth double or more than double those of adults. The GOG has addressed this issue with different training programs that aim at building the skills demanded by the labor market to become employed. Most of these programs have shown that there are important components in the training that go beyond the specific technical content of the course. For example, Like Skills Training is considered key; it is addressing skills, habits and attitudes that contribute to get the job –including CV preparation and how to perform in a job interview- and how to retain the job opportunity –such as punctuality, understanding the system's rules and expectations over their performance-. In the case of the entrepreneurship training, the remedial training on English and Math proved essential to attain the level of the course. The experience of SAEP showed that besides levelling training, youth from poor rural communities often require counselling services due to emotional distress related with issues at the household level –primarily domestic violence or lack of adult orientation-. Identifying the needs and providing the required support is crucial for success.

The lack of income sources during the training is somewhat offset by stipends that cover transportation, part of the meals and child-care. Nonetheless, the SAEP's experience showed that the poorest of the poor drop out the course whenever an income opportunity arises, even if it is for a very short period. The ability of the trainer to motivate and locate enterprises providing internship opportunities during the course are crucial for the success of the training and the reduction of dropouts.

SAEP championed on a new approach for addressing youth unemployment, the promotion of start-ups through entrepreneurship training, technical and financial support. The experience was highly successful, the dropout rates very reduced and the number of businesses created were beyond the original targets. Taking into account that microbusinesses constitutes a traditional subsistence strategy for poor families and a means to diversify income, the support for young men and women to create and consolidate a sustainable business contributes to improving the livelihood of the household in the long-run.

Lessons learnt:

i) Vulnerable youth have specific constraints that must be taken into consideration when designing the intervention. Most of them have deficiencies in basic skills and knowledge gaps that hamper their chances of success in getting employment or participating in training. Technical training and support, either through Vocational Skills Training, Entrepreneurship, Marketing or Business Development services, require assessing the need for remedial training in Math and English and the implementation of Life Skills Training. Focused support based on needs for a stipend during training to cover basic needs or for child-care, contribute to reduce dropouts of the most vulnerable.

ii) Enhancing skills to get employement is not the only way to address high rates of youth unemployment. Promoting entrepreneurship to start new businesses is another means that proved successful. This increases the resilience of the household in case of external shocks. Youth might become the leaders of a development process if adequately trained and supported, providing grounds for a sustainable improvement in rural communities.

Food security and nutrition

Grenada is a net importer of food products. The Government is fostering the growth of agricultural output as a means to increase food security, based on the experience of the COVID 19 pandemic that boosted agricultural products in face of the halt in international trade. Being Grenada a service economy led by tourism, the demand for high quality products makes the competition with imports extremely challenging for poor farmers.

Nutrition has been regarded as a matter that does not pertain to the extension services realm. SAEP provided nutrition training to school children involving the National Nutrition Council and the extension assistants. The experience was highly positive; the training used local products with an approach of learning by doing, so that the recipes were practiced and tried by the children. The experience suggests that targeting children and their parents at schools in rural areas might be a successful approach, as most extension workers consider that these topics do not relate to their knowledge transfer. It is interesting to remark that female farmers were interested in improving their back yard garden produce and were more open to receive technical support with a nutrition point of view. Extension workers must be aware of the importance of back yard gardens in the food intake of rural poor and must receive training on nutrition concepts in order to provide technical support for increasing produce that improves the diet and meets the nutrition requirements of the household.

Lesson learnt.

i) Nutrition training must be part of the extension services knowledge transfer.
ii) Using a learning by doing approach is effective and may encourage adopting changes in the daily diet.
iii) Training on how to grow and consume local products for a healthy diet must be a component of promoting back yard garden production.

Financial services

Financial services for agriculture are provided by the Grenada Development Bank and Credit Unions in rural areas, basically for short term needs. Long term financing for investments is provided only by specific programmes with external financing with very limited success. The Caribbean Development Bank (CDB) co-financed the IFAD funded Market Access and Rural Enterprise Programme (MAREP) with a specific focus on a credit line for farmers through the Grenada Development Bank (GDB). At the Medium Term Review the funds were reallocated to infrastructure due to the lack of success of this intervention. There was a combination of inability of farmers to meet the requirements and a reluctance of the officers to promote the opportunity as they considered these were high risk operations.

Smallholders do not have guarantees for accessing loans due to lack of land titling or even formal arrangements with the land-owner. Many times they carry a bad record in the public banks due to politically driven programs that encourage widespread delinquency or due to natural disasters that meant a complete loss of assets and production. The private financial sector regards agriculture as a high-risk sector and is not willing to engage in this type of programs if they must bear the risk of the loans, which makes the intervention non-sustainable. Additionally, loan officers are used to assess short term loans based on high rotation of income –like vendors- or provision of guarantees.

Programmes like the one financed by CDB have trained officers in repayment capacity assessment but this is not the regular practice in the financial sector.

Most farmers are not willing to take loans, as their profit margins are too low to bear the financial cost. This translates into a vicious cycle in which poor farmers cannot access financing because their yields and incomes are low and they cannot improve production because they lack the financing to upgrade their technology. The provision of grants for investments is meant to break this circle by allowing farmers to increase production and income to become viable clients for financial institutions. Projects must promote the link between grant recipients and financial services since the beginning of implementation to make this relationship successful.

Lessons learnt.

i) There is a market failure regarding long term financing for agriculture. Only public programs have offered this type of financial products but rural poor cannot access these credit lines because they lack land titles or fixed assets to offer as guarantee.
ii) There have been public programs promoting access to financial services with a political drive. The result has been widespread delinquencies that leave vulnerable population worse off for accessing formal financial services.
iii) Promoting access to financial services can only be successful when productivity and income has increased enough to bear the financial cost.
iv) Rural poor require grant financing for investments as a first step that builds the necessary conditions –in terms of productivity, income and assets- for accessing short-term loans.
v) Projects must be proactive in communicating results and involving financial institutions since the beginning of implementation to promote the link with grant recipients.

Climate Change

The reduced size of Grenada indicates that most climate monitoring and meteorological services are closely linked with regional institutions and mechanisms. Even though this is the logical approach, there is still room for developing local specific knowledge on vulnerabilities to CC and innovative CSA practices. For example, systematic assessment and monitoring of soil and water resources in order to measure the impact of CC is still limited. Local or regional efforts for addressing this issue are dependent on availability of external financing with reduced impact and continuation on the institutions that should take this responsibility.

The topic of CC is assimilated to good agricultural practices among extension officers of the Secretariat of Agriculture, Lands and Forests within MED , which is correct but not enough. Investments on farm and in preventive measures –like rehabilitation, reforestation and management of small watersheds-or research and development of local technical solutions are still scarce. Most farmers use traditional approaches that do not necessarily follow best agricultural practices. Their common view is that increasing production means applying more chemicals, not regarding soil management or crop rotation as an effective measure. The provision of capacity building on conservation is crucial to increase income –reduce costs- and raise awareness on the correct management of pesticides, reducing contamination of surface and ground water.

Farmers do realize that there are changes in the rainfall pattern that are affecting the cropping cycle or increasing the drought periods, but they lack the capacity and knowledge to take action. Supporting the adoption of CSA practices and raising awareness among rural communities must be at the core of any rural development intervention.

The extreme vulnerability of Grenada to CC has opened many opportunities to access Green Finance. There are different projects under implementation in Grenada promoting adaptation to

CC or mitigation of CC impacts. Grenada, being a SIDS, lacks the qualified resources for implementing all of these initiatives successfully, even when some of them share similar objectives or similar intervention instruments. Most of the times external donors target supporting a specific sector and have a partial view of the projects that are under implementation or in the pipeline for that same area. There is little capacity from the GOG to prioritize and propose areas for intervention, so that many times the financing is following the supply logic instead of meeting the actual needs of the country.

In order to have a local agenda on investments to address CC, actions must be taken towards strengthening the policy and technical institutions that monitor the impacts of CC, report to the regional or global institutions and link with the regional institutions to access knowledge and coordinate actions. This means coordinating and building capacity in the Ministry of Climate Resilience, the Environment and Renewable Energy, the Meteorological Services, the Ministry of Agriculture, Forestry and Lands, the Ministry of Economic Development, Planning and Cooperativesof Economic Development, Planning, Tourism, ICT, Creative Economy, Culture, Agriculture, and Lands, Forestry, Marine Resources and Fisheries and & Cooperatives of Grenadaand Ministry of Finance in order to avoid duplications and to develop a pipeline of integrated and coordinated interventions.

Lessons learnt.

i) There is little preparedness for addressing CC among farmers and institutions, in spite the high vulnerability of the rural sector to the impacts of CC. Awareness and training must focus on local vulnerabilities, best agricultural practices and innovative CSA approaches in order to increase resilience.
ii) Institutions related to CC and coordination of mechanisms on Green finance must be strengthened to improve implementation efficiency. The intervention should include the capacity building of each stakeholder within the public and private sector, as well as supporting the establishment of coordination mechanisms at the policy and implementation level.

Targeting criteria

SAEP started using one targeting criteria across the board based on the characteristics of poor households, namely: a) head of the household being single; b) more members than the average size of households in Grenada (3 persons); c) at least one adult member unemployed; and, d) at least one adult member of the household has no secondary or tertiary education. Beneficiaries had to meet at least two of these characteristics to qualify for support. These criteria derive from the findings of the last poverty study available at the time of design. The main drawback when applying these criteria to farmers is that their households may not comply with these criteria although they are poor. First, farmers are usually senior persons with no siblings in the household, which means the household has very few members. Second, all members of the household are engaged in agriculture or related activities, so usually there are no unemployed members. Hence, farmers had to comply with the head of the household being single and one adult member without secondary or tertiary education to qualify for assistance. Extension assistants flagged this drawback when completing the intake form since they could perceive that many smallholders were not meeting these two criteria in spite they were poor.

Applying targeting criteria to identify rural poor is crucial for directing grant financing to those unable to adopt resilience-enhancing technologies or start/consolidate businesses due to a lack of seed capital. For activities like training or technical assistance, targeting can help offset disadvantages while reaching a broader audience to maximize impact. For instance, SAEP raised awareness among entire communities and supported schoolchildren via partnerships with the MOALF's 4H department.

However, SAEP's criteria overlooked climate vulnerabilities, assuming rural poor are most exposed due to farming on steep slopes and poor soils. Some resilience-building interventions, such as shared infrastructure, require a geographic or collective approach. Assuming better-off farmers will independently access knowledge and invest may be overly optimistic and risk delaying implementation.

Lesson learnt:

i) One targeting criteria across the board may exclude specific groups of rural poor.
ii) Targeting criteria must be specific according to the subgroups of the rural population and the type of support provided to ensure the highest potential impact.
iii) Indicators on climate vulnerabilities must be included in projects aiming at increasing resilience to CC and variability.

Project Management

Grenada is a SIDS with a small size and reduced population, only 126,000 inhabitants. The competition for qualified staff among projects is strong, as there are many opportunities for migration for individuals with high educational attainment levels. This translates into reduced implementation capacity for projects, repeated recruitment processes for specialized staff in the implementing units and long periods without a full complement of staff, which hampers the progress as planned. IFAD has championed in the strategy of building capacity in junior staff until they get the required qualifications to perform technical responsibilities in specialists' positions. At present there is a group of officers that participated in various IFAD financed projects, received comprehensive training and are now proficient in IFAD's guidelines and procedures. The continuation of this group in future IFAD projects reduce the preparation stage, providing higher value for money.

SAEP was successful in recruiting consultants for highly specialized areas, like Gender or Environmental and Social Management Plans. Highly specialized professionals can be recruited for short periods, but are not willing to engage as staff of the project since they have many offers for short term engagements or are already committed to certain activities along the year. Exploring other contract arrangements, like retain contracts, might be a way to access specialized support, at local or regional level.

The reduced size of SIDS also presents difficulties with procurements, as sometimes there is only one supplier for a specific good. The application of IFAD's rules regarding competitive processes do not apply necessarily, particularly for small amounts that do not justify international procurement. The acknowledgement of these characteristics since the beginning is key to include the required waivers in the loan agreement.

Lessons learnt.

iv) The scarcity of qualified staff needs to be addressed since the design, attempting to retain qualified and experienced staff from ongoing projects and investing in capacity building of junior staff when required.
v) Difficulties in recruiting specialized staff can be offset by short term local or regional consultants through retain contracts, providing input at specific stages and training the PCU to monitor and/or carry out activities.
vi) The size of the island indicates that competitive procurement processes yield many times the same supplier or a single supplier. These characteristics should be taken into account in the loan agreement to facilitate and expedite processes when this situation is proven true.