ADAPTATION FUND

AFB/PPRC.36/16
15 September 2025

Adaptation Fund Board
Project and Programme Review Committee
Thirty sixth Meeting
Bonn, Germany, 7-8 October 2025

Agenda Item 4(n)

PROPOSAL FOR SAINT LUCIA

Background

1. The Operational Policies and Guidelines (OPG) for Parties to Access Resources from the Adaptation Fund (the Fund), adopted by the Adaptation Fund Board (the Board), state in paragraph 45 that regular adaptation project and programme proposals, i.e. those that request funding exceeding US$ 1 million, would undergo either a one-step, or a two-step approval process. In case of the one-step process, the proponent would directly submit a fully-developed project proposal. In the two-step process, the proponent would first submit a brief project concept, which would be reviewed by the Project and Programme Review Committee (PPRC) and would have to receive the endorsement of the Board. In the second step, the fully-developed project/programme document would be reviewed by the PPRC, and would ultimately require the Board's approval.

2. The Templates approved by the Board (Annex 5 of the OPG, as amended in March 2016) do not include a separate template for project and programme concepts but provide that these are to be submitted using the project and programme proposal template. The section on Adaptation Fund Project Review Criteria states:

> *For regular projects using the two-step approval process, only the first four criteria will be applied when reviewing the 1st step for regular project concept. In addition, the information provided in the 1st step approval process with respect to the review criteria for the regular project concept could be less detailed than the information in the request for approval template submitted at the 2nd step approval process. Furthermore, a final project document is required for regular projects for the 2nd step approval, in addition to the approval template.*

3. The first four criteria mentioned above are:
   (i) Country Eligibility,
   (ii) Project Eligibility,
   (iii) Resource Availability, and
   (iv) Eligibility of NIE/MIE.

4. The fifth criterion, applied when reviewing a fully-developed project document, is:
   (v) Implementation Arrangements.

5. It is worth noting that at the twenty-second Board meeting, the Environmental and Social Policy (ESP) of the Fund was approved and at the twenty-seventh Board meeting, the Gender Policy (GP) of the Fund was also approved. Consequently, compliance with both the ESP and the GP has been included in the review criteria both for concept documents and fully-developed project documents. The proposal template was revised as well, to include sections requesting demonstration of compliance of the project/programme with the ESP and the GP.

6. At its seventeenth meeting, the Board decided (Decision B.17/7) to approve "Instructions for preparing a request for project or programme funding from the Adaptation Fund", contained in the Annex to document AFB/PPRC.8/4, which further outlines applicable review criteria for both

concepts and fully-developed proposals. The latest version of this document was launched in conjunction with the revision of the Operational Policies and Guidelines in November 2013.

7. Based on the Board Decision B.9/2, the first call for project and programme proposals was issued and an invitation letter to eligible Parties to submit project and programme proposals to the Fund was sent out on April 8, 2010.

8. The following project concept document titled “Replicating Resilient Water Supply Systems Project in St. Lucia (Re-Water St. Lucia)” was submitted for Saint Lucia by the Caribbean Community Climate Change Centre (CCCCC), which is a Regional Implementing Entity of the Adaptation Fund.

9. This is the third submission of the project concept proposal using the two-step submission process.

10. The current submission was received by the secretariat in time to be considered in the forty-fifth Board meeting. The secretariat carried out a technical review of the project proposal, assigned it the diary number AF00000425, and completed a review sheet.

11. In accordance with a request to the secretariat made by the Board in its 10th meeting, the secretariat shared this review sheet with CCCCC, and offered it the opportunity of providing responses before the review sheet was sent to the PPRC.

12. The secretariat is submitting to the PPRC the summary and, pursuant to decision B.17/15, the final technical review of the project, both prepared by the secretariat, along with the final submission of the proposal in the following section. In accordance with decision B.25.15, the proposal is submitted with changes between the initial submission and the revised version highlighted.

ADAPTATION FUND BOARD SECRETARIAT TECHNICAL REVIEW OF PROJECT/PROGRAMME PROPOSAL

PROJECT/PROGRAMME CATEGORY: Regular-sized Project Concept

Country/Region: Saint Lucia
Project Title: Replicating Resilient Water Supply Systems Project in St. Lucia (Re-Water St. Lucia)
Thematic Focal Area: Water Management
Implementing Entity: Caribbean Community Climate Change Centre (CCCCC)
Executing Entities: United Nations Office for Project Services (UNOPS)
AF Project ID:
IE Project ID: **Requested Financing from Adaptation Fund (US Dollars):** 9,992,305
Reviewer and contact person: Ahmad Ghosn **Co-reviewer(s):**
IE Contact Person:

Technical Summary	The project "Replicating Resilient Water Supply Systems Project in St. Lucia (Re-Water St. Lucia)" aims to enhance climate resilience in the water sector by ensuring secure, reliable, and safe water access through climate-smart infrastructure improvements, capacity building, and comprehensive public education. This will be done through the five components below: Component 1: Building resilience into the water supply infrastructure and systems (USD 5,200,500); Component 2: Optimization of potable water supply and reliability (USD 1,900,000); Component 3: Strengthening institutional capacity and systems for climate responsive management of water resources (USD 590,000); Component 4: Improving water conservation among water users for a climate resilient water sector (USD 460,000); Component 5: Enhancing learning, knowledge transfer, and dissemination of best practices for climate-resilient water management in Micoud (USD 260,000). Requested financing overview: Project/Programme Execution Cost: USD 798,998 Total Project/Programme Cost: USD 9,209,498 Implementing Fee: USD 782,807 Financing Requested: USD 9,992,305 The first technical review of 15 January 2025 raised several issues, such as revising some information and adding others missing; revising the project total cost amount; dividing component 1 into two components and adding more details on components activities; specifying the AF objectives/ outcomes supported by the project; clarifying the project theory of change; substantiation of project benefits and cost effectiveness; adjusting execution costs to align with AF limits; adding more details on related projects complementarities and lessons learned; clarifying whether consultations with local communities were conducted and adding more details on the consultation process and consideration of vulnerable groups/ gender aspects; revising the justification of requested financing on the basis of

	full cost of adaptation reasoning; providing a brief discussion on the project risks/ impacts and specifying the project overall risk category as per the AF requirements; among others as discussed in the Clarification Requests (CRs) and Corrective Action Requests (CARs) raised in the review. The second technical found that most of the CRs and CARs raised in the first technical review were adequately addressed, except for few that warranted more clarification. These included: i) some edits/ corrections; ii) presenting allocated amounts to the nearest dollar; iii) providing a brief summary of the preliminary cost-benefit analysis; iv) adding date of the "Saint Lucia Climate and Adaption Policy"; v) clarifying the "no risk" statement for "Indigenous Peoples" principle and inclusion of brief discussion on the risks related to "Conservation of Biodiversity" principle in the AF "Checklist of Environmental and Social Principles". There was also need to complete Part IIIA of the CN. The third (final) technical review finds that all the CRs and CARs indicated in the second review were addressed.
Date:	**16 June 2025**

Review Criteria	**Questions**	**First Technical Review Comments January 15, 2025**	**Second Technical Review Comments May 5, 2025**	**Third (final)Technical Review Comments June 16, 2025**
Country Eligibility	1. Is the country party to the Kyoto Protocol, and/or the Paris Agreement?	**Yes.**	-	-
	2. Is the country a developing country particularly vulnerable to the adverse effects of climate change?	**Yes.** Saint Lucia a small island developing state highly susceptible to climate change impacts, including rising sea level, high intensity hurricanes, drought, erratic heavy rainfall, among others (See Part I, pp. 3-15).	-	-
Project Eligibility	1. Has the designated government authority for the Adaptation Fund endorsed the project/programme?	**Yes.** As per the Letter of Endorsement (LOE) dated November 14, 2024.	-	-
	2. Does the length of the proposal amount to no more than Fifty pages	**Yes.** However, the comments below need to be addressed	**CR1: Not cleared** Please address the below issues:	

	for the project/programme concept, including its annexes?	to improve the presented material and correct some information. **CR1:** Please address the following: 1. Include lists of acronyms, table and figures. Spell out abbreviation when first used and refer to tables, figures and annexes at related discussions. 2. Include table of contents. 3. On p.1, the type of implementing entity is repeated twice. Revise/ correct. 4. Specify source of figure 2 (p.5). 5. On p.6, reference is made to Figure 1.2.1 which is not there. Revise/ delete. 6. Add number & heading to all tables in document. 7. Titles of Part II sections should be bold. 8. Another round of editing/ proofreading for the full document after addressing the review comments is recommended. **CR2:** 1. After project/ programme objectives (Part I, p. 15) only list of the	1. On p. 1, <u>please revise amount of requested funding to be USD 9,992,305</u> not USD 10M. 2. Table 3 “Re-water theory of change”, p. 18, should be a Figure not a Table. Revise and adjust figures and tables numbering and adjust the lists of the same accordingly. **3.** On page 10 (above Climate Context) delete the paragraph “A section should be included on the WASCO’s capacities …… This should include basic information on gender mainstreaming at WASCO as a baseline for understanding where the organization is now.” as it reads out of context. 4. Another quick round of proofreading is recommended (e.g.: Part II sections titles should all be bold, etc.). **CR2: Cleared.**	**CR1: Cleared.** As per amendments on pages ee pages, 1,18, and 10. **-** **CR3: Cleared.** See Table 2, p.19.

		planned components and related expected outcomes. 2. Also, indicate the AF strategic objectives/ outcomes supported by the project. **CR3:** Move the detailed discussion of the components (pp. 15-20) to Part IIA. Include components' titles (only component 1 title is indicated) followed by respective outcome/s, output/s, and activities under each output. **CAR1:** At the end of Part I (before project components and financing table) or at the beginning of Part IIA, provide a brief discussion on the project theory of change and a schematic presentation of the same. **CAR2:** In the Project/ Programme Components and Financing table (pp. 21-22), the total project cost should be USD 9,216,590 not 8,266,590. Total project cost is equal to the sum of project components total (USD 8,266,590) and execution costs (USD 950,000).	**CR3: Not cleared.** 1. In Table 4, p. 19, please add page number and present the allocated amounts to the nearest dollar (no decimals). Apply throughout the document for similar cases. 2. Please remove the $ sign on the IE fee amount and the total financing requested amount. **CAR1: Cleared.** See p. 18. **CAR2: Cleared.** Note: Amounts have slightly been modified due to component 1 redesign in two component and other minor adjustments to allocated amounts. Total requested funding is now USD 9,992,305.	- -
	3. Does the project / programme support	**Yes.**		

	concrete adaptation actions to assist the country in addressing adaptive capacity to the adverse effects of climate change and build in climate resilience?	See Part I (pp.15-20 and Part IIA, pp. 23-24. Concrete actions include upgrading water treatment/ supply systems; installing renewable energy/ energy-efficient technologies; constructing water storage and community-based rainwater harvesting systems; installing bulk and smart water meters; updating the real-time management system; building institutional capacity and raising public awareness on climate threats and risk-reduction processes associated with water resources; among others. However, the issues indicated below need to be addressed. **CAR3:** The detailed description of the components should be presented in Part IIA and should be arranged to reflect components, outcome/s under each component, output/s under each outcome and activities under each output. **CAR4:** From project design and management view, it is advisable to divide component 1 (budget is 88% of components total	**CAR3: Cleared.** See Part IIA, pp.20-26. **CAR4: Cleared.** See Table 4, p.19 and Part IIA, pp. 20-26.	**-** **-**

		cost) into 2 components with corresponding outcomes/ outputs as proposed below: Component 1: Installation of water supply infrastructure; Outcome: Enhanced access to water provision services; Output: Climate resilient water supply and network infrastructure installed. Component 2: Optimization of potable water supply and reliability; Outcome: Improved distribution and reliability of potable water supply; Output: Systems to optimize the distribution of potable water implemented.	**CR4: Cleared.** See Part IIA pp. 20-26. More details on the activities under each output would be needed at full proposal stage.	-
		CR4: In the description of the activities and where possible, provide quantitative data to demonstrate the magnitude of the works undertaken (e.g.: length of the upgraded network, number of energy efficient equipment/ systems, number of smart water meters, number of beneficiaries, number and type of participants receiving capacity building etc.). **CR5:** Component 2, Activity 2.1.4 refers to capacity building/ training to WASCO	**CR5: Cleared.** See Part IIA, Activity 3.1.4, p. 23. **CR6: Cleared.** Addressed in the narrative of Component 4, p. 24.	- -

		and other entities. Specify/ provide examples of these other entities. Identifying these entities and defining their roles would help illustrate a more comprehensive and collaborative approach to institutional strengthening. **CR6:** Component 3 appears to be closely tied to the ongoing GCF Water Readiness initiative in Saint Lucia. Please clarify further how the GCF initiative's outputs will be integrated into the project to ensure long-term resilience and whether such integration may entail any possible risks in this respect. **CR7:** Component 4 proposes establishing a central repository/ platform for project-related information, which will be maintained by the implementing entity during project implementation and later transferred to other government agencies. Specify the agencies that will take over this responsibility and how beneficiary communities in Micoud will be involved in managing or utilizing this resource.	**CR7: Cleared.** See Part IIA, pp. 25-26.	-

	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?	**Not fully addressed**. See Part IIB, pp. 25-27. The discussion is general and needs further substantiation. **CAR5:** Under all three areas (economic, social and environmental) quantify the estimated benefits, whenever possible, including information on the expected beneficiaries, with particular reference to gender aspects and equitable distribution of benefits to vulnerable communities/ groups. **CR8:** Please make reference to the initial gender assessment (Annex1) at related discussions. <u>A detailed gender assessment along with a gender action plan will be required at full stage.</u>	 **CAR5: Cleared.** See Part IIB, pp. 26-28. <u>A detailed gender assessment along with a gender action plan will be required at full proposal stage.</u> **CR8: Cleared.** See CAR5 above.	- -
	5. Is the project / programme cost effective?	**Unclear.** See Part IIC, pp. 27-28. The discussion does not adequately demonstrate cost effectiveness. **CAR6:** The discussion should demonstrate the cost effectiveness of the project approach/ interventions against other possible alternative options including status-quo. The cost effectiveness analysis	 **CAR6: Not cleared.** The discussion on p. 28 refers to a preliminary cost-benefit analysis. Please provide a brief summary of this analysis in the context of CAR6 (i.e.: against other	 **CAR6: Cleared.** See Part IIC, pp. 28-29. <u>A more detailed cost effectiveness analysis should also be provided at full proposal stage.</u>

		should be supported by related statistics as available at this stage. A more detailed cost effectiveness analysis should be provided at full proposal stage as indicated in paragraph 2 of Part IIC , p. 27.	possible alternative options/ status-quo). A more detailed cost effectiveness analysis should also be provided at full proposal stage.	
	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?	**Yes**. See Part IID, 29-30. However, relevance of other national and sectoral plans could also be considered. **CR9:** Please revise the discussion under Part IID, pp. 29-30, to reflect the listed plans in bold bulleted with dates, followed by brief discussion on their relevance. **CAR7:** Relevance of the project to other sectoral plans (e.g.: agriculture, public health, disaster risk management, etc.) should be explored/ revisited as it would enhance the project's holistic impact and ensure a more comprehensive approach to address climate-induced challenges across interconnected sectors. Moreover, on p. 30, the last statement indicates that: "…the project not only supports the objectives of the Water SASAP but also reinforces the broader	**CR9: Cleared.** See Part IID, pp. 29-30. **CAR7: Cleared.** See Part IID, p. 29.	- -

		climate resilience and sustainable development goals of Saint Lucia". Substantiate the above statement by listing relevant broader climate resilience, sustainable development plans etc.		
	7. Does the project / programme meet the relevant national technical standards, where applicable, in compliance with the Environmental and Social Policy of the Fund?	**Yes.** See Part IIE, pp. 30-32. However, some clarifications are needed as indicated below. **CR10:** At the beginning Part IIE, add a brief paragraph to indicate that the project activities will adhere to the required national standards and will obtain related approvals for relevant activities. Also, clarify whether there are any USPs that "may" require, at later stage, compliance with standards other than the listed.	**CR10: Not cleared.** See Part IIE, pp.30-31. In Table 6, p.31, please add date of the "Saint Lucia Climate and Adaption Policy".	**CR10: Cleared.** See Part IIE, pp. 30-31 and footnote number 28 "
	8. Is there duplication of project / programme with other funding sources?	**Not clearly addressed.** See Part IIF, pp. 32-33. **CAR8:** Provide a list of completed and ongoing related projects (dates and locations) and briefly discuss complementarities/ synergy and lessons learned and how these were considered in project design.	**CAR8 & CR11: Not cleared.** Please, include GCF Readiness Project, UNDP W4R project, and CBD Water Supply Improvement project (including dates) in Part IIF, Table 7, pp. 31-32.	**CAR8&CR11: Cleared.** See Part IIF, pp. 31-33.

		CR11: The concept note would benefit from an expanded list of other relevant projects funded by sister climate funds such as the GEF, CIF, or MDBs, where applicable. Also, page 5 refers to 4 key projects implemented under Water SASAP 2018-2028. Please include in related projects list among others, if any.		
	9. Does the project / programme have a learning and knowledge management component to capture and feedback lessons?	**Yes.** A dedicated component (component 4) is included for the purpose. However, the related discussion in Part IIG, pp. 33-35, should refer to this component and clarify other issues indicated below. **CR12:** Refer to component 4 in the discussion on learning and knowledge management. Also, explicitly and briefly mention how gender considerations are integrated into component 4 activities and clarify how the project intends to document gender-specific challenges and successes in water access and climate resilience.	**CR12: Cleared.** Reference is made to component 5 and linkage to the Preliminary Gender Analysis (Annex 1) is highlighted. See Part IIG, pp. 33-34.	-
	10. Has a consultative process taken place, and has it involved all key stakeholders, and vulnerable groups,	**To some extent.** Part IIH, pp. 35-36, refers to consultations with some key stakeholders involved in the		

	including gender considerations in compliance with the Environmental and Social Policy and Gender Policy of the Fund?	project. No mention to any consultations with concerned local communities. Also, more details on consultations and participants are needed. **CAR9:** Please clarify if any consultations with local communities were conducted and provide related information if it is the case. The AF requires that local communities including marginalized/ vulnerable groups and indigenous peoples be identified and consulted at project concept stage, with due consideration to gender aspects, to ensure that their interests/ concerns are considered in project design. **CR13:** provide a summary table of the consultations' events, number of participants with gender consideration, topics discussed, outcomes and how these outcomes were considered in project design.	**CAR9: Cleared.** Acceptable for Concept Stage level. See Part IIH, pp. 34-37. <u>More consultations with local communities is recommended during the preparation of the full proposal stage.</u> **CAR13: Cleared.** See Part IIH, Table 8, pp. 34-36.	- -
	11. Is the requested financing justified on the basis of full cost of adaptation reasoning?	**Not clearly reflected**. Part II "I", pp. 36-37 only focus on the justification for the requested AF fund. Focus should be placed on demonstrating how the project components and		

		activities would help realize the project adaptation objectives, solely using AF funds, without additional funding from other donors. **CAR10:** The discussion in Part II "I" should describe and demonstrate that the planned project/programme activities would address and realize its adaptation objectives utilizing the AF financing solely, without additional funding from other donors.	**CAR10: Cleared.** See Part II"I", pp. 37-40.	-
	12. Is the project / program aligned with AF's results framework?	**Not explicitly indicated**. See CR3 above. **CAR11:** Add a brief discussion to explicitly reflect alignment with AF results framework in the discussions of Part II A, or at the end of Part I (also see related CR3 above). Refer to the below link to for further guidance to demonstrate/ specify the project alignment with the Adaptation Fund revised strategic results framework adopted in 2019 "https://www.adaptation-fund.org/wp-content/uploads/2019/10/Adaptation-Fund-Strategic-Results-Framework-Amended-in-March-2019-2.pdf	**CAR11: Cleared.** See the discussion under project objectives, p.17. **CAR (NEW) 1:** Please ensure that Part III Section A: (table) Demonstrate how the project/programme aligns with the Results Framework of the Adaptation Fund, is included in the resubmission. https://www.adaptation-fund.org/document/template-for-concept-note-for-single-country-proposal/ For support in completing the table, please refer to Results Framework	- **CAR (NEW): Cleared.** See Part IIIA, pp. 47-50.

			Alignment Table (Amended in March 2019) (77 kB, DOC)	
	13. Has the sustainability of the project/programme outcomes been taken into account when designing the project?	**Not Clearly presented**. See Part II J, pp. 38-39. **CAR12:** The discussion in Part II J should demonstrate how the project outcomes can be sustained, replicated and scaled up with other funds after project end. All key areas of sustainability should be addressed under dedicated headings including but not limited to economic, social, environmental, institutional, and financial. Arrangements through which the above would be achieved, including the O&M of facilities to be developed, among others should be explained.	**CAR12: Cleared.** See Part IIJ, pp. 40-42.	-
	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?	**To a large extent.** See Part II K, pp. 39-42. However, the project overall risk category is not specified and other issues indicated below. **CR14:** In Part II K, provide a brief overview on the project potential environmental and social impacts and risks, and the gender-specific cultural and/or legal context in which it will operate.	**CR14: Cleared.** See Part IIK, pp. 42-45. **CAR13: Not cleared.**	-

		CAR13: Please explicitly indicate the project overall risk category (Category A, B or C). The risk category should reflect the AF ESP and not the IE policy. Further details on the risks and related mitigation measures would be needed at full proposal stage.	In Table 13 "Checklist of Environment and Social Principles", pp. 43-45, please clarify why there is no risk "Indigenous Peoples" principle (p.44) and fill in "Same as above" for "Conservation of Biodiversity" principle (p.44) with related text.	**CAR13: Cleared.** See Part IIK, Table 11, 43-46.
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.** The Implementing Entity Fee (USD 783,410) is 8.5% of total project cost (9,216,590).	**-**	**-**
	3. Are the Project/Programme Execution Costs at or below 9.5 per cent of the total project/programme budget (including the fee)?	**No.** Execution costs are USD 950,000, 10.3%) of the total project cost (USD 9,216,590. **CAR14:** Reduce the execution costs to be 9.5% or lower of the total project cost and revise related budget figures accordingly and as/ if needed.	**CAR14: Cleared.** Execution costs are now USD 798,998 (8.7% of the total project cost - USD 9,209,498).	**-**
Eligibility of IE	1. Is the project/programme submitted through an eligible Implementing Entity that has been accredited by the Board?	**Yes.** Caribbean Community Climate Change Centre is an AF Board accredited regional entity. Accreditation Expiration Date: 07 April 2027.	**-**	**-**
Implementation Arrangements	1. Is there adequate arrangement for	n/a at concept stage		

	project / programme management, in compliance with the Gender Policy of the Fund?			
	2. Are there measures for financial and project/programme risk management?	n/a at concept stage		
	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?	n/a at concept stage		
	4. Is a budget on the Implementing Entity Management Fee use included?	n/a at concept stage		
	5. Is an explanation and a breakdown of the execution costs included?	n/a at concept stage		
	6. Is a detailed budget including budget notes included?	n/a at concept stage		
	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?	n/a at concept stage		

	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?	n/a at concept stage		
	9. Does the project/programme's results framework align with the AF's results framework? Does it include at least one core outcome indicator from the Fund's results framework?	n/a at concept stage		
	10. Is a disbursement schedule with time-bound milestones included?	n/a at concept stage		

ADAPTATION FUND

CONCEPT NOTE PROPOSAL FOR SINGLE COUNTRY

PART I: PROJECT INFORMATION

Title of Project/Programme: Replicating Resilient Water Supply Systems Project in St. Lucia (Re-Water St. Lucia)

Country: Saint Lucia

Thematic Focal Area: Water Management

Type of Implementing Entity: ~~Regional Implementing Entity~~Regional Implementing Entity

Implementing Entity: Caribbean Community Climate Change Centre (CCCCC)

Executing Entities: United Nations Office for Project Services (UNOPS)

Amount of Financing Requested: ~~10 million~~ 9,992,305 (in U.S Dollars Equivalent)

Project Formulation Grant Request (available to NIEs only): Yes ☐ No ☒

Amount of Requested financing for PFG: (in U.S Dollars Equivalent)

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

NOTE: LOEs 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:

x This concept has been submitted before

This is the first submission ever of the concept proposal

In case of a resubmission, please indicate the last submission date: 12/17/2024

Please note that concept note documents should not exceed 50 pages, Including annexes.

Table Of Content

ACRONYM TABLE

Acronym	Full Term
AF	Adaptation Fund

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APA	Adaptation Plan of Action
CARPHA	Caribbean Public Health Agency
CAWASA	Caribbean Water and Sewerage Association
CCCCC	Caribbean Community Climate Change Centre
CDB	Caribbean Development Bank
CFAN	Climate Finance Access Network
CIF	Climate Investment Funds
CRVA	Climate Risk Vulnerability Assessment
CSO	Civil Society Organization
DSD	Department of Sustainable Development
DVRP	Disaster Vulnerability Reduction Project
ERR	Economic Rate of Return
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
FRR	Financial Rate of Return
GCF	Green Climate Fund
GEF	Global Environment Facility
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GoSL	Government of Saint Lucia
iWEco	Integrating Water, Land and Ecosystems Management in Caribbean SIDS
M&E	Monitoring and Evaluation
MDB	Multilateral Development Bank
MSME	Micro, Small and Medium-sized Enterprises
NAP	National Adaptation Plan
NAPA	National Adaptation Programme of Action
NDC	Nationally Determined Contribution
NEP	National Environmental Policy
NURC	National Utilities Regulatory Commission
NRW	Non-Revenue Water
O&M	Operation and Maintenance
ODA	Official Development Assistance
OECS	Organization of Eastern Caribbean States
SASAP	Sectoral Adaptation Strategy and Action Plan
SCADA	Supervisory Control and Data Acquisition
SDG	Sustainable Development Goal
SHIDAA	SHIDAA Sustainable Development Solutions Ltd
SIDS	Small Island Developing States
SLBS	Saint Lucia Bureau of Standards
SLR	Sea Level Rise
TVET	Technical and Vocational Education and Training
UNDP	United Nations Development Programme
UNOPS	United Nations Office for Project Services
USP	Unidentified Sub-Project
WASCO	Water and Sewerage Company Inc.
WRMA	Water Resource Management Agency

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FIGURES TABLE

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Project/Programme Background and Context:

~~Environment~~Environmental Context

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Saint Lucia is a Small Island Developing State located in the Lesser Antilles in the Eastern Caribbean. As a tropical island, the climate is predominantly warm and wet. Saint Lucia is of volcanic origin with mountainous topography featuring steep slopes and limited coastline areas. The steep terrain highlights the rivers which flow from the central range into the Caribbean Sea and the Atlantic Ocean. These fast-flowing rivers are significant to the island's ecology and its freshwater resources. The island's mountainous terrain is one of its most distinguishing features with its highest point, Mount Gimie, at 3,117 feet. The country has a total land area of approximately 616 km^2 (238 square miles) with a tropical maritime climate and is located within the Atlantic hurricane belt. Saint Lucia's weather is characterized by ~~a rainy~~the rainy season from May to August and ~~a dry season~~the dry season from January to April. In addition to this, the island has an annual mean temperature of 25.6 ºC and an ~~annual~~annual mean ~~mean~~ rainfall of 2,330 mm[1]. Saint Lucia's climate parameters are typical for a Caribbean island and fall within the expected range for the region. These values are considered average when compared to other islands in the Eastern Caribbean. However, future climate projections indicate that these baseline conditions are likely to evolve. For instance, according to the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (AR5) by mid-century, mean temperatures are expected to increase by approximately 1–2°C, and rainfall patterns may become more erratic. This could result in more intense rainfall events during the wet season and prolonged dry spells during the dry season, thereby heightening the vulnerability of the island's water resources.[2]

Saint Lucia faces a multitude of hazards due to its composition and geographical location, as highlighted in a USAID study. These hazards encompass earthquakes, hurricanes, tsunamis, landslides, volcanic activity, flooding, forest fires and drought. Moreover, being situated within the Atlantic hurricane belt makes it susceptible to severe meteorological events. Recent research indicates a noticeable surge in the intensity and frequency of high rainfall events, tropical disturbances, and hurricanes[3]. These environmental

[1] USAID. 2021. Saint Lucia Resilience Profile.
[2] IPCC, 2014. Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change.
[3] Government of Saint Lucia. 2020. Medium Term Development Strategy 2020-2023

challenges, coupled with shifting global climatic patterns, emphasize the pressing need for focused attention on disaster preparedness, infrastructure resilience, and community awareness on the island.

Economic and Social Context

Saint Lucia, classified as a middle-income country with a small, open economy, heavily relies on tourism, banana production, and manufacturing[4]. Tourism accounts for about 65% of its GDP. Despite economic challenges, such as a 24.4% GDP contraction in 2020 due to COVID-19, the nation displayed resilience with a 12.2% GDP growth in 2021. However, Saint Lucia faces significant exposure to climate change impacts, given its small size, location in a disaster-prone region, and reliance on climate-sensitive sectors. Failure to adapt to climate change could result in substantial economic losses.

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The population of 179,857 is mostly of African descent, with minority East Indian and European populations. With a high Human Development Index of 0.72 (2020), Saint Lucia boasts high life expectancy, education, and per capita income levels. However, poverty remains a concern, with a 25% poverty rate over the past thirty years, especially among children, youth, and female-headed households.

The water sector's accessibility and reliability are crucial for low-income households, particularly given the island's vulnerability to climate-induced events. According to Saint Lucia's water SASAP Saint Lucia has a 35% water supply deficit and the approximately 42% of the water produced is lost as non-revenue ~~Inconsistent~~water. Inconsistent water ~~access~~ supply affects health, agriculture, food security, and gender disparities. As was quoted by the Water and Sewerage Company's (WASCO's) Operations Manager (Senior) in 2016, Hurricane Tomas 2010 as well as torrential rains in succeeding years and destructive human activity all significantly contributed to the unreliable water supply of communities such as Micoud. Currently installed treatment equipment was and continues to be unable to withstand the increased amount of turbidity caused by these factors, thus resulting in constant shutdowns and unavailability of water. The 2016 poverty assessment further highlighted the reliability of a frequent water supply in rural areas as compared to urban areas, with Micoud households having the lowest recorded full-week water supply rate (19%). According to the most recent poverty assessment of Saint Lucia, Micoud population size stands at 16,284, with the highest concentration of indigence at 27.4% and the second highest concentration of the non-indigent poor (15.9%).

[4] World Bank. (2021). Saint Lucia Overview.

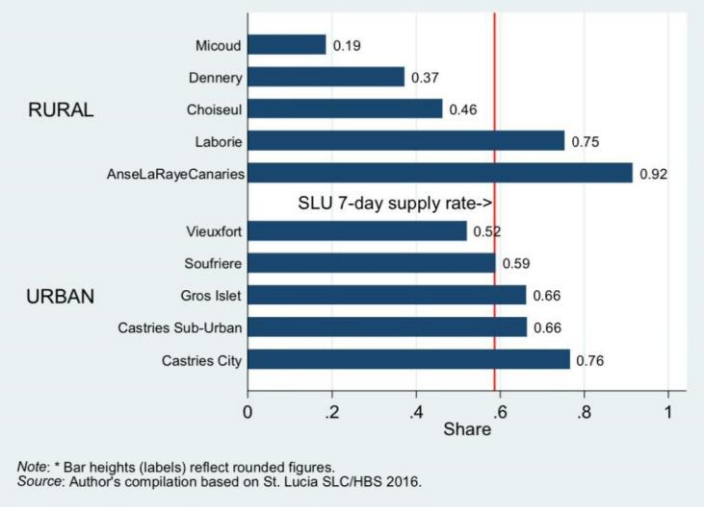

Figure 1 Seven-day water availability rate, by locality and district

Access to water is shaped by socio-economic factors, location and types of use. Access to rainwater for households may be limited by socio-economic standing of ~~persons~~people and their ability to pay for tanks to store potable water. In rural communities, where there is no pipe-borne water, households may utilize a rudimentary system for water collection such as a metal drum and piping from their roof (Montoute, 2020, pers. comms.) Post-disaster, men, women and vulnerable groups such as the elderly would be affected differently due to their water requirements. Water shortages may affect women first due to their domestic responsibilities, particularly in rural areas. After Hurricane Tomas in 2010, water disruptions forced women and children to collect water for washing and bathing from the upper parts of rivers, such as the Petite River and Grande River, near the Anse La Raye village which correlated with skin infections and rashes (Montoute and Cashman, 2015). Single female-headed households may be especially affected during these periods as women fetching water with children are less like to carry large amounts of water and are at increased security risks. Implications of lack of water during these periods can affect personal hygiene of women and use of water in agriculture (Medoza, 2019)[5]

Development Context

Saint Lucia has experienced development initiatives, such as the Saint Lucia Disaster Vulnerability Reduction Project, aimed at addressing challenges like flooding in vulnerable communities like Micoud. The island faces environmental issues like coastal erosion and habitat destruction due to anthropogenic pressures, but national efforts promote sustainable development and habitat protection.

The Government of Saint Lucia (GoSL) recognizes the challenges that climate change poses to its population, natural resources and economy, and has taken considerable measures to identify and address, to the extent possible, current and future climate risks at the policy and operational level. Today, various

[5] Report of the Gender-based Climate Resilience Analysis for Saint Lucia- Engender 2021

sectoral policies address climate ~~change~~change, and a wide range of interventions have been designed or established as adaptation measures, often facilitated or supported by international donors.

In 2015, cognizant of the global shift towards a sustainable development agenda which emphasizes People, Planet, Prosperity, Peace and Partnership, Saint Lucia embarked on the process of crafting a new set of development pillars that embody and localize this new global policy paradigm. As a result, using the Sustainable Development Goals framework as its anchor, seven (7) strategic development pillars were systematically developed for the country to support its medium and long-term ~~socio-economic~~socio-economic growth aspiration.

1. Building Productive Capacity and Expanding Growth Opportunities
2. Building Strong Institutions that are a platform for growth and development
3. Infrastructure, Connectivity, Energy - Key for Growth and Competitiveness
4. Adaptation for Environmental Sustainability, Climate Change & Disaster Vulnerability
5. Social Transformation, Building Social Resilience and Social Capital
6. Enhancing Labour Force through Education, Training and Workforce Development Saint Lucia's Seven National Development Pillars
7. Health and Wellness

The aligning of the development agenda to the SDGs allows for the integration of the associated targets and indicators into the monitoring and evaluation framework of the Medium Term Development Strategy 2020- 2023 (~~MTDS) which~~MTDS) which will assist Saint Lucia in the periodic reporting on the progress through various mediums such as the Voluntary National Review Report (VNR) process, inter alia. It will also allow for a fair comparison of Saint Lucia's development progress against the international community.[6]

In 2018, a Regional Strategic Action Plan (RSAP)7 was developed and endorsed by the ~~M inisters~~Ministers responsible for water in the Caribbean region, Saint Lucia included. The RSAP mentions six main pillars on which climate resilience in the water sector in the Caribbean is built, namely, (i) water sector governance, (ii) decision support, (iii) water resources management, (iv) research, development and innovation, (v) provision of water services, and (vi) capacity building and public sensitization. In keeping with the RSAP and its strategy to mainstream climate resilience into its operations, the Government of Saint Lucia aims to launch a targeted effort to identify and ~~mobilise~~mobilize funding to support the planning, development and implementation of critical short to medium term projects. As such, the Government of Saint Lucia is seeking the support of the Adaptation Fund with respect to the implementation of the proposed project.

To facilitate effective mid and long-term climate adaptation planning and to enable the integration of climate change adaptation considerations into all relevant policies and programmes and into development planning, Saint Lucia initiated its National Adaptation Plan (NAP) process in 2017. Through the NAP process, efforts to address critical climate change-related risks and development priorities will take place in an integrated and coordinated manner, utilizing existing and future synergies. The NAP process is expected to reduce existing vulnerabilities by building adaptive capacity and resilience in all sectors and at all levels of society

The Government of Saint Lucia has formulated development visions, plans, and policies to guide sustainable development, with the latest being the 2020-2023 Medium Term Development Strategy (MTDS). This strategy builds on previous plans and emphasizes six ~~key result~~key areas: citizen security, education, health, agriculture, infrastructure, and tourism. It also integrates cross-cutting priorities such as climate change resilience, productivity, competitiveness, and gender mainstreaming, recognizing fiscal

[6] Saint Lucia's National Adaptation Plan (NAP) 2018–2028

[7] The 2020-2023 Medium Term Development Strategy, entitled "Economic Growth on the A.R.I.S.E. – Nou Tout Ansanm"~~, is a clarion call for collective action to drive Saint Lucia's development agenda. It seeks to accentuate the interconnected nature of development planning by ensuring economic, social and environmental considerations are incorporated and mainstreamed into Saint Lucia's national planning framework.~~

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constraints and debt limitations[8].

Figure 2 Graphic of Saint Lucia's key result areas' objectives[9]

Water Sector Context

Within the MTDS, the water sector is highlighted under the climate change and disaster risk cross-cutting area as one of the critical systems severely impacted by climate change and climate variability. The strategy lays out key challenges faced by the water sector such as aged and damaged infrastructure, increased population and settlement expansion, poor wastewater management, and- most relevant to this concept note- the adverse impacts of natural events such as hurricanes and droughts.

Further, the Saint Lucia National Adaptation Plan (NAP) 2018-2028, pinpoints the water sector as the first of eight priority areas (water, agriculture, fisheries, infrastructure and spatial planning, natural resource management, education, and health- ranked in that order) for adaptation action. These areas were chosen and prioritized through an extensive process of stakeholder consultations, literature reviews, and planning sessions. Within the NAP, 70 adaptation measures were stipulated for the water sector across 4 outcome areas (see below). The measures proposed aim to protect freshwater resources, ensure needed water supply, and protect lives, health, and property.

- Outcome 1: Enhanced enabling environment and improved behaviour for water-related climate adaptation action
- Outcome 2: Increased water access, availability and quality
- Outcome 3: Increased water efficiency and conservation
- Outcome 4: Strengthened preparedness to climate variability and extremes

From 2018 to 2021, the Department of Sustainable Development (DSD) in Saint Lucia evaluated the National Adaptation Plan (NAP) implementation through a 3-year progress report. The key achievement during this period was the development and adoption of the Sectoral Adaptation Strategy and Action Plan for the Water Sector (Water SASAP) 2018-2028. The Water SASAP provides integrated outputs for project planning and design, supported by project concept notes aligned with its goals. It aims to guide decision-making for development and climate change adaptation in Saint Lucia's water sector, focusing on policy

[8] Medium Term Development Strategy 2020 - 2023 of St. Lucia
[9] Medium Term Development Strategy 2020 - 2023 of St. Lucia

makers and managers.
Saint Lucia's primary adaptation goal for its water sector, as outlined in the SASAP, is to implement effective adaptation actions across all sectors and levels of society to safeguard water resources and services under a changing climate.
Four key projects were carried out based on the progress report: Vieux Fort Water Supply Development Project; Dennery North Water Supply Redevelopment Project
These projects aimed to enhance climate resilience and ensure a steady water supply through the construction of water storage facilities.

1. Supporting Water Conservation and Use of Rainwater Harvesting in Saint Lucia
2. Water Policy Update for Saint Lucia

The adaptation measures under the NAP outcomes fall under the mandates of three key water stakeholders

1. Water Resource Management Agency (WRMA)- responsible for the protection and allocation of water resources.
2. Forestry Department - oversees watershed management.
3. Water and Sewerage Company Inc. (WASCO) - the sole water utility in Saint Lucia, mandated to supply water and provide wastewater services.

WASCO, established by the Water and Sewerage Act 2008, is a private company wholly owned by the Government of Saint Lucia (GOSL). Despite its mandate, WASCO has faced numerous challenges in providing adequate water supply and sewerage services due to various constraints.

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Saint Lucia depends solely on surface water to meet to its water requirements. Rainfall is both spatially and temporally distributed, with annual values ranging from 1524 mm in the northwest and south-east, to more than 3048 mm in the mountainous interior. The island's freshwater needs are supplied via an integrated network of river intakes, treatment plants, transmission pipelines and distribution systems, under the operation and control of WASCO. Approximately 73,365 customer accounts are served by the system, distributed between the northern and southern networks as well as residential, commercial and institutional customer bases. This system serves a population of 179,857 ~~persons~~people as well as visitors to the island through cruise and land-based tourism[10].
The island is divided into thirty-seven watersheds ~~(Figure 1.2.1)~~, seven of which (Marquis, Dennery, Roseau/Millet, Soufriere, Woodlands/Grace, Troumassee, Desruisseaux/ Canelles and Patience/Fond), are classified as major sources of surface water. In 1995, a new water supply system was developed to serve the northern half of the island. The nucleus of this system is the John Compton Dam and Millet Reservoir, with a total capacity of 3.182 M cubic meters. Water production is approximately 18.9 M cubic metres per year; however, according to the Saint Lucia Sectoral Adaptation Plan for Water (Water SASAP Annex 3), this figure is ~~actually closer~~closer to 16.55 M cubic metres per year, due to water losses in the distribution system. Dry season water production island-wide is estimated to be at least 25% less than during the wet season by at least 3.182 M cubic meters. Significant investments are being made to improve the raw water transmission and treatment facilities between the Dam and the consumer bases in the north[11].
Saint Lucia's public water supply has in recent years been severely impacted by pressures of increased demand due to increasing socio-economic development, destruction of upper watersheds, increasing exploitation of the rivers and wetlands, and an inefficient, inadequate and aging water distribution network. Low river base flows experienced during the dry season and high turbidity during the rainy months, combine to significantly constrain the ability of WASCO to meet the current demand for water island wide. These challenges are outlined below:

- Deteriorating Infrastructure: One of the pivotal challenges obstructing the water sector is the state

[10] Saint Lucia Water Sector Adaptation Strategy and Action Plan (Water SASAP) 2018-2028.
[11] Saint Lucia Water Sector Adaptation Strategy and Action Plan (Water SASAP) 2018-2028, Annex 3

of its existing infrastructure. Many parts of the water supply and management systems have been in place for decades, leading to wear and ~~tear~~tears that ~~compromises~~compromise their efficiency and resilience. These aged infrastructures are less able to cope with the increasing demands and stressors of a changing climate.

- Population Growth and Urban Expansion: The dynamics of population growth, coupled with rapid settlement expansion, have compounded the pressures on the water sector. As more people rely on existing water systems, the infrastructure, which is already under strain, faces heightened demands, leading to shortages and inefficiencies.
- Wastewater Management: Proper wastewater management is crucial to prevent waterborne diseases, maintain a clean water supply, and protect natural water bodies from pollution. Current practices, however, fall short of ensuring sustainable wastewater treatment and disposal.
- Impacts of Natural Disasters: Hurricanes can cause extensive damage to water infrastructure, disrupt services, and contaminate water sources whereas droughts, intensified by changing rainfall patterns associated with climate change, can drastically reduce water availability, affecting both households and industries.

A current assessment of water available for public water supply estimates an approximate yield of 18.9 million cubic metres per year (MCM/yr.) while net production is presently estimated at 16.55 MCM/yr. High losses ranging from 47-55% in unaccounted-for-water (UFW) reflect an aging system that is not climate resilient. WASCO has instituted an aggressive programme, including metering and a strengthened maintenance programme, aimed at reducing levels of leakage and unaccounted for water. WASCO's role is highly supported by the line ministries at the Government of Saint Lucia including the Water Resources Management Agency (WRMA). This project will be implemented in collaboration with these agencies including the St. Lucia Development Bank to ensure that impact of the project activities extend to all stakeholders.

The replacement of infrastructure and ongoing improvements to water and wastewater operations have only been possible through the mobilization of limited resources, primarily via levies, loans, and grants accessed through government channels. However, these resources remain insufficient to meet the country's growing water management needs. Notably, ongoing readiness efforts are significantly enhancing the capacity of the Water and Sewerage Company Inc. (WASCO) to address current environmental and developmental challenges. These efforts are multifaceted, focusing on infrastructure upgrades, capacity building for climate adaptation, and public education and awareness initiatives. In supporting the modernization of the treatment distribution systems with climate-resilient technologies these initiatives help WASCO manage the increased risk posed by climate change. Additionally, strengthening WASCO's ability to provide reliable and sustainable water services in the face of climate change and rising demand.

Adaptation needs and Barriers

A major aim of this project is to assist WASCO in ~~overcoming several~~overcoming several barriers to the provision of adequate water services identified in the Water SASAP 2018, and WASCO CRVA (2022). Included among these barriers are the following:

a. **Limited access to grant financing:** the cost of ongoing investment in resilient infrastructure and water resources management in the wake of climate change impacts has been significant. Since WASCO is a state-owned company, mobilization of financial resources has been a challenge due to fiscal vulnerability and limited fiscal space of the government in the mobilization of financing to implement its NDC. In addition, the WRMA and associated government departments are financially constrained and not able to implement the required technical solutions to support the sector.

b. **Limited institutional capacity in the water utility company to respond to climate change:** the staff is ill equipped to adequately respond to climate change ~~impacts~~impacts, and this has weakened WASCO's capacity over the years. WASCO will be supported and strengthened in the implementation

of this project as well as through a readiness initiative that would be a precursor to this project.

c. **Inadequate development of climate resilient water supply systems to ensure safe and reliable water supply:** WASCO does not have adequate capacity to accurately assess vulnerabilities to climate change and to plan and implement appropriate resilience measures. In addition, ~~the WRMA~~WRMA has limited technical and financial resources to support the design and implementation of climate change resilient policies and strategies.

d. **Limited communication and public awareness of water supply issues relating to climate change**: communication and public awareness has been and continues to be inadequate to address key issues of the water sector in relation to climate impacts and the need for the ~~general public~~public to be aware and contribute to adaptation measures.

~~A section should be included on the WASCO's capacities to address Environmental and Social, Gender Issues (I know a part of this was highlighted in Elishah's gender assessment) in the context of the assumption made. It is important to understand its ability and track record of the organization. Have the water authority managed a similar project of this size before, how is ES&G currently addressed. What extent is grievance/complaints currently managed, even if this is informal. This should include basic information on gender mainstreaming at WASCO as a baseline for understanding where the organization is now.~~

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Climate Context

Temperature

Located in the Caribbean's Windward Islands, Saint Lucia experience a warm tropical climate that is largely moderated by the surrounding marine environment and prevailing northeast trade winds. The surrounding Atlantic Ocean and Caribbean Sea have sea surface temperatures that are generally stable, averaging around 26.7°C. Consequently, the climate is characterized by warm air temperatures averaging near 27°C, rarely rising above 32°C or falling below 21°C. However, the island's mountainous topography, particularly in the more rugged interior, can cause temperature variations between high and low-lying regions of between 2°C and 5°C.

Although average air surface temperatures do not vary much on an annual basis, there has been a notable increase in recent years consistent with broader regional and global trends. Specifically, there has been an increase by around 0.7°C since 1960, at an average rate of 0.16°C per decade and is projected to continue rising. Mean annual temperatures in Saint Lucia are projected to increase (relative to a 1961-1990 baseline) by 0.78-1.35°C in the 2020s; 1.34-2.28°C by the 2050s; and 1.78-3.38°C by the end of the century, with the most significant warming expected to occur in the dry season.

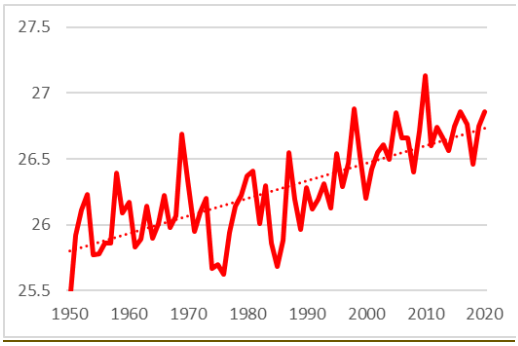


Figure 3 Annual mean temperature distribution

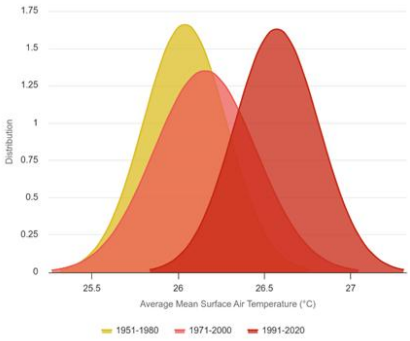
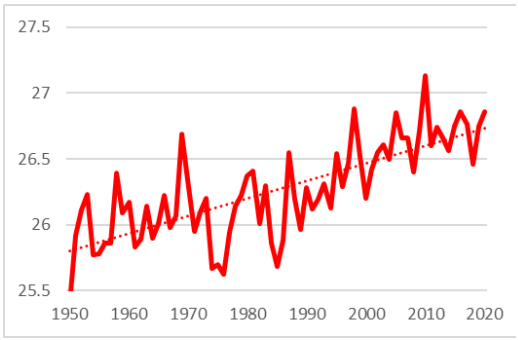


Figure 4 Change in temperature



Additionally, there is a clear change in the temperature distribution, with a higher peak suggesting that temperatures have become more concentrated around the new higher mean, indicating less variability and more consistently higher temperatures. This means higher temperatures are occurring more frequently, and the climate is experiencing warmer conditions more regularly. Concomitant with this ~~trend~~trend there will be an increased frequency of temperature extremes, including very hot days and nights, a decrease in very cold days and nights, and an increase in consecutive hot and dry days. Projections across all models indicate that as even under the best-case scenarios, the island of St. Lucia will be a significantly warmer island than at present, with the magnitude of projected changes greater than the magnitude of change seen over the last century (Fig 3).

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Precipitation

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In St. Lucia, precipitation patterns are characterized by two distinct seasons: the wet and dry seasons. During the wet season, the volume of rainfall is primarily determined by the frequency and intensity of tropical disturbances, such as waves, depressions, storms, and hurricanes. These tropical systems contribute significantly to the total rainfall, often bringing heavy, sustained precipitation. In contrast, the dry season's rainfall mainly originates from mid-latitude systems, including troughs, frontal troughs, and jet streams, which intermittently intrude into the region. The timing of these systems is random, resulting in considerable variability in rainfall distribution during the dry season. While tropical disturbances in the wet

season occur with a relatively predictable frequency of about every four days, mid-latitude systems in the dry season ~~lead~~led to more unpredictable and uneven rainfall patterns.

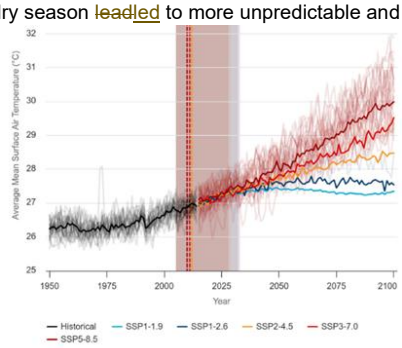


Figure 5 Projected temperature increase distribution[12]

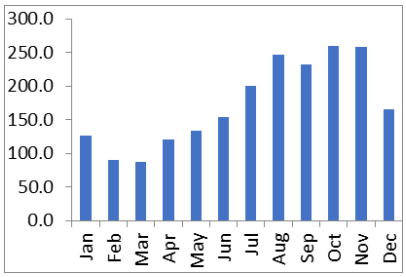


Figure 6 Average monthly rainfall

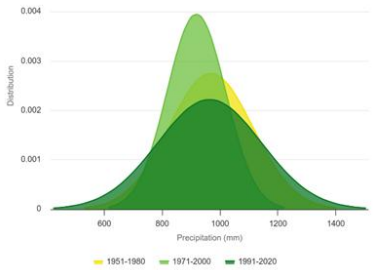


Figure 7 Change in precipitation distribution

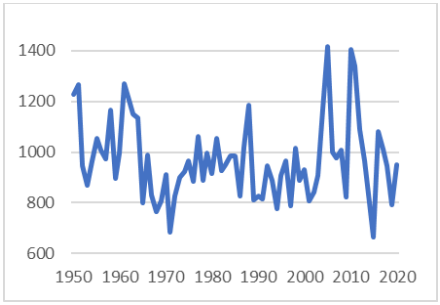


Figure 8 Annual average precipitation

Additionally, St. Lucia's mountainous terrain exerts a significant orographic influence on precipitation. The island's rugged interior receives substantially higher rainfall compared to its coastal regions due to orographic lifting. Here, moist air is forced to ascend over the mountains, cooling and condensing to produce enhanced precipitation. This effect results in pronounced geographic variation in rainfall, with coastal regions averaging around 1000 mm annually, while the elevated interior can experience over 3000 mm of rainfall per year. This substantial variation underscores the impact of the island's topography on its precipitation patterns, contributing to the overall variability in rainfall across St. Lucia. In addition to large spatial variability in rainfall, the average annual rainfall varies significantly from year to year. Annual rainfall in St. Lucia has ranged from as low as 664 mm in ~~1971 to~~1971 to 1416 mm in 2005 and has become notably more capricious in the 2000s. Similarly, the annual number of wet days has varied significantly over time, ranging from 129 to 191 days per year. The frequency of days with extreme rainfall, defined as days with precipitation over the 99th percentile, also shows significant annual variation, ranging from 1 day per year to 7 days. The annual maximum number of consecutive wet days has declined significantly, from an average of 31 days between 1950-1980 to an average of 23 days between 1990-2020. Conversely, the

[12] World Bank Climate Knowledge Portal

annual maximum number of consecutive dry days has increased over time, from an average of 8 days between 1950-1980 to an average of 12 days between 1990-2020. However, it is important to note that these values are highly variable, reflecting the complex and changing nature of St. Lucia's climate. Understanding these changing patterns is crucial for developing effective adaptation and mitigation strategies to address the challenges posed by climate variability and change.

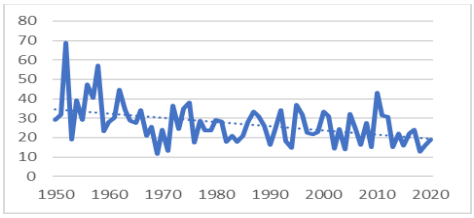


Figure 9 Annual number of wet days

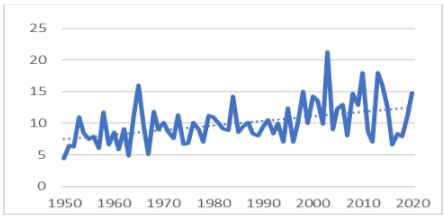
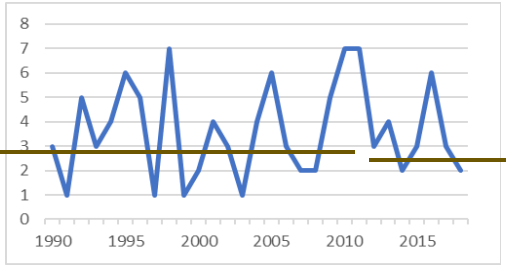
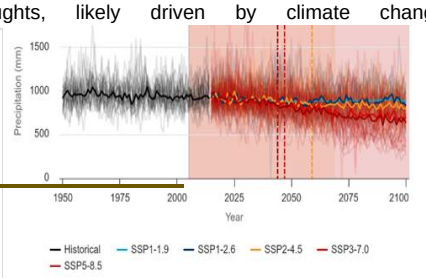
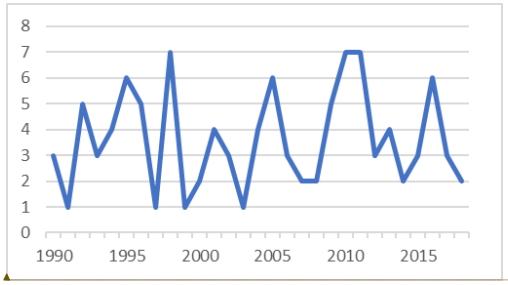


Figure 10 Annual number of dry ~~day~~days

Between the periods 1971-2000 and 1990-2020, there has also been a notable change in the distribution of precipitation. The graph for 1971-2000 shows a higher peak, indicating that precipitation amounts were more concentrated around a certain value, reflecting stable and predictable weather patterns with fewer extreme events. In contrast, the 1990-2020 graph displays a lower peak, suggesting a wider spread of precipitation amounts and increased variability. This change points to more frequent extreme weather events, such as heavy rainfall and droughts, likely driven by climate change.







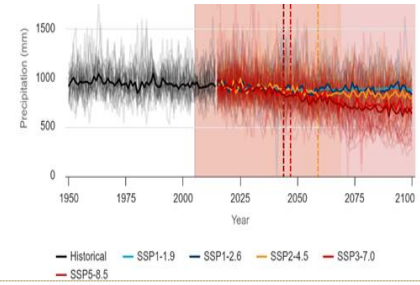


Figure 11 Annual number of days with precipitation above the 99 ~~percentile~~percentiles

Figure ~~12~~13 Projected changes in annual precipitation[13]

Meanwhile, model projections related to changes in annual average precipitation vary ~~significantly, but~~significantly but consistently point toward a drying trend. The range of projected changes (relative to a

[13] World Bank Climate Knowledge Portal

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1961-1990 baseline) is: between -20.15% and +4.09% in the 2020s; between -35.15% and +3.53% in the 2050s; and between -46.19% and -13.74% by the end of the century. In addition to these overall drying trends, available modelling efforts indicate that St. Lucia will likely continue to experience an increase in the frequency and intensity of extreme precipitation events. These shifts in precipitation patterns highlight the need for adaptive measures in water resource management, and infrastructure planning to cope with the heightened unpredictability and extremity of weather events.

Tropical Cyclones

Although Saint Lucia has historically been spared from the most severe hurricane destruction, tropical cyclones remain a significant threat to the island nation. The island's location in the North Atlantic hurricane belt exposes it to these powerful storms with alarming regularity. Recent years have seen several tropical cyclones and hurricanes pass close to Saint Lucia, highlighting the increasing vulnerability of the island. This trend is concerning as the frequency and intensity of these storms are on the rise. For instance, Hurricane Allen devastated the agricultural sector and claimed nine lives in 1980, while Hurricane Tomas in 2010 caused significant damage, claiming seven lives and severely impacting the island's cocoa crops. With the likelihood of more frequent and intense hurricanes, Saint Lucia faces an urgent need to enhance its preparedness and response strategies to minimize the adverse effects of these natural disasters.

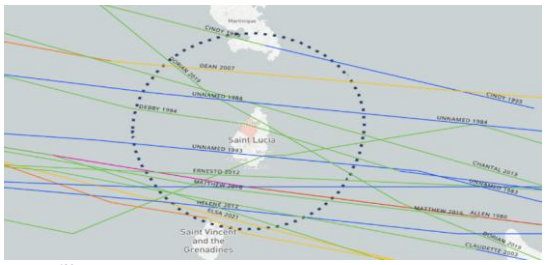

Figure 13 No. of storms passing within 60 nautical miles of Saint Lucia between 1980 -2022[14]

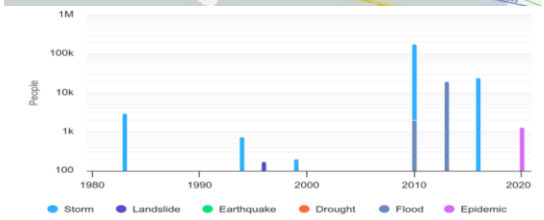

Figure 14 ~~No. of~~No. of people affected by extreme events[15]

Projections regarding hurricanes are marked by considerable uncertainty, but regional projections align with the findings of the IPCC Special Report on Extremes (2012). By the latter half of the century, tropical cyclone precipitation rates are expected to increase by up to 30% within 100 km of storm centers, and about 10% at radii of 200 km or more. Maximum sustained wind speeds are projected to rise by 2-11% by the end of the century. Additionally, the frequency of Category 4 and 5 hurricanes in the Atlantic is anticipated to increase by 25-30%, with storms likely to become 2-11% stronger in terms of maximum wind speeds and potentially more frequent. These changes underscore the need for enhanced preparedness and adaptation measures to address the heightened risks and impacts of increasingly severe tropical cyclones on Saint Lucia.

[14] World Bank Climate Knowledge Portal
[15] World Bank Climate Knowledge Portal

The Saint Lucia Water Sector Adaptation Strategy and Action Plan (Water SASAP) comprehensively outlines the risks posed to the country's water resources due to the impacts of climate change and proposes strategic measures to address them. The Water SASAP identifies key risks such as increased variability in precipitation patterns leading to more frequent and severe droughts and floods, rising temperatures resulting in higher evaporation rates, sea-level rise causing saltwater intrusion into freshwater aquifers, and heightened extreme weather events damaging water infrastructure. These climate-induced challenges threaten water availability, quality, and the reliability of supply, which are critical for the island's socio-economic development and the well-being of its population.

To resolve these risks, the Water SASAP proposes a multifaceted approach focused on enhancing the resilience and sustainability of the water sector. The plan emphasizes the modernization and climate-proofing of water infrastructure to withstand extreme weather events, including upgrading treatment plants and distribution networks. It advocates for the diversification of water sources through the promotion of rainwater harvesting and the protection of watersheds to maintain natural water regulation functions. The strategy also highlights the importance of improving water resource management by strengthening institutional capacities, updating policies and legislation, and fostering inter-agency coordination. Additionally, it underscores the need for public education and awareness campaigns to promote water conservation and efficient usage practices among communities. By implementing these measures, the Water SASAP aims to secure a reliable and safe water supply for Saint Lucia, ensuring that the water sector can adapt to and withstand the ongoing and future impacts of climate change.

Climate Rationale

The community of Micoud, located on the southeastern coast of Saint Lucia, is one of the island's eleven districts. It offers a diverse landscape, blending coastal areas and interior terrains shaped by the island's volcanic origins. Micoud stretches along the eastern coastline, encompassing a significant portion of Saint Lucia's eastern shores. Its terrain features flat coastal areas and undulating hills further inland. The largest river in the district, the Micoud River, winds through the landscape before emptying into the Atlantic Ocean. According to the 2010 census, the district had a population of 16,284 people, reflecting slight growth from the 16,143 recorded in 2002.

Micoud is a growing community expected to experience increased housing and development projects aimed at economic growth. The district has the largest watershed on the island, making it highly vulnerable to climate change impacts, and there is an immediate need for climate action. The water sector's accessibility and reliability are crucial for low-income households, particularly given the island's vulnerability to climate-induced events. Inconsistent water access affects health, agriculture, food security, and exacerbates gender disparities. According to the most recent poverty assessment, Micoud has the highest concentration of indigence at 27.4% and the second-highest concentration of the non-indigent poor at 15.9%.

The water supply challenges in Micoud have been exacerbated by natural disasters and human activities. Hurricane Tomas in 2010, followed by subsequent torrential rains, significantly damaged the island’s water supply infrastructure, particularly in communities like Micoud. The current water treatment equipment in Micoud struggles to handle the increased turbidity caused by these events, resulting in frequent shutdowns and water shortages. The 2016 poverty assessment highlighted the reliability issues of water supply in rural areas, with Micoud households recording the lowest full-week water supply rate at just 19%.

The plant was first constructed during the 1980s using a slow sand filtration system. With deteriorating water quality caused by increasing turbidity and changing land-use, WASCO introduced prefiltration over a decade ago. In the current system, water is abstracted via intakes and then pumped or gravity-fed through transmission lines to treatment plants, where it is filtered and chlorinated before being stored and distributed to consumers via water mains. This system largely relies on gravity-fed, low-energy transmission lines that require minimal maintenance. However, several challenges exist, including high levels of turbidity in raw water sources, damage to pumping stations and transmission lines, and power outages affecting pumping stations.

Addressing the issue of turbidity with upgraded facilities, if not energy-efficient, may lead to higher

operational costs, which could be passed on to vulnerable consumers. To prevent this, any upgrades to the treatment facilities must incorporate energy-efficient technologies to ensure that the cost of addressing climate-related challenges does not increase the financial burden on consumers. There are approximately 1000 customers, comprising residential and commercial customers connected to this water supply system. The current capacity of the plant is approximately 250,000 GPD. In accordance with the Water and Sewerage Act (2005, Revised 2008) and regulatory oversight by the National Utilities Regulatory Commission (NURC), WASCO is legally mandated to provide water services in a non-discriminatory manner. This ensures equitable access to potable water and sanitation for all customers, including households, schools, businesses, and public institutions. ~~WASCO provides service to customers in a non-discriminatory manner by law which includes schools, businesses~~ etc. Over the last few decades, the water treatment system has experienced increased pressures from higher levels of turbidity caused by high rainfall events which ~~forces~~force shutdowns. Likewise, during seasons of drought, water must be rationed because of extremely low supplies.~~ies. D~~ Developments in the supply ~~in the supply~~ of this water ~~supply~~ system ~~are~~is facing approval delays on account of unavailable supply. An upgrade of the treatment facility to support higher treatment capacities of up to 1 million gallons per day is being considered. This would, apart from facilitating increased water supplies to customers, facilitate the availability of water under higher levels of turbidity ~~than what~~than is presently possible

In addition to these challenges, landslides present a significant environmental concern in Micoud, particularly during heavy rainfall. These events lead to elevated sedimentation levels in surface water, causing temporary halts in water abstraction and disrupting regular water supply. If not adequately managed, these disruptions pose potential health risks. Rising temperatures further compound these issues by reducing soil moisture, increasing evaporation rates, and leading to further erosion and sedimentation at surface water intakes.

Over the years, Saint Lucia has undertaken development projects to address the increasing rainfall intensity and other climate-induced challenges. The Saint Lucia Disaster Vulnerability Reduction Project, for example, included the construction of drains in Micoud to reduce flooding and build resilience in vulnerable communities. Like other parts of Saint Lucia, Micoud also faces challenges related to environmental conservation, including coastal erosion, habitat destruction, and tourism pressures. National efforts have been made to promote sustainable development and protect critical habitats, but more targeted interventions are needed.

The operational expenses of water treatment facilities in Micoud have been significantly impacted by climate change. Increased energy consumption, chemical usage, and maintenance costs are some of the challenges faced by these facilities. Rising temperatures contribute to heightened evaporation rates, diminishing water availability for consumption and agriculture, and posing challenges to water infrastructure and quality. A study on drinking-water safety in Micoud identified hazards such as intake blockages during heavy rainfall and microbial contamination, emphasizing the need for comprehensive risk management strategies to address climate change impacts[16].

The observed alteration in precipitation patterns due to climate change has led to an unpredictable hydrological cycle, resulting in erratic streamflow patterns across the island. This unpredictability has caused more frequent water supply disruptions and reduced water quality, significantly affecting access to potable water. One of the most critical issues faced by WASCO is sedimentation at surface water intakes due to increased runoff during extreme rainfall events. Extended dry periods, another consequence of climate change, have resulted in reduced vegetative cover, leaving more loose soil available for erosion during heavy rains. Additionally, increased evaporation rates lower surface water levels, ~~concentrating~~concentrating on sediment loads and exacerbating the problem. This issue is particularly acute in Micoud, where the current treatment equipment cannot withstand the increased turbidity, resulting

[16]gwp-c-perspectives-paper---impact-of-land-use-change-on-water-resources-availability-and-water-quality-in-saint-lucia.pdf

in constant shutdowns and unavailability of water for the entire community. This continues to pose a significant health risk.

To address these challenges, the project aims to develop integrated water resources management plans focused on reducing erosion and sedimentation. It also targets improvements in the water treatment process and water quality monitoring. Enhancing water treatment infrastructure will help manage the increased sediment load and ensure the provision of clean water. Upgraded water quality monitoring systems will provide timely data to respond effectively to changes in water conditions, ensuring that the water supply remains safe and reliable.

In addition to the issues related to sediment loads, the increase in the number of major hurricanes, coupled with more frequent and intense flooding, has caused significant damage to water infrastructure in Micoud. This has led to high repair and replacement costs, deteriorating water quality through increased erosion and sedimentation, and clogged water intakes near the treatment plant. To compound this issue, Micoud's water infrastructure is solely dependent on grid-tied power generation from fossil fuels, which has proven to be unreliable during and after extreme weather events. Therefore, to enhance the resilience of the water treatment system, this project will upgrade existing infrastructure and introduce renewable energy alternatives at the treatment plant. Introducing technologies that could handle higher levels of turbidity and allow for automatic shortage of the system when the turbidity levels reach a certain threshold. This treatment process, in comparison to the existing method, requires more energy; however, it enhances resilience in the water supply system and helps protect vulnerable populations from rising costs. To mitigate the increased energy demands, renewable energy sources will be integrated into the system. By strengthening the infrastructure and incorporating alternative energy sources, the plant will remain operational even after significant extreme weather events. Additionally, upgrades to the Micoud water treatment and supply systems, along with enhanced water storage infrastructure, will ensure a more reliable and safe water supply for the community amidst the growing impacts of climate change. As part of the upgrade, a water tank will be installed at the water treatment facility to add redundancy, ensuring that in times of exceptional circumstances, the most vulnerable have uninterrupted access to water. Further, to address inconsistent water access, a significant issue amongst, particularly for vulnerable households and low-income family's rainwater harvesting systems integrated with subsidized water filtration and purification units will be provided. The installation of a water storage tank provides a critical safeguard against the impacts of climate change, such as droughts and flooding, which can disrupt the regular water supply. ~~By ensuring a reliable and consistent supply of water, t~~This activity directly contributes to the health, well-being, and resilience of the community, particularly for those who are most vulnerable to the adverse effects of water scarcity. This is especially important during emergencies when access to clean water is crucial for survival and maintaining public health

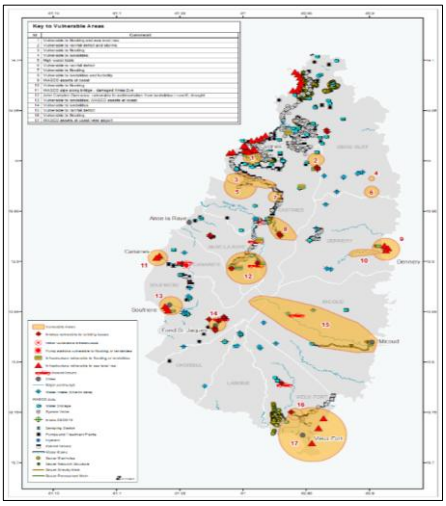

Figure 15Source: WASCO Climate Risk and Vulnerability Assessment (CRVA 2022)

Furthermore, the project will implement education and awareness programs to optimize water usage, which will help maintain adequate water levels in reservoirs. By promoting water conservation practices, the project will help maintain the functionality of water infrastructure and ensure the availability of clean water even during adverse weather conditions. The project will also optimize the distribution of potable water and

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reduce water loss, ensuring that water is efficiently and equitably distributed throughout the community. These measures are crucial in adapting to the heightened unpredictability and extremity of weather events driven by climate change.

Project/Programme Objectives:

The primary objective is to enhance climate resilience in the water sector by ensuring secure, reliable, and safe water access through climate-smart infrastructure improvements, capacity building, and comprehensive public education. The project emphasizes direct support for vulnerable groups, including the installation of integrated water accessibility systems and adaptive measures. It also focuses on capturing and disseminating lessons learned to strengthen adaptive capacity. All project components are designed to empower stakeholders and communities to effectively respond to climate change impacts on water.

Table 1 Project Components and Outputs

Component 1: Building resilience in the water supply infrastructure and systems	**Output 1.1:** Climate resilient water supply and network installed
Component 2: Improved distribution and reliability of potable water supply	**Output 2.1** Systems to optimize the distribution of potable water implemented
Component 3: Strengthened institutional capacity and systems for climate responsive management of water resources	**Output 3.1**: Climate-related risks planning integrated into WASCO operations
Component 4: Strengthened awareness of climate threats and risk-reduction processes associated with water resources	**Output 4.1:** Improved conservation and efficiency in the use of water resources
Component 5: Enhanced learning, knowledge transfer, and dissemination of best practices for climate-resilient water management in Micoud	**Output 5:1** Comprehensive documentation of project activities, challenges, and successes **Output 5.2:** Capacity building and training for local stakeholders. **Output 5.3:** Dissemination of project outcomes to broader audiences

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The 'Replicating Resilient Water Systems in Saint Lucia' project aligns with the Adaptation Fund's strategic outcomes. Each intervention within the project has been designed to directly support the Fund's key priorities—ranging from reducing exposure to climate-related hazards and strengthening institutional capacity, to enhancing local ownership of adaptation processes, increasing the adaptive capacity of critical infrastructure, and promoting sustainable livelihoods and innovative adaptation practices. By mapping the project activities against these outcomes, the concept demonstrates the commitment to a holistic, integrated approach that not only addresses technical challenges but also supports socioeconomic and environmental resilience in Saint Lucia. The project alignment to the Adaptation Fund Results Framework is demonstrated in Part III of the concept note.

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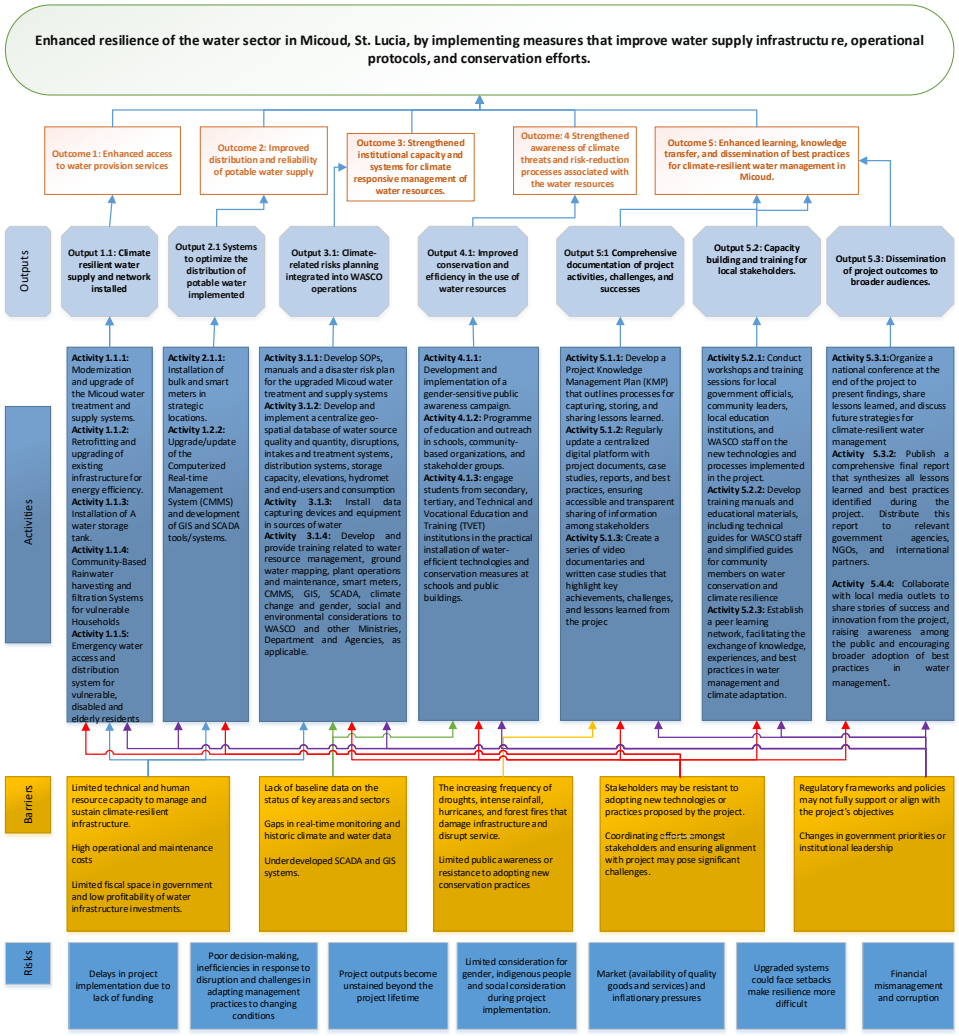

Figure 16 Re-water ToC

The primary objective is to enhance climate resilience in the water sector by ensuring secure, reliable, and safe water access through climate-smart infrastructure improvements, capacity building, and comprehensive public education. The project emphasizes direct support for vulnerable groups, including the installation of integrated water accessibility systems and adaptive measures. It also focuses on capturing and disseminating lessons learned to strengthen adaptive capacity. All project components are designed to empower stakeholders and communities to effectively respond to climate change impacts on water

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Component 1: Building resilience into the water supply infrastructure and systems.

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The water infrastructure in Micoud, Saint Lucia, faces significant challenges, including inadequate storage capacity, inefficient pumping systems, susceptibility to extreme weather events, persistent non-revenue water (NRW) losses, and operational inefficiencies. To address these issues and enhance the resilience of the water supply systems, this component focuses on comprehensive upgrades and modernization efforts, all while promoting sustainable, low-carbon practices. The primary objective is to strengthen the water supply infrastructure to withstand the adverse impacts of climate change, ensuring continuous and reliable water services for the community, particularly during extreme weather conditions.

Through key adaptation measures including the installation of community-based rainwater harvesting systems and low-cost water filtration units for vulnerable households, ensuring supplementary water sources during droughts or disruptions in the main supply. Additionally, a network of emergency water supply points will be established, with modifications to water access points to cater specifically to disabled and elderly residents, ensuring that all members of the community have secure and consistent access to

clean water, even during emergencies.

Additionally, the Micoud Water Treatment and Supply Systems will undergo a thorough vulnerability assessment, capacity enhancement, and modernization, including the integration of backup systems to ensure uninterrupted operations during disasters. The project also focuses on retrofitting existing infrastructure with energy-efficient technologies, such as Variable Frequency Drives (VFDs) to optimize pump speeds, and replacing outdated equipment with modern, energy-saving models. The incorporation of renewable energy sources, particularly photovoltaic (PV) systems, will further reduce the carbon footprint of the water sector. A storage tank, providing clean, fit for drinking water will be installed at the treatment site and will have a capacity 200,000K to safeguard against droughts and disruptions in water supply whereby building redundancy of the system.

This component will also address the critical need to reduce NRW by optimizing the distribution of potable water. Climate change is intensifying water scarcity through irregular rainfall patterns, prolonged droughts, and increased evaporation, putting additional pressure on already limited freshwater resources. Furthermore, the increasing frequency and severity of extreme weather events, such as floods and storms, exacerbates the stress on water supply systems, making water resources less reliable. By reducing water losses, utilities can make more efficient use of available resources, ensuring that essential services like agriculture, health, and domestic needs continue to be met, even during climate-induced water shortages. Lowering NRW is not only a vital adaptation strategy but also provides a key co-benefit: mitigating climate change impacts by reducing energy consumption associated with treating and distributing water that is ultimately lost. This will make water networks more resilient to climate-induced damages, allowing utilities to better manage scarce resources, reduce operational costs, and lower their carbon footprint.

To enhance monitoring and management capabilities, the Computerized Real-time Management System (CMMS) will be upgraded with Geographic Information Systems (GIS) and SCADA tools, providing real-time control, monitoring, and leak detection. This will facilitate efficient planning and maintenance, reducing water losses and improving system reliability.

Overall, this component takes a comprehensive approach to addressing current vulnerabilities while preparing Micoud for future climate-related impacts. By enhancing the resilience of the water supply infrastructure and integrating sustainable practices, the project will contribute to consistent economic productivity, improved public health outcomes, and increased community flexibility in facing water-related challenges.

Outcome 1: Strengthened resilience and reliability of Micoud's water supply infrastructure, ensuring sustainable access to clean water in the face of climate change and other challenges.

Output 1.1: Climate resilient water supply and network installed.

- Activity 1.1.1: Modernization and upgrade of the Micoud water treatment and supply systems: This activity involves assessing the vulnerabilities in the existing water treatment and supply infrastructure and implementing upgrades to ensure it meets current and future demands. This includes enhancing water treatment processes to improve water quality, addressing any weaknesses in the supply network, and integrating backup systems to maintain operations during disruptions such as extreme weather events or power outages.

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- Activity 1.1.2: Retrofitting and upgrading of existing infrastructure with renewable energy and energy efficiency: This activity focuses on enhancing the energy efficiency of the water treatment and supply systems by retrofitting existing infrastructure with renewable energy sources and energy-efficient technologies. This may include the installation of solar panels, wind turbines, or other renewable energy systems, as well as upgrading pumps and other equipment to reduce energy consumption and operational costs
- Activity 1.1.3: This activity involves the installation of a water storage tank to improve the reliability of the water supply in Micoud. The tank will serve as a buffer during periods of drought or flooding, ensuring that the community has a reserve supply of clean water. It will also help reduce reliance on traditional water sources, which may be compromised during extreme weather events. The tank will be installed at the treatment site and will have a capacity 200,000K Gallons. The tank will supply the entire communities Escap to Ti Rocher including Micoud Village. Within these communities, there are residential and commercial developments and schools. The distribution network is used to provide water in a non-discriminatory manner
- Activity1.1.4 Community-Based Rainwater Harvesting and Filtration Systems for Vulnerable Households: Provide vulnerable households, particularly low-income families, with rainwater harvesting systems integrated with subsidized water filtration and purification units. These combined systems will offer a supplementary and reliable water source during droughts or disruptions to the main supply, while also ensuring that the collected rainwater is safe for drinking and other household uses
- Activity 1.1.5: Emergency Water Access and Distribution System for Vulnerable, Disabled, and Elderly Residents; Develop a network of strategically located emergency water supply points throughout the community, specifically designed to accommodate the needs of vulnerable populations, including the disabled and elderly. These points will feature user-friendly systems such as lever handles, touchless technology, ramps, handrails, and non-slip surfaces to ensure safe and easy access. Additionally, install user friendly systems that cater specifically to the needs of disabled and elderly residents, ensuring they have secure and consistent access to clean water without physical barriers

Output 1.2: Systems to optimise the distribution of potable water implemented.

- Activity 1.2.2: Install Bulk and Smart Meters in Strategic Locations to Reduce NRW: This activity involves the installation of bulk meters at major distribution points and smart meters at consumer endpoints across Micoud. Bulk meters will measure the flow of water entering different sections of the distribution network, while smart meters at individual properties will provide accurate, real-time data on water consumption. Reducing NRW is a vital adaptation strategy for maximizing the efficiency of water distribution. By lowering losses, water utilities can make better use of limited water resources, ensuring more water is available for essential services like agriculture, public health, and domestic use, even during times of climate-induced water shortages. These systems will enable more efficient water management, timely billing, and faster detection of leaks or other issues within the network

- Activity 1.2.3: Upgrade/Update the Computerized Real-time Management System (CMMS): This activity involves upgrading and updating the Computerized Real-time Management System (CMMS) used by WASCO to manage the water supply network. The upgrades will include the development and integration of Geographic Information System (GIS) tools, Supervisory Control and Data Acquisition (SCADA) systems, and software for leakage monitoring and reduction. It will also involve the creation of detailed maps of the island's water assets to support more efficient management and decision-making.

Outcome 2: Strengthened institutional capacity and systems for climate responsive management of water resources.

This component aims to enhance the resilience of the water sector by integrating climate-related risk planning into operational and maintenance protocols. The primary goal is to strengthen institutional capacity and systems for climate-responsive management of water resources. Climate-related risk planning will be integrated into WASCO operations through a series of activities. These activities involve the development and mainstreaming of climate change considerations into WASCO's risk management framework. This includes reviewing and updating existing plans and strategies to respond to disasters, incorporating climate change data, forecasts, and models to anticipate and respond to specific climate-induced events. Additional focus will be placed on developing policies, manuals, and protocols for water abstraction, treatment, distribution, and asset maintenance in the context of climate change, aiming for a sustainable and resilient water management approach. Furthermore, the development and implementation of a centralized geospatial database to consolidate comprehensive water-related data, facilitating efficient water management and strategic resource planning for WASCO. This will also require providing comprehensive training related to water resource management, plant operations and maintenance, advanced technologies, climate change, and gender, social, and environmental considerations to WASCO and relevant stakeholders. By mainstreaming climate-related risk planning into operational and maintenance protocols, this component aims to equip WASCO and other stakeholders with the necessary tools and knowledge to effectively manage climate-related risks and ensure the resilience of water resources in the face of changing climatic conditions. To integrate climate-related risks planning into the Water Sector by mainstreaming, developing, and implementing operational and maintenance protocols with respect to climate hazards.

Output 2.1: Climate-related risks planning integrated into WASCO operations.

Activity 2.1.1: Develop SOPs, manuals and a disaster risk plan for the upgraded Micoud water treatment and supply systems. In the context of climate change and disaster risk management, a comprehensive set of SOPs, manuals and disaster risk plan will be designed to provide detailed guidelines for sustained operations of the water treatment plant.

Activity 2.1.2: Develop and implement a centralize geo-spatial database of water source quality and quantity, disruptions, intakes and treatment systems, distribution systems, storage capacity, elevations, hydromet and end-users and consumption (by type).

Activity 2.1.3: Install data capturing devices and equipment in sources of water

Activity 2.1.4: Develop and provide training related to water resource management, ground water mapping, plant operations and maintenance, smart meters, CMMS, GIS, SCADA, climate change and gender, social and environmental considerations to WASCO and other Ministries, Department and Agencies, as applicable.

Outcome 3: Strengthened awareness of climate threats and risk-reduction processes associated with the water resources.

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This component focuses on enhancing water conservation and efficiency among water users in Micoud, St. Lucia, to strengthen the resilience of the water sector against climate change. Its primary goal is to raise awareness of climate threats and risk reduction processes associated with water resources This Component will build on and complement the ongoing GCF Water Readiness to avoid duplication of efforts while ensuring targeted messaging for the Micoud community. The public awareness campaign will integrate existing themes from the GCF program—such as Water Resources Management, Conservation of Forests, Water and Wastewater Services, Water Conservation, Demand Reduction, Rainwater Harvesting, Water Re-use, Water Recycling, and Climate Change Impacts—and adapt them to the local context, with a focus on vulnerable groups in Micoud, such as female-headed households.

This campaign will work in synergy with the GCF Water Readiness initiative by adopting their materials, frameworks, and public education strategies while tailoring messages specifically to the needs of Micoud. The campaign will coordinate with the GCF Readiness team to align timing, messaging, and outreach efforts, ensuring that the two programs complement each other without overlapping.

In addition, partnerships with media associations will be developed to build the capacity of local journalists and media outlets in understanding and effectively communicating the impacts of climate change specific to Micoud. This will broaden the scope of the GCF initiative by expanding its media reach and engagement through local channels. The campaign will employ a variety of communication tools—traditional media, social media, workshops, and community engagement programs—ensuring a wide audience is reached and the messages are clear and actionable. Through this alignment, the project will enhance the existing efforts of the GCF Readiness Communications Consultancy while tailoring the approach to the specific needs and vulnerabilities of the Micoud community, making the initiative more locally relevant and impactful. Additionally, an education and outreach program will target schools, community-based organizations, and stakeholder groups, fostering awareness and active participation in water conservation efforts. Practical demonstrations will engage students in installing water-efficient measures at schools and public buildings, providing hands-on training for future water managers, and disseminating educational materials for wider awareness.

Output 3.1: Improved conservation and efficiency in the use of water resources

Activity 3.1.1: Develop and implement a gender-sensitive public awareness campaign including messaging related to Water Resources Management, Conservation of Forests, Water and Wastewater Services, Water Conservation, Demand Reduction, Rainwater Harvesting, Water Re-use, Water Recycling, Climate Change Impacts as well as any other related area. This also includes partnering with the Media Associations to build capacity in climate change issues and challenges.

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This is a comprehensive public awareness campaign designed to address water and climate change issues through a gender-sensitive approach. It promotes an inclusive cover of various topics, including Water Resources Management, Forest Conservation, Water and Wastewater Services, Water Conservation, Demand Reduction, Rainwater Harvesting, Water Re-use, Water Recycling, and Climate Change Impacts. The campaign leverages partnerships with media associations to expand its reach and build their capacity in understanding and reporting on climate change. It employs a diverse range of communication channels, including traditional and digital platforms, workshops, and feedback mechanisms, to engage the public and promote active participation in sustainable water and environmental management.

Activity 3.1.2: Develop and implement a programme of education and outreach in schools, community-based organizations, and stakeholder groups across customer class on water and climate to encourage conversation and efficient use of water resources in St. Lucia.

This activity focuses on promoting water conservation and climate awareness in Micoud, St. Lucia through targeted education and outreach. The program introduces curriculum-based sessions in schools, collaborates with community-based organizations for localized training, and provides specialized outreach to various customer classes addressing their unique water usage patterns. Utilizing hands-on demonstrations, media campaigns, and interactive platforms, the activity aims to foster active participation and awareness.

Activity 3.1.3: This activity will in gender responsive manner, engage students from secondary, tertiary, and Technical and Vocational Education and Training (TVET) institutions in the practical installation of water-efficient technologies and conservation measures at schools and public buildings. It includes hands-on, on-the-job training for TVET students, equipping them with the skills needed to implement water conservation measures in their future careers. To support this, educational toolkits and implementation guides will be developed, providing standardized resources for teaching and training, and guiding the implementation of water-efficient practices across Saint Lucia.

Partnerships with existing programs or government entities will be actively sought to ensure synergy, coordination, and alignment with similar efforts, maximizing the impact of this initiative. Through this activity, students will gain practical experience, merging theoretical learning with real-world application, and contributing directly to St. Lucia's water conservation efforts. This initiative cultivates a new generation of environmentally responsible individuals equipped to address future water management challenges.

Activity 3.1.4: Develop a framework for an incentive programme to support the adaptation of climate resilience, conservation and efficiency technologies amongst water users. This activity seeks to identify projects and products that can support efforts geared toward building resilience in homes and businesses.

Outcome 4: Enhanced learning, knowledge transfer, and dissemination of best practices for climate-resilient water management in Micoud.

The learning and knowledge transfer component of this project is designed to enhance the overall impact and sustainability of the interventions aimed at improving water resilience in Micoud. By documenting the project's successes, challenges, and innovations, and by facilitating the exchange of knowledge among local, national, and regional stakeholders, this component will play a crucial role in ensuring that the benefits of the project extend beyond its immediate implementation.

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~~Systematic documentation of all project activities, including challenges encountered and solutions developed, will be central to this component. This will not only help in improving the ongoing project but also serve as a resource for future projects in similar contexts. The platform will be managed by the implementing partner throughout the lifespan of the project. The implementing partner will be responsible for regularly updating the platform with project documents, case studies, reports, and best practices, ensuring that all information is accessible and transparently shared among stakeholders.~~

~~The development and maintenance costs of the digital platform will be incorporated into the project's budget. The platform's sustainability and continuity beyond the project's lifespan, we will collaborate with relevant government agencies during the implementation phase. These agencies will be identified and engaged to take over the management and maintenance of the platform after the project's conclusion.~~

~~Training and capacity-building activities will be conducted to ensure that local communities, government agencies, and other stakeholders have the necessary knowledge and skills to maintain and build upon the project's achievements.~~

~~The knowledge gained from this project will be shared with broader audiences, including other communities in Saint Lucia and the wider Caribbean region, through various channels such as reports, conferences, and media outreach.~~

~~By integrating these elements into the project, we aim to ensure that the knowledge generated is not only preserved but actively used to inform and improve water management practices in Micoud and beyond, ultimately contributing to the long-term resilience and sustainability of water resources in the face of climate change.~~

~~Output 4.1: Comprehensive documentation of project activities, challenges, and successes.~~

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~~Activity 4.1.1: Develop a Project Knowledge Management Plan (KMP) that outlines processes for capturing, storing, and sharing lessons learned. This includes setting up a dedicated team to collect data, monitor progress, and document challenges and solutions throughout the project.~~

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~~Activity 4.1.2: Regularly update a centralized digital platform with project documents, case studies, reports, and best practices, ensuring accessible and transparent sharing of information among stakeholders.~~

~~Activity 4.1.3: Create a series of video documentaries and written case studies that highlight key achievements, challenges, and lessons learned from the project. These materials will be distributed to local communities, government agencies, and regional partners.~~

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~~Output 4.2: Capacity building and training for local stakeholders.~~

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~~Activity 4.2.1: Conduct workshops and training sessions for local government officials, community leaders, local education institutions, and WASCO staff on the new technologies and processes implemented in the project. Focus on hands-on learning and practical application of skills.~~

~~Activity 4.2.2: Develop training manuals and educational materials tailored to different stakeholder groups, including technical guides for WASCO staff and simplified guides for community members on water conservation and climate resilience.~~

~~Activity 4.2.3: Establish a peer learning network among communities involved in similar projects across Saint Lucia, facilitating the exchange of knowledge, experiences, and best practices in water management and climate adaptation.~~

~~Output 4.3: Dissemination of project outcomes to broader audiences.~~

~~Activity 4.3.1: Organize a national conference at the end of the project to present findings, share lessons learned, and discuss future strategies for climate-resilient water management. Invite stakeholders from across the Caribbean to foster regional collaboration.~~

~~Activity 4.3.2: Publish a comprehensive final report that synthesizes all lessons learned and best practices identified during the project. Distribute this report to relevant government agencies, NGOs, and international partners.~~

~~Activity 4.3.3: Collaborate with local media outlets to share stories of success and innovation from the project, raising awareness among the public and encouraging broader adoption of best practices in water management.~~

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Project/Programme Components and Financing:

~~Fill in the table presenting the relationships among project components, activities, expected concrete outputs, and the corresponding budgets. If necessary, please refer to the attached instructions for a detailed description of each term.~~

Table 2 Project Components and Financing

Project/Programme Components	Expected Concrete Outputs	Expected Outcomes	Amount (US$)
Component 1: Building resilience in the water supply infrastructure and systems	1.1 Climate resilient water supply and network installed.	1.Increased reliability of water supply and water system services	5,200,500
Component 2: Optimization of potable water supply and reliability.	2.1 Systems to improve the distribution of potable water implemented.	2.Improved distribution and reliability of potable water supply;	1,900,000
Component 3: Strengthening institutional capacity and systems for climate responsive management of water resources.	3.1 Climate-related risks planning integrated into WASCO operations	3.Strengthened institutional capacity and systems for climate responsive management of water resources.	590,000
Component 4: Improving water conservation among water users for a climate resilient water sector	4.1 Improved conservation and efficiency in the use of water resources	4.Strengthened awareness of climate threats and risk-reduction processes associated with the water resources	460,000
Outcome 5: Enhancing learning, knowledge transfer, and dissemination of best practices for climate-resilient water management in Micoud	5.1 Comprehensive documentation of project activities, challenges, and successes. 5.2 Capacity building and training for local stakeholders 5.3 Dissemination of project outcomes to broader audiences.	5.Enhanced learning, knowledge transfer, and dissemination of best practices for climate-resilient water management in Micoud	260,000
4. **Project/Programme Execution cost**		798,998	
5. **Total Project/Programme Cost**		9,209,498	

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6. **Project/Programme Cycle Management Fee charged by the Implementing Entity (if applicable)**	782,807
Amount of Financing Requested	9,992,305

Project/Programme Components	Expected Concrete Outputs	Expected Outcomes	Amount (US$)
1. Component 1: Building resilience into the water supply infrastructure and systems	1. Climate resilient water supply and network installed. 2. Systems to optimise the distribution of potable water implemented	1. Increased reliability of water supply and water system services	7,254,990.00
2. Component 2: Strengthening institutional capacity and systems for climate responsive management of water resources.	1. Climate-related risks planning integrated into WASCO operations	1. Strengthened institutional capacity and systems for climate responsive management of water resources.	401,300.00
3. Component 3: Improving water conservation among water users for a climate resilient water sector	1. Improved conservation and efficiency in the use of water resources	1. Strengthened awareness of climate threats and risk-reduction processes associated with the water resources	422,300.00
4. Outcome 4: Enhancing learning, knowledge transfer, and dissemination of best practices for climate-resilient water management in Micoud	1. Comprehensive documentation of project activities, challenges, and successes. 2. Capacity building and training for local stakeholders 3. Dissemination of project outcomes to broader audiences.	Enhanced learning, knowledge transfer, and dissemination of best practices for climate-resilient water management in Micoud	188,000.00
4. Project/Programme Execution cost			$950,000.00
5. Total Project/Programme Cost			$8,266,590. 00
6. Project/Programme Cycle Management Fee charged by the Implementing Entity (if applicable)			$783,410.00
Amount of Financing Requested			$10,000,000.00

Projected Timelines:

The project is expected to be implemented over a 4-year period from October 2025 to September 2029

Table 3 Projected Timeline

Milestones	Expected Dates
Start of Project/Programme Implementation	~~October~~ June, 202~~5~~6
Mid-term Review (if planned)	June, 2028~~September 2027~~
Project/Programme Closing	December 2030~~April 2029~~
Terminal Evaluation	June, 2030~~September 2029~~

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PART II: PROJECT / PROGRAMME JUSTIFICATION

PART II: PROJECT / PROGRAMME JUSTIFICATION

A. Describe the project/programme components, particularly focusing on the concrete adaptation activities of the project, and how these activities contribute to climate resilience. For the case of a programme, show how the combination of individual projects will contribute to the overall increase in resilience.

Component 1: Building resilience in the water supply infrastructure and systems

Outcome 1: Increased reliability of water supply and water system services

The water infrastructure in Micoud, Saint Lucia faces significant challenges—ranging from inadequate storage capacity and inefficient pumping systems to susceptibility to extreme weather events, persistent non-revenue water (NRW) losses, and various operational inefficiencies. To address these issues and enhance system resilience, this component focuses on comprehensive upgrades and modernization efforts while promoting sustainable, low-carbon practices. Its primary objective is to strengthen the water supply infrastructure so that it can withstand the adverse impacts of climate change and ensure continuous, reliable water services for the community, particularly during extreme weather events.

Key adaptation measures include the installation of community-based rainwater harvesting systems and low-cost water filtration units for vulnerable households, providing supplementary water sources during droughts or disruptions in the main supply. A network of emergency water supply points will be established, with modifications to access points to specifically accommodate disabled and elderly residents, thereby ensuring secure and consistent access to clean water during emergencies. At this stage 20 1000-gallon tanks have been airmarked for specific vulnerable sections of the community. At the full funding proposal state an analysis will be conducted to determine how these are equitably distributed.

Additionally, the Micoud Water Treatment and Supply Systems will undergo a thorough vulnerability assessment, capacity enhancement, and modernization. This will involve integrating backup systems to guarantee uninterrupted operations during disasters, retrofitting existing infrastructure with 2 energy-efficient technologies—Variable Frequency Drives (VFDs) pumps to optimize speeds—and replacing outdated equipment with modern, energy-saving models. The incorporation of renewable energy sources, particularly photovoltaic (PV) systems of 110kw -200kWh lithium ion, will further reduce the carbon footprint of the water sector. A dedicated storage tank, with a capacity of 200,000K, will be installed at the treatment site to safeguard against droughts and supply disruptions, thereby building redundancy into the system.

Overall, this comprehensive approach addresses both immediate and long-term vulnerabilities, ensuring that Micoud's water supply infrastructure remains reliable and sustainable in the face of climate change. By enhancing operational efficiency and integrating sustainable practices, Component 1 will contribute to consistent economic productivity, improved public health outcomes, and increased community resilience—ultimately safeguarding the well-being of the entire community, especially its most vulnerable members. This output stands to directly and indirectly benefit the population of Micoud District.

Output 1.1: Climate resilient water supply and network infrastructure installed.

- **Activity 1.1.1**: Modernization and upgrade of the Micoud water treatment and supply systems: This activity involves assessing the vulnerabilities in the existing water treatment and supply infrastructure and implementing upgrades to ensure it meets current and future demands. These upgrades will address coagulation sedimentation, filtration and disinfection. It will overall enhance water treatment processes and improve water quality, addressing any weaknesses in the supply network, and integrating backup systems to maintain operations during disruptions such as extreme weather events or power outages.

- **Activity 1.1.2**: Retrofitting and upgrading of existing infrastructure with renewable energy and energy efficiency: This activity focuses on enhancing the energy efficiency of the water treatment and supply systems by retrofitting existing infrastructure with renewable energy sources and energy-efficient technologies. This may include the installation of grid tie Solar PV systems with battery backup (100kW – 200kWh lithium ion), wind turbines, or other renewable energy systems, as well as upgrading 2 VFD at the Ti Rocher pumping station to reduce energy consumption and operational costs.

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- **Activity 1.1.3:** This activity involves the installation of a water storage tank to improve the reliability of the water supply in Micoud. The tank will serve as a buffer during periods of drought or flooding, ensuring that the community has a reserve supply of clean water. It will also help reduce reliance on traditional water sources, which may be compromised during extreme weather events. The tank will be installed at the treatment site and will have a capacity 200,000K Gallons. The tank will supply the entire communities Escap to Ti Rocher including Micoud Village. Within these communities, there are residential and commercial developments and schools. The distribution network is used to provide water in a non-discriminatory manner.

- **Activity1.1.4** Community-Based Rainwater Harvesting and Filtration Systems for Vulnerable Households: Provide vulnerable households, particularly low-income families, with rainwater harvesting systems integrated with subsidized water filtration and purification units. These combined systems will offer a supplementary and reliable water source during droughts or disruptions to the main supply, while also ensuring that the collected rainwater is safe for drinking and other household uses.

- **Activity 1.1.5:** Emergency Water Access and Distribution System for Vulnerable, Disabled, and Elderly Residents; Develop a network of strategically located emergency water supply points throughout the community, specifically designed to accommodate the needs of vulnerable populations, including people with disabilities and elderly. These points will feature user-friendly systems such as lever handles, touchless technology, ramps, handrails, and non-slip surfaces to ensure safe and easy access. Additionally, install user friendly systems that cater specifically to the needs of disabled and elderly residents, ensuring they have secure and consistent access to clean water without physical barriers.

Component 2: Optimization of potable water supply and reliability.

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Outcome 2: Improved distribution and reliability of potable water supply.

This component focuses on reducing water losses and optimizing the distribution of potable water to enhance system efficiency and resilience. Climate change is exacerbating water scarcity through irregular rainfall patterns, prolonged droughts, and increased evaporation, while extreme weather events such as floods and storms further strain water supply systems. By reducing NRW, utilities can more efficiently utilize limited water resources, ensuring that essential services—agriculture, health, and domestic needs—continue uninterrupted even during periods of scarcity. In doing so, the project not only improves resource management but also mitigates climate change impacts by lowering the energy consumption associated with treating and distributing water, thereby reducing the sector's overall carbon footprint.

To achieve these objectives, the project will upgrade the Computerized Real-time Management System (CMMS) by integrating Geographic Information Systems (GIS) and Supervisory Control and Data Acquisition (SCADA) tools. This upgrade will enable real-time monitoring, prompt leak detection, and efficient water resource management, facilitating faster responses to disruptions and ensuring water availability during emergencies. Additionally, the project incorporates community-level interventions, including the installation of rainwater harvesting systems and low-cost water filtration units for vulnerable households, which provide supplementary water sources when the main supply is compromised. A network of emergency water supply points, with specially designed access for disabled and elderly residents, will also be established to guarantee secure access to clean water during severe disruptions.

Overall, Component 2 enhances the resilience of the water distribution network, reduces operational costs, and supports sustainable water management by addressing both technical and community-level challenges in the face of climate change.

Output 2.1: Systems to optimize the distribution of potable water implemented.

- **Activity 2.1.1:** Install five (5) Bulk meters to be installed at the intake and treatment plant backwash and overflows and 2000 Smart Meters in Strategic Locations to Reduce NRW in route 29: This activity involves the installation of bulk meters at major distribution points and smart meters at consumer endpoints across Micoud. Bulk meters will measure the flow of water entering different sections of the distribution network, while smart meters at individual properties will provide accurate, real-time data on water consumption. Reducing NRW is a vital adaptation strategy for maximizing the efficiency of water distribution. By lowering losses, water utilities can make better use of limited water resources, ensuring more water is available for essential services like agriculture, public health, and domestic use, even during times of climate-induced water shortages. These systems will enable more efficient water management, timely billing, and faster detection of leaks or other issues within the network

- **Activity 2.1.2:** Upgrade/Update the Computerized Real-time Management System (CMMS): This activity involves upgrading and updating the Computerized Real-time Management System (CMMS) used by WASCO to manage the water supply network. The upgrades will include the development and integration of Geographic Information System (GIS) tools, Supervisory Control and Data Acquisition (SCADA) systems, and software for leakage monitoring and reduction. It will also involve the creation of detailed maps of the island's water assets to support more efficient management and decision-making.

Component 3: Strengthening institutional capacity and systems for climate responsive management of water resources.

Outcome 3: Strengthened institutional capacity and systems for climate responsive management of water resources.

This component aims to enhance the resilience of the water sector by integrating climate-related risk planning into WASCO's operational and maintenance protocols. Component 3 intentionally builds upon and complements the outputs of the ongoing GCF Water Readiness initiative titled "Mainstreaming Climate Resilience into Water Sector Planning, Development and Operations in Saint Lucia". This Readiness initiative focuses on enhancing climate-resilient water governance by supporting the revision and implementation of water-re2lated policies and plans, strengthening regulatory frameworks (particularly through WRMA and NURC), and laying the groundwork for a climate-responsive tariff structure. In alignment with these goals this project will integrate the improved policy, regulatory, and governance frameworks developed under the GCF Readiness into the operational and institutional strengthening activities targeting WASCO and key sector actors. Expand the application of tools and knowledge generated under the GCF initiative (e.g., risk management frameworks, updated tariff structures) into the local operational environment, ensuring practical application and piloting at the community level. Leverage the capacity-building investments made in WRMA and NURC under the GCF initiative by targeting WASCO and other actors involved in implementation and delivery of water services at the local level. Focus on operationalizing resilience frameworks through applied training, risk-informed SOPs, updated protocols, and performance monitoring systems tailored to WASCO's service delivery context—thereby bridging the gap between upstream planning and downstream implementation. By refining its risk management framework to address climate-related threats, WASCO will be better equipped to adapt to climate shifts, thereby strengthening overall climate resilience. The focus is on refining existing disaster response strategies for events such as droughts and hurricanes, and developing new policies, guidelines, and procedures for water abstraction, treatment, distribution, and maintenance in the context of climate change. These advancements are crucial for supporting infrastructure longevity and effectively managing unforeseen environmental risks.

In addition, the project will integrate a centralized geospatial water management system to combine comprehensive water-related data, enabling efficient planning, monitoring, and strategic resource management. Comprehensive training will be provided to WASCO personnel and associated stakeholders—including the Water Resource Management Agency (WRMA), Forestry Department, Ministry of Environment and Sustainable Development, local municipalities, Community-Based Organizations (CBOs), and relevant research institutions and NGOs—to build capacity in modern management techniques, maintenance practices, and advanced technologies for addressing climate change. This training is tailored to deliver specific value to each stakeholder: for example, WRMA will enhance its ability to monitor water quality and ensure that protocols align with national water management policies, while the Forestry Department will refine its watershed management strategies to better safeguard water supply systems. The Ministry of Environment and Sustainable Development will gain advanced tools to offer policy guidance on adaptation strategies, fostering a cohesive governmental response to climate risks. Local municipalities and CBOs will be empowered to more effectively disseminate information, engage communities in disaster preparedness, and facilitate local climate adaptation initiatives. Meanwhile, research institutions and NGOs—such as the University of the West Indies—will bolster their technical expertise, supporting robust monitoring, evaluation, and knowledge-sharing efforts. By delivering role-specific training to all these entities, the project promotes collaborative institutional strengthening, ensuring that each stakeholder contributes to and benefits from an integrated, resilient, and sustainable approach to water resource management in the face of evolving climatic conditions.

Output 3.1: Climate-related risks planning integrated into WASCO operations.

Activity 3.1.1: Develop SOPs, manuals and a disaster risk plan for the upgraded Micoud water treatment and supply systems. In the context of climate change and disaster risk management, a comprehensive set of SOPs, manuals and disaster risk plan will be designed to provide detailed guidelines for sustained operations of the water treatment plant.

Activity 3.1.2: Develop and implement a centralize geo-spatial database of water source quality and quantity, disruptions, intakes and treatment systems, distribution systems, storage capacity, elevations, hydromet and end-users and consumption (by type).

Activity 3.1.3: Install data capturing devices and equipment in sources of water

Activity 3.1.4: Develop and deliver comprehensive training programs in water resource management, groundwater mapping, plant operations and maintenance, smart metering, Computerized Maintenance Management Systems (CMMS), Geographic Information Systems (GIS), Supervisory Control and Data Acquisition (SCADA), climate change adaptation, and gender, social, and environmental safeguards. These training sessions will target key institutions, including:

- WASCO and WRMA, who are central to water supply operations and resource regulation.
- The National Utilities Regulatory Commission (NURC), whose oversight of service standards and pricing is essential to embedding climate resilience within regulatory frameworks.
- Ministries responsible for:
    - Sustainable Development, which plays a vital role in supporting long-term behavioral change through public education and national policy alignment.
    - Infrastructure and Physical Planning, which ensures that future infrastructure developments are climate-resilient and strategically located.
    - Agriculture, Fisheries, Food Security, and Rural Development, which are pivotal in promoting efficient water use and climate-smart agricultural practices.
    - Health, Wellness, and Elderly Affairs, with a focus on safeguarding public health, particularly among vulnerable populations, during climate-related water crises.
- The National Emergency Management Organization (NEMO), whose capacity for disaster risk management and emergency water supply coordination will be strengthened.
- And Community-Based Organizations (CBOs) and Civil Society Organizations (CSOs), which are critical to local-level implementation, awareness-raising, and ensuring inclusive, community-driven approaches to climate and water resilience**.**

At the full funding proposal stage, a comprehensive mapping of ongoing and planned capacity-building initiatives within the water sector will be conducted. This exercise will identify opportunities for complementarity and ensure strong synergies across national and donor-led efforts, avoiding duplication and maximizing the impact of training investments.

Component 4: Improving water conservation among water users for a climate resilient water sector

Outcome 4: Strengthened awareness of climate threats and risk-reduction processes associated with water resources.

This component aims to enhance community awareness and promote sustainable practices specifically tailored to the local context of Micoud, without duplicating the broader public education efforts of the GCF Water Readiness initiative. While the GCF intervention provides a comprehensive thematic framework—covering water resources management, conservation of forests, water and wastewater services, water conservation, demand reduction, rainwater harvesting, water re-use, and climate change impacts—this component will build on those outputs by adapting the messaging and educational materials to address the unique needs and vulnerabilities of the Micoud community.

Our approach will involve targeted, locally focused activities such as interactive workshops, community dialogues, and demonstration projects that not only disseminate information but also encourage active participation and practical application. By incorporating local case studies, engaging local media, and facilitating participatory events, we will ensure that the public education efforts resonate with Micoud's

residents, including vulnerable groups like female-headed households. In doing so, we foster a culture of sustainability and resilience that is context-specific and responsive to local challenges.
Through this tailored strategy, Component 4 will complement the GCF intervention by reinforcing local ownership and deepening community engagement in climate adaptation, ultimately contributing to long-term resilience without overlapping or duplicating existing initiatives.

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Output 4.1: Improved conservation and efficiency in the use of water resources

Activity 4.1.1: Adapt and build upon existing gender-Sensitive public awareness campaigns- Develop and implement a gender-sensitive public awareness campaign that adapts and builds upon the existing initiatives, tailoring it to address the unique challenges and opportunities within Micoud. This activity will integrate local data, case studies, and stakeholder input to refine themes such as water resources management, conservation, and climate change impacts, addressing the specific needs of the community—especially vulnerable groups like female-headed households. Through interactive workshops, community sessions, and targeted local media outreach, the campaign will enhance public engagement and promote sustainable water management without duplicating existing national efforts. A potential risk of building on an existing framework is that the adapted content may not fully capture Micoud's unique local context if not sufficiently customized, which could limit its effectiveness in driving meaningful local engagement and resilience. To mitigate this risk, we will keep continuous local stakeholder involvement throughout the campaign's development and implementation, ensuring that the messaging and strategies are still highly relevant and flexible to address evolving local needs.

Activity 4.1.2: Develop and implement a programme of education and outreach in schools, community-based organizations, and stakeholder groups across customer class on water and climate to encourage conversation and efficient use of water resources in St. Lucia. This activity focuses on promoting water conservation and climate awareness in Micoud, St. Lucia through targeted education and outreach. The program introduces curriculum-based sessions in schools, collaborates with community-based organizations for localized training, and provides specialized outreach to various customer classes addressing their unique water usage patterns. Utilizing hands-on demonstrations, media campaigns, and interactive platforms, the activity aims to foster active participation and awareness.

Activity 4.1.3: This activity will in gender responsive manner, engage students from secondary, tertiary, and Technical and Vocational Education and Training (TVET) institutions in the practical installation of water-efficient technologies and conservation measures at schools and public buildings. It includes hands-on, on-the-job training for TVET students, equipping them with the skills needed to implement water conservation measures in their future careers. To support this, educational toolkits and implementation guides will be developed, providing standardized resources for teaching and training, and guiding the implementation of water-efficient practices across Saint Lucia.
Partnerships with existing programs or government entities will be actively sought to ensure synergy, coordination, and alignment with similar efforts, maximizing the impact of this initiative. Through this activity, students will gain practical experience, merging theoretical learning with real-world application, and contributing directly to St. Lucia's water conservation efforts. This initiative cultivates a new generation of environmentally responsible individuals equipped to address future water management challenges.
Activity 4.1.4: Develop a framework for an incentive programme to support the adaptation of climate resilience, conservation and efficiency technologies amongst water users. This activity seeks to identify projects and products that can support efforts geared toward building resilience in homes and businesses.

Component 5: Enhancing learning, knowledge transfer, and dissemination of best practices for climate-resilient water management in Micoud

Outcome 5: Enhanced learning, knowledge transfer, and dissemination of best practices for climate-resilient water management in Micoud.

In the context of Micoud's water supply challenges, climate change introduces unpredictable variables that require adaptive, resilient solutions. The effectiveness of these solutions depends not only on their implementation but also on the ability of the community and stakeholders to learn from these interventions and apply this knowledge in future scenarios. To this end, the Learning and Knowledge Transfer component

is designed to systematically capture, share, and utilize lessons learned, best practices, and innovations generated through the project—thereby embedding resilience within the community and ensuring that the project's impact extends beyond its immediate activities

This component enhances the sustainability of water resilience interventions by systematically documenting successes, challenges, and innovations, and by facilitating knowledge exchange among local, national, and regional stakeholders. A digital platform will be established and managed by the implementing partner throughout the project's lifespan, with a planned transition of responsibility to key local government bodies—including the Ministry of Environment and Sustainable Development, the Water Resource Management Agency (WRMA), local municipalities—and active civil society organizations. These entities will collaborate to manage and update the platform, ensuring it remains an active, relevant tool for strategic planning and policy development in water resource management. The platform will be regularly updated with project documents, case studies, reports, and best practices, thereby ensuring accessible and transparent information sharing among stakeholders, with its development and maintenance costs incorporated into the project budget.

In addition to the digital platform, the project will ensure that the knowledge generated is accessible through community resource centers, school libraries, and other local public venues. These physical access points will allow residents to engage with the project's outputs—such as case studies, best practices, and educational materials—thereby reinforcing the impact of our digital and media-based efforts. The knowledge gained will also be disseminated to broader audiences, including other communities in Saint Lucia and the wider Caribbean region, through reports, conferences, and media outreach.

By integrating these elements, the project will ensure that the insights generated are not only preserved but actively used to enhance water management practices in Micoud and beyond, thereby contributing to the long-term resilience and sustainability of water resources amid climate change. The proposed model, underpinned by the strategic directions outlined in the Water SASAP and NAP, will be further detailed in the full funding proposal with case studies from other Small Island Developing States and assessments of funding mechanisms to demonstrate its potential for sustained impact and long-term resilience.

Output 5.1: Comprehensive documentation of project activities, challenges, and successes.

Activity 5.1.1: Develop a Project Knowledge Management Plan (KMP) that outlines processes for capturing, storing, and sharing lessons learned. This includes setting up a dedicated team to collect data, monitor progress, and document challenges and solutions throughout the project.

Activity 5.1.2: Regularly update a centralized digital platform with project documents, case studies, reports, and best practices, ensuring accessible and transparent sharing of information among stakeholders.

Activity 5.1.3: Create a series of video documentaries and written case studies that highlight key achievements, challenges, and lessons learned from the project. These materials will be distributed to local communities, government agencies, and regional partners.

Output 5.2: Capacity building and training for local stakeholders.

Activity 5.2.1: Conduct workshops and training sessions for local government officials, community leaders, local education institutions, and WASCO staff on the new technologies and processes implemented in the project. Focus on hands-on learning and practical application of skills.

Activity 5.2.2: Develop training manuals and educational materials tailored to different stakeholder groups, including technical guides for WASCO staff and simplified guides for community members on water conservation and climate resilience.

Activity 5.2.3: Establish a peer learning network among communities involved in similar projects across Saint Lucia, facilitating the exchange of knowledge, experiences, and best practices in water management and climate adaptation.

Output 5.3: Dissemination of project outcomes to broader audiences.

Activity 5.3.1: Organize a national conference at the end of the project to present findings, share lessons learned, and discuss future strategies for climate-resilient water management. Invite stakeholders from across the Caribbean to foster regional collaboration.

Activity 5.3.2: Publish a comprehensive final report that synthesizes all lessons learned and best practices identified during the project. Distribute this report to relevant government agencies, NGOs, and international partners.

Activity 5.3.3: Collaborate with local media outlets to share stories of success and innovation from the project, raising awareness among the public and encouraging broader adoption of best practices in water management.

1. **Component 1:** This component is designed to directly address the vulnerabilities in Micoud, Saint Lucia's water supply infrastructure, particularly in the face of increasing climate change impacts. The primary focus is on enhancing the resilience, reliability, and sustainability of the water systems that serve the community. The adaptation activities under this component are comprehensive and targeted, aiming to fortify the water supply against the threats posed by extreme weather events, such as droughts and hurricanes, which are expected to intensify due to climate change.

Key activities include the installation of water storage tanks at the treatment facility to ensure a continuous water supply during droughts and disruptions, thereby building redundancy into the system. The modernization and upgrade of the Micoud Water Treatment and Supply Systems will address vulnerabilities by improving water treatment processes, integrating backup systems for uninterrupted operations during disasters, and enhancing infrastructure efficiency. To further support sustainability, the project will retrofit existing water infrastructure with energy-efficient technologies, such as Variable Frequency Drives (VFDs), and integrate renewable energy sources, particularly photovoltaic (PV) systems. These measures not only reduce the carbon footprint of the water sector but also ensure operational continuity during power disruptions caused by climate events.

Additionally, the Computerized Real-time Management System (CMMS) will be upgraded with Geographic Information Systems (GIS) and SCADA tools, providing real-time monitoring, leak detection, and efficient management of water resources. This enables faster responses to disruptions and ensures water availability during emergencies.

Importantly, the project also includes community-based rainwater harvesting systems and low-cost water filtration units for vulnerable households, providing supplementary water sources and ensuring access to clean water, especially during droughts or when the main supply is compromised. To further enhance accessibility, a network of emergency water supply points will be established, with modifications to water access points specifically designed for disabled and elderly residents, ensuring that all community members have secure access to clean water during severe disruptions.

These activities collectively contribute to climate resilience by strengthening both the physical infrastructure and the community's capacity to respond to and recover from climate-related water challenges. By addressing immediate and long-term vulnerabilities, Component 1 ensures that Micoud's water sector remains reliable and sustainable, even as climate change intensifies, ultimately safeguarding the well-being of the entire community, particularly its most vulnerable members.

2. **Component 2:** By enhancing WASCO's risk management framework to address climate-related threats, internal operations are better equipped to confront and adjust to climate shifts, hence, strengthening climate resilience. The second component focuses on the refinement of current disaster response methods, such as droughts or hurricanes, and the development of new policies, guidelines, and procedures for water abstraction, treatment, distribution, and maintenance in the context of climate change. Such advancements are pivotal for maintaining infrastructure and ensuring its longevity, especially as changing environmental conditions can be paired with unforeseen risks. Moreover, the integration of a centralized geo-spatial water management system, coupled with comprehensive training for WASCO personnel and associated departments

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on up-to-date management techniques, maintenance, and advanced technology, fosters resilient and sustainable operations in the face of a changing climate.

3. **Component 3:** places focus on adaptation through education and awareness to enhance conservation and efficiency within the water sector. Covering diverse topics such as Water Resources Management, Forest Conservation, Water and Wastewater Services, Water Conservation, Demand Reduction, Rainwater Harvesting, Water Re-use, Water Recycling, and the Impacts of Climate Change, through a gender-sensitive approach. By encouraging public engagement, it not only imparts knowledge but also creates a culture of sustainability that spans generations. This extends to practical, hands-on learning through school programs and community outreach, addressing localized challenges within the water sector and promoting climate resilience.
4. **Component 4:** In the context of Micoud's water supply challenges, climate change introduces unpredictable variables that require adaptive and resilient solutions. However, the effectiveness of these solutions is not solely dependent on their implementation but also on the ability of the community and stakeholders to learn from these interventions and apply this knowledge in future scenarios. As such, this component is essential for embedding resilience within the community, allowing them to adapt to ongoing and future climate impacts. The Learning and Knowledge Transfer component is designed to ensure that the lessons learned, best practices, and innovations generated through the project are systematically captured, shared, and utilized to enhance climate resilience within Micoud and beyond. This component is vital because it fosters continuous improvement, empowers stakeholders, and ensures that the project's impact extends beyond its immediate activities by building local capacity and promoting sustainable practices

A.B. Describe how the project/programme provides economic, social, and environmental benefits, with particular reference to the most vulnerable communities, and vulnerable groups within communities, including gender considerations. Describe how the project/programme will avoid or mitigate negative impacts, in compliance with the Environmental and Social Policy and Gender Policy of the Adaptation Fund.

Economic Benefits

The project supports key sectors such as agriculture and tourism, which are vital to the island's economy. According to the Agriculture SASAP, climate change has led to increased frequency and intensity of droughts and irregular rainfall patterns in Saint Lucia. This has resulted in water scarcity, which directly leads to reduced crop yields and quality, resulting further in income losses for farmers and affecting the livelihoods of those involved in the agricultural supply chain. This has broader implications for food security and the local economy. A reliable water supply ensures that agricultural activities can be sustained and even expanded, leading to increased agricultural productivity and food security. This, in turn, can enhance the livelihoods of farmers and those involved in the agricultural supply chain. Micoud is one of the principal agricultural districts in Saint Lucia, with a significant portion of its population engaged in farming activities. The district is known for the cultivation of bananas, plantains, root crops, vegetables, and fruits.

Tourism, a cornerstone of Saint Lucia's economy, also benefits significantly from a reliable water supply. Although Micoud is not currently a vibrant tourism destination, the government's efforts to bolster community tourism—by supporting community-based projects[17]—aim to improve the overall tourism product in this region. This initiative creates a strong rationale for the need for a dependable water supply. Consistent water availability can enhance the quality of services provided to tourists, thereby boosting visitor satisfaction and potentially increasing tourism revenue for micro, small, and medium-sized enterprises (MSMEs). The project generates employment opportunities through the construction, operation, and maintenance of water infrastructure. These jobs not only provide immediate income but also contribute to

[17] https://ctasaintlucia.org/the-government-of-saint-lucia-receives-continued-funding-support-for-community-tourism-projects-from-the-caricom-development-fund/

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~~skill development within the local workforce. The enhanced infrastructure attracts investment, both domestic and foreign, as investors seek stable environments with reliable water resources. 4~~

~~Reduced healthcare costs are another economic benefit, as improved water quality and access lead to better public health outcomes. Fewer waterborne diseases mean lower healthcare expenditures for both individuals and the government. Additionally, a healthier population is more productive, contributing positively to the economy.~~

~~Moreover, increased productivity extends beyond health improvements. By reducing the time spent collecting water, particularly for women and children, the project allows more time for education and economic activities, further stimulating economic growth.~~

~~Lastly, the project fosters climate resilience, protecting the economy from the adverse effects of climate change and extreme weather events. By safeguarding water resources, it ensures that economic activities can continue with minimal disruption during climatic events, thus providing a stable economic environment~~

The project supports key sectors such as agriculture and tourism, which are vital to Saint Lucia's economy. According to the 2010 Population and Housing Census, Micoud District[i] has a population of 16,284[18] with a significant proportion engaged in agriculture in one of the island's principal farming districts. In Micoud Village where the treatment plant is located for example has a population of 943 residents (511 males and 432 females), Reliable water supply is critical. Currently, 62.9% of households receive public piped water directly into their dwellings, 16% have public piped water to their yard, 6.3% access water through public standpipes outside of their dwelling, and 11.6% rely on spring water. Additionally, 3.2% of households access water from other sources. Reliable water supply is critical—currently, 62.9% of households receive public piped water directly into their dwellings, 16% receive public piped into their yard, 6.3 percent public standpipe outside of the dwelling unit , and 11.6% utilize the spring water. With a 3.2 accessing other means. A fuller picture at a district level is seen in **Pregender Analysis in Annex 1.** By ensuring a dependable water supply through reducing NRW losses, improving storage capacity, and enhancing energy efficiency, the project increases water availability for irrigation, potentially impacting higher crop yields and income stability for farmers. As Micoud is a key agricultural hub, sustaining the production of bananas, plantain, vegetables, and root crops, this intervention will strengthen food security and livelihood by bolstering farmers' incomes, and support the broader agricultural supply chain.

The tourism sector, which consumes 17% of the national water supply, is expected to expand in Micoud with the government's push for community tourism[19]. A dependable water supply will enhance the quality of services provided to visitors, boosting micro, small, and medium-sized enterprises (MSMEs) and local employment.
The project also creates employment through infrastructure development and long-term system maintenance, while reducing operational costs by integrating energy-efficient and renewable technologies. Improved water infrastructure will lower healthcare costs by reducing waterborne diseases, improving workforce productivity. Additionally, by reducing the time that vulnerable populations—especially women and children—spend collecting water, the project will free up time for education and economic activities, fostering greater participation in the labor market.

Social Benefits

The projects ~~will~~significantly improve public health outcomes by ensuring access to safe ~~and~~ consistent ~~reliable~~ water access, thereby reducing the prevalence of ~~waterborne diseases~~waterborne diseases and promoting better hygiene practices. This is particularly significant in Micoud village, where many residents live in separate, detached houses (97.5%), yet many face insecure land tenure (with only 30.3% of households owning/freeholding their homes). By improving water services, the project directly addresses the needs of vulnerable groups and promotes social equity. Currently, in Micoud village, 57.5% of people access drinking water through public pipes directly into their dwellings, 19.7% use public standpipes outside of their dwelling, 12.7% rely on spring or river water, 6.8% use bottled water, and 3.2% obtain water from other sources. Temporary disruptions in water services during the dry season and post-disaster recovery

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[18] Preliminary Gender Analysis- Annex 1
[19] https://ctasaintlucia.org/the-government-of-saint-lucia-receives-continued-funding-support-for-community-tourism-projects-from-the-caricom-development-fund/

have been linked to increases in gastroenteritis cases, particularly among children under five[20]. By upgrading infrastructure and improving storage, the project will ensure a more reliable and resilient water supply, particularly benefiting 9 schools with a population of 3330 students[21], 5 healthcare facilities[22], and 31 emergency shelters[23] throughout the district. and promoting better hygiene practices. This leads to healthier communities and a decrease in illness-related incidents.

The project also stimulates economic development by supporting key sectors like agriculture and tourism and creating jobs through infrastructure projects and maintenance. Moreover, forest fires and prolonged droughts threaten water access, particularly for vulnerable rural communities. By establishing strategic water storage systems and community-based rainwater harvesting initiatives, the project will enhance resilience to these climate hazards, ensuring that communities have emergency water supplies for household needs and fire suppression. Additionally, community-based training and capacity-building programs will empower residents, schools, and Technical and Vocational Education and Training (TVET) students with the skills necessary to operate and maintain climate-smart water systems. Installation of water-efficient measures at schools and public buildings—will provide hands-on training opportunities for TVET students, thereby enhancing human capital development.Targeted interventions, such as the installation of water-efficient measures at schools and public buildings, provide hands-on training opportunities for Technical and Vocational Education and Training (TVET) students, enhancing their employability and contributing to human capital development. Inclusive public awareness campaigns will promote behavior change and water conservation habits, ensuring that households and businesses adopt sustainable water practices. Community engagement including community-based organizations, women and youth group the project foster inclusivity and community ownership. actively participate in water management and climate adaptation initiatives, thereby strengthening community cohesion and social resilience.

Additionally, it enhances the quality of life by providing a consistent water supply, which improves living conditions and frees up time for education and other productive activities, particularly for women and children**.** The project also promotes social equity by ensuring equitable access to water resources, reducing disparities between urban and rural areas. Through education and awareness campaigns, communities become more informed about the importance of water conservation, leading to greater support and engagement in these efforts

By engaging stakeholders across various sectors, including schools, community-based organizations, and vulnerable groups, the project promotes social cohesion and inclusivity, ensuring that all members of society have access to clean water and participate in decision-making processes.

Environmental Benefits:

The project aimed offers numerous environmental benefits. Sustainable water management practices reduce over-extraction and help preserve water bodies, maintaining groundwater levels and surface water systems. This supports the health of ecosystems and preserves biodiversity by protecting natural habitats. Improved water infrastructure reduces pollution risks, ensuring cleaner rivers, lakes, and coastal areas. Climate-smart infrastructure mitigates the impacts of extreme weather, reducing erosion and flooding, thereby protecting the environment. Public education on water conservation encourages communities to adopt practices that minimize water waste, lowering the strain on local resources. Proper water management supports soil health, preventing over-irrigation and erosion, and promoting better agricultural productivity. Capacity building efforts educate communities on sustainable practices and natural resource protection, fostering greater community involvement in environmental conservation. Overall, the project enhances the sustainability and health of Saint Lucia's natural environment.

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The project offers significant environmental advantages by implementing sustainable water management practices that reduce over-extraction and minimize non-revenue water (NRW) losses. With 11.6% of households currently relying on springs or rivers for water supply and 3.2% using alternative sources,

[20]The Economics of Climate Change in the Caribbean- 2011 Economic Commission for Latin America and the Caribbean (ECLAC)

[21] Department of Education, Innovation, Science, Technology and Vocational Training https://www.education.gov.lc/school-supervision/district-five/

[22] Government Information Service - Saint Lucia/Health Centers

[23] NEMO Saint Lucia -Shelter Listing 2022/23

improving water conservation is critical to preserving groundwater and surface water systems. Forest fires are a growing threat in Saint Lucia, particularly in dry seasons, exacerbated by water shortages[24]. The project addresses this risk by improving emergency water storage capacity for firefighting and integrating sustainable water retention measures in high-risk zones, particularly in rural and agricultural areas. By upgrading infrastructure and integrating renewable energy sources (e.g., photovoltaic systems) into water treatment plants the project will reduce the carbon footprint of the water sector by incorporating renewable energy. These efforts also support soil health and prevent erosion, contributing to sustainable agricultural productivity and biodiversity preservation in Micoud.

Gender considerations

This project takes a gender-responsive approach to ensure equitable access to water resources for all community members. Micoud has a high concentration of indigence (27.4%) and one of the highest rates of non-indigent poverty (15.9%) in the country. Unemployment rates in Micoud are also notably higher for women (32%) than for men (24%), reflecting structural labor market inequalities that impact economic security and resilience[25].

Women bear a disproportionate burden in water collection, household water management, and caregiving responsibilities. A gender-sensitive approach will ensure that female-headed households, caregivers, and vulnerable groups are prioritized in water access improvements and emergency water distribution plans.

The project will integrate gender-responsive training programs, ensuring that women and youth are actively engaged in water conservation initiatives, technical training, and decision-making processes. Additionally, public awareness campaigns will include gender-sensitive messaging on climate resilience and water use efficiency, ensuring that behavior change strategies are inclusive and accessible to all community members.

A preliminary gender analysis has been conducted (see Annex), further detailing gender-specific vulnerabilities, coping mechanisms, and potential interventions to enhance women's empowerment and equitable access to project benefits. ~~This project is committed to fostering a gender-responsive, inclusive, and mainstreamed approach at every stage of planning, initiation, and implementation. Recognizing that climate change impacts can disproportionately affect diverse gender groups and vulnerable populations, the project places a strong emphasis on ensuring equitable participation and benefits. From the initial planning stages, the project team will actively engage with and seek the input of women, men, and marginalized communities to understand their unique perspectives and needs in relation to water security and climate resilience. The project design will incorporate gender-sensitive strategies, recognizing the different roles and impacts of climate change on individuals. Initiatives will be implemented to ensure that women and marginalized groups actively participate in decision-making processes, and their voices are amplified. Capacity building and training programs will be tailored to address specific needs and challenges faced by different genders, promoting inclusivity and equality. The monitoring and evaluation framework will incorporate gender-disaggregated data to track and assess the project's impact on diverse communities, ensuring that outcomes are not only resilient to climate change but also contribute to social equity and inclusiveness. This comprehensive and integrated gender-responsive approach reflects the project's commitment to promoting environmental sustainability hand in hand with social justice.~~

Overall, the project adheres to the Environmental and Social Policy and Gender Policy of the Adaptation Fund, ensuring that potential adverse environmental and social impacts are proactively identified and mitigated~~.all activities are implemented in a manner that avoids or mitigates negative environmental and social impacts.~~ A comprehensive Environmental and Social Risk Assessment will be conducted, with specific attention to land-use conflicts, infrastructure impacts, and vulnerable populations at full funding proposal stage.

~~Environmental and social risks will be identified and assessed during project planning and implementation, with appropriate measures put in place to minimize adverse effects on ecosystems, communities, and vulnerable groups. Gender considerations will be mainstreamed throughout the project cycle, ensuring equitable participation and benefits for women and men, while actively addressing gender-based disparities and promoting women's empowerment in water management and decision-making processes.~~ A ~~robust~~ grievance redress mechanism (GRM) will be established, to address community concerns, ~~ensuring that~~

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[24] Saint Lucia's Resilient Ecosystems Adaptation Strategy and Action Plan (REASAP) 2020–2028

[25] Government of Saint Lucia. (2016). Saint Lucia National Report of Living Conditions 2016.

~~gender-sensitive issues~~interrelated risks and social inclusion challenges., ~~such as risks of sexual exploitation or harassment, are addressed promptly and equitably.~~ Through regular stakeholder engagement and transparent communication, the project will ensure that benefits are equitably distributed, and no group is disproportionately affected by project activities. Evidence of this will be seen in the stakeholder engagement plan at full funding proposal stage.~~Gender-disaggregated indicators will be used to track project impacts, ensuring continuous alignment with gender equity goals and early identification of potential issues.~~

~~B.~~ Describe or provide an analysis of the cost-effectiveness of the proposed project/programme.

C.

The project takes an integrated, climate-resilient approach to address critical vulnerabilities in the water supply infrastructure of Micoud, Saint Lucia. The strategy includes upgrading outdated treatment systems, installing emergency water storage, retrofitting with energy-efficient equipment, and institutional strengthening. These measures directly target current inefficiencies—such as the 42% non-revenue water (NRW) loss—and vulnerabilities to droughts, flooding, and turbidity. By targeting both infrastructure and governance simultaneously, the project maximizes returns across operational, social, and environmental outcomes with a relatively modest investment (USD 10 million). The cost-beneficiary ratio (based on Micoud's population) remains highly favourable at USD 614.10 per person, especially considering the long-term service continuity, improved public health, and increased economic activity that result.

The cost-effectiveness of the project is strengthened by its emphasis on long-term sustainability. Energy-efficient retrofits (e.g., solar PV, VFDs), SCADA systems, and GIS-integrated asset management reduce recurring costs, while improved metering and billing mechanisms enhance WASCO's revenue collection. Additionally, the training and capacity-building components ensure that both WASCO and national agencies (e.g., WRMA, NURC) can maintain and scale project benefits without external support. Public awareness initiatives reinforce demand-side conservation practices, helping to manage future water demand. These factors collectively reduce future capital and maintenance expenditure, contributing to long-term financial and environmental sustainability.

Maintaining the status quo—continued reliance on deteriorated infrastructure and reactive emergency response—would lead to escalating operational costs, more frequent service interruptions, and heightened climate vulnerability. Alternatively, small-scale or decentralized interventions (e.g., community-only rainwater harvesting) would be less costly upfront but insufficient to address systemic NRW losses, institutional weaknesses, or regional water security risks. A phased, incremental approach could spread investment over a longer period but risks delays in addressing immediate climate vulnerabilities. In contrast, the proposed project addresses root causes comprehensively, offering a more strategic and cost-effective use of limited adaptation financing.

The proposed interventions have been benchmarked against other water-sector projects implemented in Saint Lucia and the region, such as the Dennery North Water Supply Project and Vieux Fort upgrades. These previous interventions focused heavily on infrastructure but lacked integrated capacity building or risk management frameworks. In contrast, the proposed project applies a multi-dimensional resilience lens—combining hardware (infrastructure) with software (governance, awareness, and training)—ensuring more robust and lasting outcomes. It also draws lessons from GCF and CDB-funded projects and intentionally avoids duplication while maximizing synergy with those initiatives. A more detailed cost effectiveness analysis will be provided at full proposal stage.

~~1. analysis and With a cost/beneficiary ratio of USD $614.10, using the population size of Micoud, the project is expected to create the enabling environment which will result in greater efficiency and effectiveness in the sector. The AF grant will be utilized to mitigate climate-induced risks to the water sector, in particular, the availability of drinking water during the dry season, and following extreme weather events. The targeted population will benefit from these interventions, but poor and vulnerable groups would specifically benefit from some of the project activities included under the project.~~

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~~2. Economic and financial analyses will be carried out as part of the feasibility study in support of the Funding Proposal. Indicators such as Financial Rate of Return (FRR), and Economic Rate of Return (ERR) will be calculated to support the level of efficiency and effectiveness provided by the outputs of the project. However, based on the outputs from components 1 and 2, it is expected that critical financial and economic benefits will accrue to the economy overall, in terms of cost savings related to reduced maintenance of aged and climate impact prone infrastructure, the ability to provide water to customers during periods of drought and following storm events. In addition, WASCO's finances are expected to be more robust with the Climate Resilient Water eGovernance component of other related initiatives, which would facilitate increased revenue from a re-constituted tariff structure. In addition, the energy efficiency measures to be introduced in WASCO's operations would likely contribute modest reductions in emissions.~~

~~3. Promoting conservation and efficient use of water resources through public awareness and education campaigns has proven to be a cost-effective strategy in various global contexts. When approached holistically, as proposed in St. Lucia, the benefits often outweigh the costs. A comprehensive public awareness campaign addressing Water Resources Management, Conservation of Forests, and related topics serves as a foundational layer. Forest conservation, for instance, ensures healthy watersheds that naturally filter and regulate water supplies, leading to reduced treatment costs and consistent water flows. Promotion of practices such as Rainwater Harvesting, Water Re-use, and Water Recycling directly impacts consumers by providing alternative water sources, thereby reducing reliance on centralized water supplies. This not only aids in Demand Reduction but also translates to economic savings for consumers and reduced strain on public water infrastructure.~~

~~4. When combined with an education program in schools and community-based organizations, the campaign's messages gain longevity. Instilling these values in younger generations ensures continued conservation efforts in the long term. Moreover, by targeting various customer classes, including businesses and households, the program ensures broad-based adoption of water-saving measures. The development of Toolkits for teaching and training further solidifies the initiative's cost-effectiveness. These toolkits provide clear guidelines on implementing water-efficient and conservation measures. When widely distributed and utilized, they can lead to standardization in practices, making efforts more systematic and impactful. Savings achieved from reduced water treatment costs, deferred infrastructure upgrades, and environmental preservation are likely to surpass the initial investment in campaign and educational initiatives.~~

~~5. The upgrade to Micoud's water system not only directly benefits Micoud's residents but has a positive impact on surrounding areas, specifically the Patience and Desruisseaux water systems. These systems, previously aiding Micoud's water needs, now experience reduced demand which provides added benefits such as prolonged life of infrastructure and decreased maintenance expenses. Moreover, during prolonged dry periods, these neighboring systems have an additional safeguard, ensuring consistent supply to their communities. In a broader perspective, the entire region stands to gain from Micoud's improved water system, showcasing how targeted infrastructure upgrades in one area can indirectly benefit the surrounding community, ensuring resilience and sustainability and thereby reducing the cost/beneficiary ratio.~~

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~~C.~~D. Describe how the project/programme is consistent with national or sub-national sustainable development strategies, including, where appropriate, national adaptation

plan (NAP), national or sub-national development plans, poverty reduction strategies, national communications, or national adaptation programs of action, or other relevant instruments, where they exist.

This project is strategically aligned with the Government of Saint Lucia's ~~the key priorities and strategic~~ overarching framework for sustainable development and climate resilience, integrating multiple national and sectoral strategies to ensure a holistic approach. ~~framework of the Government of Saint Lucia (GoSL), which has been steadfast in developing policies aimed at fostering sustainable economic development while enhancing climate resilience.~~ At a national level, the project reinforces the strategic directives outline in the ~~T~~he **Climate Action Policy (CAP), 2015** and the **Climate Change Act**[26], which establish the foundations for climate adaptation. It directly contributes to the **National Adaptation Plan (NAP) 2017**, a 10-year framework that integrates climate change considerations across all relevant policies and development planning. By upgrading water infrastructure (Component 1), optimizing water distribution (Component 2), and strengthening institutional capacity (Component 3), the project ensures continuous and reliable water services during extreme weather events, thereby reducing climate-induced risks.

~~1. outlines three essential processes for successful climate adaptation: Adaptation Facilitation, Adaptation Financing, and Adaptation Implementation. Since the inception of this policy, the GoSL has laid a robust foundation for climate action, embedding climate adaptation strategies into various national frameworks. Additionally, the recently enacted Climate Change Act[27] solidifies the parameter for the previously mentioned policies, like the NAP, NDC, and CAP.~~

~~2. The development of the National Adaptation Plan (NAP) has further strengthened Saint Lucia's climate adaptation efforts. The NAP process, initiated in 2017, has been instrumental in integrating climate change adaptation considerations into all relevant policies, programs, and development planning. This integrated and coordinated approach ensures that critical climate change-related risks and development priorities are addressed comprehensively, utilizing both existing and future synergies.~~

~~Saint Lucia's NAP is defined as a 10-year process, consisting of key cross-sectoral and sectoral adaptation activities outlined in the NAP document. These activities are complemented by Sectoral Adaptation Strategies and Action Plans (SASAPs), which specify adaptation objectives, priority measures, proposed activities, and project concept notes for implementation. The Sectoral Adaptation Strategy and Action Plan for the Water Sector (Water SASAP) 2018-2028 is the first of these SASAPs and has been designed as a ten-year framework to reduce water-related risks induced by climate change and variability. It also aims to build the capacities of relevant stakeholders to ensure the sustainable management of water resources and services under current and future climatic conditions.~~Within the water sector, the project is fully consistent with the **Sectoral Adaptation Strategy and Action Plan for the Water Sector (Water SASAP) 2018-2028.** The project supports key outcomes of the Water SASAP as follows:

Outcome 1: Enhanced Enabling Environment and Improved Behaviours for Water-Related Climate Adaptation Actions: Through targeted public awareness campaigns and community engagement (Component 4), the project raises awareness and promotes sustainable water management practices among all community members, with a particular focus on vulnerable groups such as female-headed households.

Outcome 2: Increased Water Access, Use, and Quality: Investments in upgrading the Micoud water treatment facility, installing storage tanks, and retrofitting with energy-efficient technologies (Components 1 and 2) directly address water scarcity and improve water quality and service reliability, ensuring that essential services are maintained even during droughts and extreme weather events.

Outcome 3: Improved Water Efficiency and Conservation: The project's emphasis on modernizing infrastructure, enhancing monitoring systems, and promoting water conservation practices reduces non-revenue water (NRW) and overall operational costs, contributing to a more sustainable and resilient water supply system.

~~This project directly contributes to three of the four major outcomes outlined in the Water SASAP:~~

~~***Outcome 1**: Enhanced Enabling Environment and Improved Behaviors for Water-Related Climate*~~

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[26] https://npc.govt.lc/assets/files/laws/acts/2024/Act%20No3%20of%202024%20Climate%20Change%20Act.pdf

~~[27][27] https://npc.govt.lc/assets/files/laws/acts/2024/Act%20No3%20of%202024%20Climate%20Change%20Act.pdf~~

~~*Adaptation Actions*.~~

~~One of the strategic objectives under this outcome is to increase public awareness of integrated water resource management. The project aligns with this objective by promoting education and awareness on water resource management practices.~~

~~***Outcome 2:*** *Increased Water Access, Use, and Quality*.~~

~~The project addresses critical issues related to water scarcity, water quality, service efficiency post-disruption by natural hazards, and sustainable water management for the Micoud water treatment facility. By enhancing these aspects, the project supports the strategic goals of Outcome 2.~~

~~***Outcome 3****: Improved Water Efficiency and Conservation.*~~

~~Under Strategy 2 of this outcome, which focuses on improving water infrastructure to build resilience, the project's activities—such as upgrading the Micoud treatment facility, modernizing equipment, and enhancing monitoring systems—are directly aligned with and contribute to the achievement of this strategic goal.~~

Beyond the water sector, the project aligns with broader national strategies:

Saint Lucia National Development Plan (e.g., Vision 2025 or National Development Plan 2018-2023): By supporting infrastructure development, economic growth, and poverty reduction, the project contributes to the nation's long-term development goals.

- ***Agriculture Sector Adaptation Strategy*:** Given Micoud's status as a principal agricultural district, ensuring a reliable water supply is critical for sustaining crop production, enhancing food security, and improving the livelihoods of farmers and those in the agricultural supply chain.
- ***National Health Plan:*** Improved water quality and consistent access reduce waterborne diseases, lowering healthcare costs and promoting public health.
- ***National Disaster Risk Management Plan:*** By reinforcing water infrastructure resilience, the project enhances preparedness and reduces vulnerability to natural disasters and extreme weather events.
- ***National Communications Strategy on Climate Change:*** The tailored public awareness and education initiatives support broader communication efforts, ensuring that sustainable water management practices are disseminated widely and adopted by diverse segments of society.

In summary, the project not only supports the specific objectives of the Water SASAP and NAP but also reinforces the broader climate resilience, sustainable development, and disaster preparedness goals of Saint Lucia. This integrated approach ensures that investments in water infrastructure yield multifaceted benefits—improving economic productivity, enhancing public health, and preserving environmental sustainability—while fostering social equity across all communities. Detailed case studies from other Small Island Developing States (SIDs) and comprehensive funding mechanism assessments will be provided in the full funding proposal to further substantiate the project's potential for sustained impact and long-term resilience~~Overarchingly, the project not only supports the objectives of the Water SASAP but also reinforces the broader climate resilience and sustainable development goals of Saint Lucia.~~

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~~D.~~E. Describe how the project/programme meets relevant national technical standards, where applicable, such as standards for environmental assessment, building codes, etc., and complies with the Environmental and Social Policy of the Adaptation Fund

The Re-Water St. Lucia Project is building resilience in the waste services sector Therefore, environmental, social and gender safeguards are key to protecting the physical and social environment. The safeguards will ensure that proposed activities do not adversely impact on people and communities. Therefore, measures will be implemented to avoid and mitigate and anticipated risk, reduce, minimize, mitigate or offset impacts that may arise due to the implementation of project activities. It includes adequate protection of vulnerable and marginalized people from harm, equitable and safe provision of the water services, adequately informing the population that are likely to be affected, protection of biodiversity from degradation

and a mechanism in place to ensure that grievances or complaints can be reported and addressed in a timely manner and without the risk of victimization of the grievant. As such, overarching legislation and regulation that will govern the development and implementation of the project are listed below:

Table 4 National Technical Standards and Project Alignment

National Technical Standards	Description and Project Alignments
Water and Sewage Act 2006	The Water and Sewage Act empowers the Water and Sewerage Company Inc. (WASCO) and other relevant authorities for the provision of water supplies and the conservation, augmentation, distribution and proper use of water resources including preservation and protection and gathering grounds; sewage and the treatment and disposal of sewage and other effluents.~~o regulate the use and management of water resources in Saint Lucia.~~ This project, which involves the modernization and upgrade of water treatment and supply systems in Micoud, directly supports the Act's mandate by improving the infrastructure and operational efficiency of water services, ensuring that they meet regulatory standards and are resilient to climate impacts
St. Lucia Bureau of Standards (Agency)~~(Agency)~~	The Saint Lucia Bureau of Standards (SLBS) plays a critical role in ensuring quality assurance, standardization, and conformity assessment across various sectors, including water and infrastructure projects. This aligns with the project's goal of modernizing and upgrading the Micoud water treatment and supply systems to meet international and national quality standards. By adhering to SLBS standards, the project ensures that the infrastructure improvements enhance operational efficiency and reliability, thereby supporting sustainable water management practices.
Saint Lucia National Environmental Policy and National Environmental Management Strategy 2004[28]	The goal of national environmental policy is to ensure that development is environmentally sustainable, while optimizing the contribution of the environment to the economic, social, and cultural dimensions of development. The project's focus on modernizing and upgrading the Micoud water treatment and supply systems directly contributes to sustainable water management by improving the efficiency and reliability of water services, ensuring that resources are used sustainably and are resilient to climate impact. The project's activities, such as installing water storage tank and retrofitting infrastructure with energy-efficient technologies, contribute to this objective by reducing the vulnerability of water resources to climate variability and enhancing the adaptive capacity of the water sector. By enhancing the resilience of the Micoud water treatment facility, the project aligns with the NEP's goal of fostering climate resilience across critical environmental sectors.
Public Health (Sewage and Drainage) Act 1953	The Act holds WASCO responsible for the ~~mandates the~~ provision of safe and clean drinking water as a fundamental public health requirement. By enhancing the reliability and safety of the water supply, the project directly contributes to the public health objective of providing safe drinking water to the residents of Micoud. The Act also emphasizes the importance of adequate sanitation and hygiene in preventing the spread of waterborne diseases and protecting public health. The project's focus on improving water infrastructure, including the installation of water storage tanks in strategic locations, helps ensure that communities have consistent access to water for sanitation and hygiene purposes. This is particularly critical during droughts or infrastructure disruptions, where water scarcity can exacerbate public health risks
Physical Planning and	. The Act requires that all significant development projects obtain planning

[28] All other strategies are hinged on this policy document

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Development Act Rev 2005	permission from the relevant authorities, ensuring that projects are assessed for their environmental, social, and economic impacts. The project aligns with this by seeking the necessary planning permissions and conducting environmental impact assessments (EIAs) as required by the Act. This ensures that the project complies with local regulations and mitigates any potential negative impacts on the environment and communities. The Act recognizes the importance of developing and maintaining infrastructure that supports public utilities, such as water supply and sanitation, in a manner that is consistent with national development plans. The project's activities, which include upgrading water treatment facilities, installing energy-efficient technologies, and improving water storage capacity, align with the Act's provisions for infrastructure development.
The Saint Lucia Climate and Adaption Policy 20152~~2015~~	The policy emphasizes the importance of adapting key sectors, such as water resources, to the impacts of climate change. One of the three key processes outlined in the policy is Adaptation Implementation, which involves taking concrete actions to mitigate the adverse effects of climate change. The project Policy by directly addressing the key areas of climate resilience in water resource management, implementing adaptation measures, integrating climate risks into development planning, raising public awareness, building institutional capacity, aligning with the NAP process, and facilitating adaptation financing. Through these actions, the project supports the policy's overarching goal of building a resilient and adaptive society in Saint Lucia.

~~E.~~F. Describe if there is duplication of project/programme with other funding sources, if any.

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The potential for duplication of this project with other funding sources is minimal due to its specific focus on enhancing water infrastructure resilience in Micoud. Rather than replicating existing efforts, this project is designed to complement and build upon a range of completed and ongoing initiatives, thereby maximizing overall impact and contributing to Saint Lucia's broader climate resilience objectives.

In assessing potential duplication and identifying synergies, we have considered the full landscape of climate adaptation and development initiatives in Saint Lucia. The project's targeted focus—modernizing the Micoud water treatment and supply systems with an emphasis on climate resilience, energy efficiency, and community engagement—ensures minimal overlap while creating strong complementarities. In particular, the project builds on lessons learned and best practices from several related projects:

Table 5~~6~~ Complimentary Projects Snapshot

Project	Status	Fund	Key lessons
Dennery North Water Supply Redevelopment Project 2016	Under Implementation	Caribbean Development Bank-	Demonstrated successful retrofitting of aging infrastructure and integration of energy-efficient technologies to reduce non-revenue water (NRW) losses
John Compton Dam Rehabilitation (2015)	Under Implementation	Caribbean Development Bank	Enhanced water supply reliability through targeted infrastructural upgrades and improved maintenance practices
Vieux Fort Water Supply Redevelopment Project (2020)	Under Implementation,	Caribbean Development Bank	Established the effectiveness of constructing new storage facilities and upgrading distribution networks to mitigate water scarcity during droughts and extreme weather events
Supporting Water Conservation and Use of Rainwater Harvesting in Saint Lucia (2016)	Completed	WRMA through World Bank Disaster Vulnerability Reduction Project	Highlighted the benefits of decentralized water harvesting and community-based approaches in providing supplementary water sources during periods of scarcity.

		(DVRP)	
Water for Resilience (W4R) Project- UNDP 2023 -2027	Under implementation	United Nations Development Programme (UNDP)- Funded by Global Affairs Canada)	The focus of the project is on improving water quality and access, with climate change adaptation components, across Grenada, Saint Lucia, and Saint Vincent and the Grenadines. Emphasized regional knowledge sharing and the benefits of decentralized, nature-friendly water supply solutions.
Water Supply and Wastewater Improvement Project Investment 2024	Under Implementation	Caribbean Development Bank (CDB)	Enhancing the reliability, resilience, and sustainability of Saint Lucia's water and sewerage services through technical assistance and development of a climate-resilient water supply and wastewater masterplan. Demonstrated the economic and operational benefits of upgrading water infrastructure to reduce maintenance costs and improve service reliability.
GCF Mainstreaming Climate Resilience into Water Sector Planning, Development and Operations in Saint Lucia	Under review by GCF – Submitted in 2022~~Under implementation (24 months duration)~~	Caribbean Development Bank (CDB)	The GCF project, Mainstreaming Climate Resilience into Water Sector Planning, Development and Operations in Saint Lucia, currently under review by the Green Climate Fund, adopts a broader national scope with five components. It emphasizes climate-resilient governance, integrated water resource management, and institutional strengthening. In contrast, the Adaptation Fund (AF) project takes a more localized and infrastructure-focused approach, targeting tangible climate adaptation interventions within the Micoud community. While both projects share common goals strengthening water sector resilience and institutional capacity, they are designed to be complementary. The GCF project lays the groundwork for long-term strategic planning, while the AF project delivers localized, immediate adaptation solutions that can inform broader national efforts. Despite the GCF project still being under review, the early approval and implementation of the AF project would not hinder—but rather enhance—overall climate adaptation outcomes. It would provide proof of concept and generate critical lessons that could feed into the GCF initiative. Moreover, it offers a timely opportunity to pilot climate-resilient infrastructure and community engagement models in Micoud, which can be scaled up through the GCF-funded activities once approved. This sequencing fosters strategic alignment, reduces duplication, and increases the likelihood of sustained impact across the water sector. ~~The GCF project has a broader scope with five components, including climate governance and water resources~~

			~~management, while the AF project focuses on three components, primarily infrastructure, capacity building, and project management. While both projects emphasize infrastructure upgrades and capacity building, the GCF project includes a stronger focus on governance, policy strengthening, and integrated water resources management. These projects are complementary, with the GCF project targeting a more comprehensive integration of climate resilience into water sector planning and development, while the AF project focuses more on specific infrastructure and community engagement components in the Micoud that reduces vulnerabilities to drought, heavy rainfall causing flood and promotes energy efficiency.~~

The project is also consistent with broader national strategies, including the Saint Lucia National Water Policy, the National Adaptation Plan (NAP) 2017, and the Sectoral Adaptation Strategy and Action Plan for the Water Sector (Water SASAP) 2018-2028. These frameworks emphasize integrated water resource management, disaster risk reduction, and sustainable development. While these policies set broader water management goals, our project provides specific, actionable steps—such as infrastructure upgrades, energy efficiency improvements, and community engagement—that directly address climate-induced risks and support sustainable water management. The localized focus in Micoud complements these broader strategies by targeting specific community needs, ensuring that interventions are highly relevant and effective.

Through consultations with key stakeholders, including the DSD, the WRMA, and other sectoral actors, the project design has been carefully informed to avoid duplication with other funding sources. Where relevant, the project intentionally builds upon existing interventions, ensuring strong synergies with complementary initiatives and maximizing coherence and impact within the water sector. Some of these considerations and recommendations from these consultations can be seen in table under **section H, Table 9.**

Conclusively while the project targets a specific geographical intervention in Micoud, its design is carefully structured to complement and leverage a range of completed and ongoing projects funded by various sources—including initiatives by CDB, GEF, CIF, MDBs, and sister climate funds. By fostering collaboration and ensuring a coordinated approach across government agencies, local communities, and partner organizations, the project offers a unique value proposition that enhances overall climate resilience and sustainable water resource management in Saint Lucia and the wider Eastern Caribbean region. The risk of duplication is low, if coordination mechanisms remain robust and continuous stakeholder engagement is maintained throughout the project's implementation.

~~The potential for duplication of this project with others funded by different sources appears to be minimal, given its specific focus on water infrastructure resilience in Micoud. Instead, the project presents opportunities for complementarity and synergy, particularly with existing or pipeline initiatives aimed at climate adaptation, disaster risk reduction, and sustainable development in Saint Lucia. By coordinating with ongoing efforts and aligning with national strategies, this project can enhance its impact and contribute meaningfully to the country's climate resilience objectives~~

~~In assessing the potential for duplication with other funding sources and identifying complementarities or synergies with existing or pipeline projects in Saint Lucia, it was essential to consider the broader landscape of climate adaptation and development initiatives in the country.~~

~~This project's focus on the Micoud water treatment and supply systems, with a particular emphasis on climate resilience, energy efficiency, and community engagement, while not unique it scope, provides the opportunity for minimal overlaps with existing projects. There can be found strong synergies between this project and the Green Climate Fund Readiness project dubbed ***"Mainstreaming Climate Resilience into Water Sector Planning, Development and Operations in Saint Lucia***" that aims to strengthen Saint Lucia's capacity to access and manage climate finance. It includes activities related to developing climate-resilient infrastructure and~~

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~~enhancing institutional frameworks for climate action. This concept project therefore builds on the broader goals of building institutional capacity and ensuring that climate finance is effectively utilized in Saint Lucia.~~

~~Notably, the CDB has undertaken projects in recent past which focuses on improving water supply infrastructure across Saint Lucia, including the replacement and upgrade of aging pipelines, and enhancing water treatment facilities. The focus on modernizing and upgrading the Micoud water treatment plant complements the broader infrastructure improvements being undertaken through the Water Sector Rehabilitation Project. Some of these projects are as follows.~~

~~1. Dennery North Water Supply Redevelopment Project~~
~~2. John Compton Dam Rehabilitation~~
~~3. Vieux Fort Water Supply Redevelopment project~~

~~The project aligns with the Saint Lucia, National Water Policy, NAP, and the SASAP for Water. While these policies and plans set broader goals for water management, the project provides specific, actionable steps to adapt to climate related risk. This includes measures to reduce vulnerabilities to drought and floods, which are critical in a changing climate. Other projects operating within these frameworks may focus on different aspects or regions, creating opportunities for complementarity rather than duplication.~~

~~The majority of the project aims to enhance water resources management in the face of climate change focusing on resilience and sustainability. They involve capacity building, supporting policy development and improvement of infrastructure. Regional projects such as *Enhancing climate resilience in CARIFORUM Countries and* Strengthening *Resilient Water Resource Management in the Eastern Caribbean* share strong complementarities particularly in terms of shared objectives, capacity building, and infrastructure resilience. The risk of duplication, although low, if the projects are not carefully coordinated. By fostering collaboration and ensuring that activities are complementary, both projects can contribute to a more resilient and sustainable water management system in Saint Lucia and the wider Eastern Caribbean region. As result of the specific geographical project intervention, the likelihood is low allowing for target interventions that address specific community need in Micoud. The localized focus complements broader national scope. The proposed project in Micoud would complement several ongoing and past projects in Saint Lucia by building on existing efforts to enhance climate resilience, particularly in the water sector. Through its focus on infrastructure upgrades, renewable energy integration, and water quality improvement, the project would not only align with but also enhance the impact of broader national and regional initiatives aimed at adapting to climate change and reducing disaster risks.~~

~~F.~~G. If applicable, describe the learning and knowledge management component to capture and disseminate lessons learned.

The project includes a robust learning and knowledge management component—detailed in Component 5—that is designed to systematically capture, analyze, and disseminate lessons learned and best practices in water management, with a particular focus on gender-specific challenges and successes. Drawing from the preliminary gender assessment for the Re-Water St. Lucia project, which indicates that Micoud's population of 16,284 faces significant vulnerabilities—with indigence rates at 27.4%, non-indigent poverty at 15.9%, and notably higher female unemployment (32% vs. 24% for males)—the project will ensure that these gender dimensions are fully integrated into its knowledge management ~~The learning and knowledge management component of this project is designed to ensure that valuable lessons and best practices are systematically captured, analyzed, and disseminated. This process will not only enhance the effectiveness of the current project but also inform future initiatives, promoting continuous improvement in climate resilience and water management strategies. Some~~strategy. Some of the key elements are as follows:

1. **Documentation of Best Practices and Lessons Learned:** Detailed technical reports, case studies, and progress evaluations will capture the effectiveness of infrastructure upgrades, energy efficiency measures, and community engagement activities. Special emphasis will be placed on documenting gender-specific challenges and successes—such as the disproportionate burden of water collection on women and the impact of water shortages on female-headed households—so that these insights can inform future adaptation strategies.~~Throughout the project's implementation, detailed records will be maintained to capture successful strategies, challenges encountered, and the solutions employed. This will include technical reports, case studies, and regular progress evaluations. Specific focus will be placed on~~

documenting the effectiveness of the water treatment system upgrades, energy efficiency improvements, and community engagement activities.

1. **Knowledge Sharing Workshops and community exchange programs:** Periodic workshops will be organized to bring together stakeholders, including community members, WASCO officials, local government representatives, and technical experts. These workshops will serve as a platform for sharing experiences, discussing challenges, and brainstorming solutions. These sessions will include targeted discussions on gender-related issues, ensuring that the voices of vulnerable groups, particularly women, are heard and that successful gender-responsive interventions are disseminated for broader application. They will also facilitate the exchange of knowledge between communities, ensuring that successful strategies are replicated elsewhere on the island.

2.

2. Development of Training Materials and a centralized Digital : Based on the project's findings, trainingRepository: Training materials, such as (manuals, guides, and video tutorials), will be developed encapsulate the project's findings, including gender-specific case studies. These materials will focus on the maintenance and operation of upgraded water systems, the integration of renewable energy technologies, and effective water conservation practices. The training materials will be tailored for different audiences, including WASCO staff, local government officials, and community members.

   Creation of a Centralized Knowledge Repository: A centralized digital repository will be established and regularly updated with all project documents, to store all project-related documents, reports, data sets, and multimedia content. This repository will include gender-disaggregated data, documenting both challenges and successes in water access and climate resilience to guide future projects. be accessible to all stakeholders and will serve as a reference point for future projects. It will include searchable databases of lessons learned, case studies, and technical guidelines, making it easier to retrieve and apply knowledge.

3. **Community-Based Knowledge Exchange Programs: A community-based knowledge exchange program will be launched to facilitate the transfer of knowledge and skills between local residents. This will include peer-to-peer learning sessions, where community members who have successfully adopted water conservation measures or renewable energy solutions share their experiences with others. This grassroots approach will help ensure that knowledge is effectively transferred and retained within the community.**

2.3. **Monitoring and Evaluation (M&E) Framework**: An robust M&E framework will track the effectiveness of the learning and knowledge management activities usingbe developed to continuously assess the impact of the project's knowledge management activities. This framework will include key performance indicators (KPIs) related to knowledge dissemination, such as the number of workshops held, materials distributed, and participants engaged. Gender-disaggregated data will be integral to this framework, ensuring that the impact on women and other vulnerable groups is continuously monitored and that lessons are used to refine future interventions. Regular feedback loops will be established to adjust the knowledge management strategy based on the M&E findings, ensuring that it remains relevant and effective.

3.4. **Dissemination Through Online Platforms and social media:** The project will leverage online platforms, including a dedicated project website and social media channels, and central digital repository to disseminate information widely. Regular updates, success stories, and lessons learned will be shared with a broader audience, both within Saint Lucia and internationally. Importantly, the digital platforms will ensure that both technical and gender responsive insights are captured and made accessible for adaptation by similar projects in other regions. This will help raise awareness of the project's achievements and encourage the adoption of similar practices in other regions.

4. **Partnerships with Educational Institutions:** Collaborations will be established with local educational institutions to integrate the project's findings into academic curricula. This will include guest lectures, workshops, and the development of case studies for use in environmental science, engineering, and climate change courses. Special attention will be given to integrating gender considerations, highlighting how water management challenges and resilience strategies differ across genders. By engagingengaging in the academic community, the project will help foster a new generation of professionals equipped with the skills and awareness to promote sustainable and gender-responsive water management practices.

4.5.

B. **Describe the consultative process, including the list of stakeholders consulted, undertaken during**

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project preparation, with particular reference to vulnerable groups, including gender considerations, in compliance with the Environmental and Social Policy and Gender Policy of the Adaptation Fund.

~~G.~~H.

~~The development of climate-resilient water sector projects in Saint Lucia has been an ongoing effort since 2015, involving extensive consultations with key stakeholders at both the national and regional levels. This consultative process has been inclusive, ensuring the involvement of various stakeholders. The included~~

~~National Engagement~~	~~Regional~~
~~Water Resource Management Agency (WRMA)~~	~~- Caribbean Development Bank (CDB)~~
~~- National Utilities Regulatory Commission (NURC)~~	~~- Caribbean Water and Sewerage Association (CAWASA)~~
~~- National Integrated Planning and Programme Unit~~	~~- Caribbean Community Climate Change Centre (CCCCC)~~
~~- Department of Sustainable Development (DSD)~~	~~- Organization of Eastern Caribbean States (OECS)~~
~~- Saint Lucia Development Bank (SLDB~~	~~- Caribbean Public Health Agency (CARPHA)~~
~~Water Resource Management Agency (WRMA)~~	~~- GCF GIZ G-Crews Project~~
~~- National Utilities Regulatory Commission (NURC)~~	~~- Climate Finance Access Network (CFAN)~~

~~These National consultations were essential for gathering input and building consensus on the strategic direction and priorities for water sector resilience. They also facilitated the development of key documents such as:~~

- ~~*WASCO Climate Risk Vulnerability Assessment (CRVA) 2018, updated in 2022*~~
- ~~*WASCO Adaptation Plan of Action (APA) 2018, updated in 2022*~~
- ~~*Saint Lucia Sectoral Adaptation Strategy and Action Plan for the Water Sector (Water SASAP) 2018-2028*~~
- ~~*Regional Strategic Action Plan (RSAP) 2018*~~

~~The regional engagements wit allowed for broader regional alignment and collaboration on climate resilience initiatives, ensuring that the Saint Lucia project was informed by and aligned with regional strategies and actions.~~

~~The Caribbean Community Climate Change Centre (CCCCC), in collaboration with WASCO, led the stakeholder engagement process, in the development of the project concept. This involved:~~

- ~~*Consultations with the WRMA and the (UNOPS) potential executing entity*~~
- ~~*Engagement with national counterparts to inform project development and solicit input for proposals*~~
- ~~*Site visits to WASCO's facilities to understand recent works and assess general needs*~~

~~**January 2023** - A two-day engagement was held where CCCCC project development staff met with key personnel from WASCO and Saint Lucia's Green Climate Fund (GCF) National Designated Authority (NDA) to discuss the development of the water project and the island's GCF readiness finance needs.~~

~~**March 2024** - Given the time lapse between initial discussions and the ongoing project development, a recent stakeholder meeting was held to ensure the project's continued relevance and coherence with the country's needs and priorities. This included:~~

- ~~*Meetings with WASCO, WRMA, and the Department of Sustainable Development*~~
- ~~*A site visit to the Micoud community, where interactions with junior officers and treatment facility staff were conducted*~~

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~~As the project moves towards the full funding proposal stage, there will be further, more extensive consultations, particularly focused on gender considerations and the needs of the most vulnerable groups within the community. In alignment with the strong emphasis on gender mainstreaming, efforts were made to gather relevant data for gender analysis. This included consultations with the Central Statistics Office to obtain data specific to the Micoud community. This data will inform the development of gender-sensitive project activities, ensuring that the project adequately addresses the needs and priorities of both men and women, with particular attention to vulnerable groups.~~

The development of climate-resilient water sector projects in Saint Lucia has been an ongoing effort since 2015, involving extensive consultations with key stakeholders at national, regional, and community levels. These engagements have been essential in shaping policies, identifying climate vulnerabilities, and ensuring community awareness and participation in climate resilience efforts.

National Approach to Water Sector Resilience and Consultations

Saint Lucia has taken a structured, strategic approach to strengthening resilience in its water sector, starting with the **Sectoral Adaptation Strategy and Action Plan for the Water Sector (Water SASAP) 2018-2028** under the National Adaptation Plan (NAP). The Water SASAP outlines a long-term roadmap for reducing climate-related risks and integrating resilience measures. Since its adoption, the Government of Saint Lucia, through agencies such as the **Water Resource Management Agency (WRMA), WASCO, the Department of Sustainable Development (DSD), and the National Integrated Planning and Programme Unit**, has actively engaged with national and regional partners to advance these goals.

The **Saint Lucia Water Sector Adaptation Plan (2018-2028)** sets the foundation for managing climate risks in the sector, and consultations have focused on increasing awareness, ensuring community participation, and managing expectations regarding future water infrastructure improvements. Given the country's fiscal constraints, community engagements have been structured to focus on **climate vulnerabilities, potential adaptation strategies, and the importance of sustainable water management**, rather than making premature commitments to specific interventions without secured funding.

Overview of Stakeholder Consultations in Project Development

To develop this project concept, extensive consultations have been conducted with national and regional stakeholders, as well as community representatives. These discussions focused on **climate change impacts on water availability, the need for climate-resilient infrastructure, and potential adaptation solutions.**

Table 6 Stakeholder Consultations Snippet

Date	Stakeholder Group	Number of Participants (M/F)	Topics Discussed	Key Outcomes and Considerations for Project Design
January 26, 2023	WASCO, NDA Focal Point, CCCCC, CFAN	7 (5M/3F)	- Water sector vulnerabilities to climate change - Need for improved water governance and integrated management - WASCO priority adaptation Areas - Climate-resilient infrastructure development GCF Mainstreaming Climate Resilience into Water Sector Planning, Development and Operation in St. Lucia Proposed Project: Adaptation Fund Proposed Project	- Reinforced alignment with national water adaptation plans - Highlighted importance of integrating governance, capacity building, and infrastructure adaptation

January 27th, 2023	CCCCC, WASCO, CDB Consultant	7 (5M/3F)	The site visit involved visiting a number of WASCO sites to better understand their most recent works and needs. The sites visited were Grace, Bousejean, Dennery, and the John Compton Dam in Millet. These facilities have a daily capacity of 1.5, 1.1, 0.5, and 10 million gallons per day respectively	-Improved Understanding of WASCO's Existing Infrastructure and Capacity -Identification of Renewable Energy Opportunities -SCADA Integration Across Plants -Infrastructure Gaps and Investment Needs Identified -Enhanced Monitoring Needs Recognized -Operational Efficiency Insights -Reinforced Alignment with Project Objectives
March 3-June 2024	**Project Concept Bilateral Meetings Discussion with Key National Stakeholders** – WRMA, WASCO, DSD, Gender Affairs, CFAN, NDC Coordinator	13 (3M/10F)	- Project concept validation - Addressing complementarity with GCF Readiness Project - WASCO's Climate Resilience Strategy and SCADA assessment	- Agreement to ensure the project builds on GCF efforts without duplication - Consideration of SCADA assessment results for finalizing activities
March 18-21, 2024	**Scoping Mission and Site visit of Micoud Treatment Plant** – WASCO, CCCCC Micoud resident	9 (6M/3F)	- Community awareness on climate change risks - Current water infrastructure challenges - Proposed adaptation strategies	- Community expressed concerns over increasing water scarcity and service disruptions - Need for rainwater harvesting and emergency water points emphasized - Ensured community perspectives inform project design
February 2025 (Planned)	**WASCO-led Community Engagement Meetings** – Virtual and in-person sessions with community	Disaggregated data to be collected)	- Gender responsive Climate resilience strategies in water management - WASCO's efforts to improve water security - Community role in conservation	- Strengthened awareness of climate risks and adaptation strategies - Managed community expectations

	leaders across Saint Lucia			regarding potential future projects

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Key Findings from Stakeholder Consultations

The stakeholder consultations have been **instrumental in ensuring that the project design is informed by local realities and needs** while aligning with national and regional climate resilience efforts. The following key insights emerged:

Table 78 Stakeholder Consultation Key Findings

Key Findings	
Community-Level Findings (Micoud & Broader Engagements)	• **Water Scarcity as a Growing Concern:** Community members in Micoud highlighted **increased frequency of droughts, service interruptions, and reliance on springs and alternative water sources** (11.6% of households use springs/rivers; 3.2% use other sources). • **Prioritization of Rainwater Harvesting and Emergency Water Supply:** Residents emphasized the need for **household-based water storage solutions and strategically placed emergency water supply points**, particularly in **vulnerable areas with female-headed households and high poverty rates.** • **Desire for Capacity Building:** Community members expressed **strong interest in public awareness campaigns, technical training on water conservation, and improved community-level governance of water resources.**
Technical & Institutional-Level Findings	**Complementarity with the GCF Readiness Project:** • The project aligns with **GCF's institutional capacity-building efforts** while focusing on **direct climate adaptation actions** (e.g., infrastructure upgrades, emergency response planning). • **Overlap risk mitigation:** Activities related to risk management frameworks and governance (e.g., Activity 2.1.1 and 2.1.2) were reviewed to ensure complementarity rather than duplication. **Integration of SCADA & Smart Water Management:** • WASCO is currently working with the **Caribbean Development Bank (CDB) on a SCADA assessment** to improve real-time water system monitoring. The project will incorporate findings from this study to enhance water management efficiency. **Urgency of Certain Government Priorities:** • Stakeholders advised that **Activity 1.2.1 (originally planned) may need to be removed** due to government prioritization of immediate drought response, which does not align with the AF's funding timeline.
Gender & Social Inclusion Considerations	**High Indigence & Gendered Water Insecurity in Micoud:** • Micoud has **one of the highest indigence rates (27.4%) and non-indigent poverty rates (15.9%)** in Saint Lucia. • Unemployment disparities exist, with **32% of women unemployed compared to 24% of men**, exacerbating economic vulnerabilities. **Water Collection Burden on Women:** • Women and female-headed households bear **a disproportionate burden of water collection and management**, emphasizing the need for **accessible water storage and emergency water points.** **Ensuring Gender-Responsive Adaptation Measures:**

	• Stakeholders underscored the need for **gender-sensitive training programs, community outreach, and equitable access to water resilience resources.**

Based on the feedback from consultations and to integrate these in project design the following elements were incorporated:

Table 98 Feedback Incorporated in Project Design

Strengthened Gender-Responsive Approaches:	• The project will **prioritize access to emergency water services for female-headed households, caregivers, and vulnerable groups** to reduce the burden of water insecurity. • Gender-specific indicators will be integrated into the **monitoring and evaluation framework** to track women's participation and benefits.
Incorporation of Community Recommendations:	• The project includes **community-led rainwater harvesting initiatives** based on feedback from Micoud residents. • **Public awareness campaigns will be tailored to community concerns**, with a focus on **behavioural change, water conservation, and climate resilience strategies.**
Alignment with Institutional Priorities & Existing Projects:	• The **SCADA assessment findings will inform the project's smart water management interventions.** • The **removal of Activity 1.2.1** ensures that the project remains relevant without conflicting with urgent government-led drought mitigation efforts.

The stakeholder engagement process reflects Saint Lucia's commitment to inclusive, participatory water governance and climate resilience planning. While detailed community consultations on specific project activities will take place at the full funding proposal stage, the current process has ensured that national strategies, technical expertise, and community needs shape the project's design. The project remains aligned with national adaptation goals, integrates lessons from past initiatives, and reflects community-driven priorities, ensuring that climate adaptation investments are both effective and equitable.

I. Provide justification for funding requested, focusing on the full cost of adaptation reasoning.

Justification for Adaptation Fund (AF) Support

The requested AF financing is essential to realizing the project's adaptation objectives, as it directly addresses critical climate vulnerabilities in Saint Lucia's water sector without reliance on additional funding sources. The project is designed to enhance the climate resilience of the Micoud water system by implementing targeted interventions that would not be possible through conventional financing mechanisms or existing national budgets. The justification is detailed below by outlining the baseline scenario, project additionality, and alternative funding options for each component.

Table 9 Baseline Scenario, AF Additionality, and Project Outcomes

Component	Baseline Scenario	AF Additionality	Outcome with AF Support
Component 1: Climate-Resilient Water Infrastructure Upgrades	- Micoud's aging water infrastructure is highly **vulnerable to climate impacts**, including droughts and flooding.	**- AF financing enables the replacement of outdated infrastructure** with **climate-resilient materials**, ensuring long-	**- Upgraded water supply infrastructure is flood- and drought-resilient.** **- Enhanced water**

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	- Increased sedimentation and turbidity during extreme rainfall events disrupt water supply. - WASCO struggles with **non-revenue water (NRW)** losses (42%) due to leakages, deteriorated pipes, and inefficient systems.	term service reliability. - **Integration of SCADA systems** for real-time monitoring reduces system inefficiencies and NRW losses. - **Solar-powered backup water systems** improve climate resilience by ensuring continued operation during extreme weather events.	**storage and emergency supply points** reduce service disruptions. - **Reduction in NRW improves efficiency, reducing financial and environmental costs.**
Component 2: Non-Revenue Water Reduction & Smart Water Management	- 42% of treated water is lost due to **leakages, metering inefficiencies, and illegal connections**, increasing WASCO's operational costs. - Lack of **real-time monitoring systems** lead to delayed response times in addressing water system failures.	- **Installation of SCADA technology** for real-time leak detection and automated system controls. - **Upgraded metering and GIS-based mapping** reduce NRW and improve service efficiency. - **Smart pressure management systems** optimize water distribution.	- **Reduced NRW enhances water availability for consumers and lowers operational costs.** - **Automated leak detection & response reduce climate-induced service disruptions.** - **Climate-smart technology ensures long-term sustainability of the water system.**
Component 3: Climate-Responsive Risk Management & Capacity Building	- WASCO lacks **climate risk management frameworks** to address climate variability and extreme events. - Limited **staff training** on climate resilience, disaster risk reduction, and gender-responsive water management.	- **AF funding supports climate risk assessments, policy formulation, and staff capacity building.** - **Development of climate-resilient operational protocols,** reducing vulnerabilities. - **Training programs ensure that WASCO personnel and key institutions can effectively manage climate risks.**	- **Institutional capacity strengthened to integrate climate risk management.** - **Improved disaster preparedness & early warning systems reduce water supply disruptions.** - **Gender-responsive water governance improves equitable access to services.**
Component 4: Public Awareness, Education, & Community Resilience	- Low levels of **public awareness** regarding climate-resilient water management. - Vulnerable communities, including **female-headed households, lack knowledge and access** to water conservation solutions.	- **Targeted climate education campaigns** to promote water conservation and sustainable practices. - **Gender-responsive community training on water security,** emphasizing women's role in decision-making. - **Partnerships with schools and local**	- **Greater public awareness leads to more sustainable water use practices.** - **Enhanced community engagement in climate adaptation efforts.** - **Empowered women and marginalized groups to participate in water governance.**

		organizations to ensure long-term awareness.	
Component 5: Learning, Knowledge Management, & Institutional Strengthening	- Limited knowledge-sharing platforms on **climate-resilient water management.** - No centralized **digital or physical repository** for water sector adaptation best practices.	**- Creation of a national digital knowledge hub** on climate-resilient water practices. **- Documentation of lessons learned** and knowledge exchange between regional water utilities. **- Integration of gender-sensitive climate adaptation insights** into institutional policies.	**- Improved institutional knowledge-sharing supports long-term adaptation efforts.** **- Strengthened partnerships between national, regional, and global climate adaptation networks.**

Table 10~~11~~ Alternative Funding Analysis

Alternative Funding Source	**Challenges & Limitations**	**Why AF Financing is Essential**
National Budget Allocations	Government of Saint Lucia has **significant fiscal constraints, with debt levels at 91.5% of GDP (2021).** - Limited capacity to allocate additional funds toward **climate-proofing infrastructure.** - Priority is given to **short-term disaster response rather than long-term adaptation.**	- **AF financing provides critical upfront investment** for climate resilience measures that cannot be funded through government budgets. - Ensures that long-term resilience-building measures are prioritized rather than deferred due to fiscal constraints
Private Sector Investments	- Water sector investments in small island states have low profitability, making it difficult to attract private sector engagement. - Climate-related risks discourage private investment in adaptation-focused projects. - WASCO operates in a highly regulated, non-profit model, limiting commercial viability.	- AF financing de-risks the water sector by funding climate adaptation actions that encourage future private sector participation. - Enables WASCO to implement resilience-focused interventions without the pressure of generating short-term returns.
Development Partner Grants & Loans (e.g., GCF, CDB, WB, IDB)	- Existing development partner projects (e.g., **GCF Readiness Project, CDB-funded water rehabilitation**) focus on **governance and institutional strengthening** rather than infrastructure. - Climate-proofing **infrastructure components require concessional financing**, which is currently unavailable.	**- AF financing uniquely enables climate-resilient infrastructure upgrades** that complement broader institutional efforts. **- Avoids the accumulation of additional debt burdens** on the government, which is already highly indebted.

Community or Municipal-Level Funding	- Local governments and municipal bodies **lack dedicated climate finance mechanisms** to support adaptation investments. - Community-driven water security projects require **national-level coordination** to be effective.	- AF financing allows for community-based adaptation interventions, ensuring that vulnerable populations are not left behind. - Ensures a cohesive national approach to water sector resilience, rather than fragmented local initiatives.

The Unique Value of AF Financing

Adaptation Fund support is essential for this project because:

- It provides targeted, climate-resilient infrastructure financing that is not covered by national budgets or traditional development finance.
- It ensures equity by prioritizing vulnerable groups, including female-headed households and low-income communities, who are often left out of conventional investment models.
- It enables WASCO and other water sector stakeholders to integrate climate-smart technologies, such as SCADA systems, smart meters, and real-time monitoring—essential tools for long-term resilience.
- It complements and builds upon other climate finance initiatives, ensuring that governance, institutional capacity, and climate-resilient infrastructure improvements occur in tandem.

Without AF funding, Saint Lucia's water sector will remain highly vulnerable to climate-related disruptions, threatening water security, economic stability, and public health, particularly for marginalized communities. AF financing is, therefore, the most viable and impactful means of ensuring that Saint Lucia can adapt effectively to climate change while maintaining financial sustainability.

~~1. Saint Lucia's Nationally Determined Contributions (NDCs) and National Adaptation Plan (NAP) 2018-2028 outline critical adaptation measures across multiple sectors, including water. According to the NAP Financing Strategy, the total cost for implementing adaptation measures identified in the Water, Fisheries, and Agriculture SASAP is estimated at USD 35.4 million, with actual needs likely exceeding this baseline. The requested AF funding for this project represents a fraction of these adaptation needs, yet directly addresses urgent climate vulnerabilities in the water sector. This funding is pivotal for advancing Saint Lucia's adaptation goals as traditional financing mechanisms cannot adequately support these efforts.~~

~~2. The water sector in Saint Lucia faces acute challenges due to climate change, including prolonged droughts, extreme rainfall events, and increased turbidity, which compromise vulnerable water supply systems and jeopardize water security. The project's proposed actions, such as climate-resilient infrastructure upgrades in Micoud, align with WASCO's Adaptation Plan for Building Climate Resilience, which estimates sectoral needs at USD 500 million. These actions specifically address climate impacts by incorporating renewable energy systems, flood-resistant infrastructure, and advanced monitoring technologies, all critical to ensuring long-term resilience.~~

~~3. Adaptation Fund financing uniquely enables the implementation of equitable adaptation measures targeted toward the most vulnerable groups, including low-income households, female-headed households, and marginalized communities. Activities such as community-based rainwater harvesting systems, emergency water points, and water purification systems ensure that vulnerable populations can adapt to climate variability. These interventions are often underfunded by conventional sources, making AF financing essential for protecting lives and livelihoods in Micoud.~~

~~4. Over the past eight years, the Government of Saint Lucia has invested over USD~~

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~~75 million in loans, grants, and counterpart funding to address developmental water needs and rising demand. However, these investments do not account for the additional costs of climate-proofing infrastructure to adapt to increasing climate risks. Fiscal constraints, exacerbated by rising debt levels (91.5% of GDP in 2021) and the economic fallout from the COVID-19 pandemic, limit the government's ability to allocate resources for climate adaptation. The concessionary nature of AF financing is critical to bridging this gap, enabling Saint Lucia to implement adaptation measures that would otherwise remain out of reach.~~

~~5. Given the small market size and limited profitability of water sector investments, attracting private sector financing has been challenging. Exogenous shocks from extreme weather events and the economic downturn caused by the pandemic have further constrained private sector participation. AF financing offers a pathway to implement climate adaptation actions while addressing systemic barriers to private sector involvement, paving the way for more resilient water infrastructure without over-relying on domestic or private resources.~~

~~6. The project aligns with Saint Lucia's Climate Financing Strategy and Private Sector Engagement Strategy, published in 2020, which highlights the island's reliance on external financing to meet NDC targets. As outlined in the NDC Finance Strategy (2021), Saint Lucia's ability to access international climate finance is critical, given the 39% decline in net Official Development Assistance (ODA) from 2015 to 2018. By accessing AF financing, this project directly supports the country's diversification of donor engagement and its efforts to utilize underfunded climate finance mechanisms to achieve adaptation goals.~~

~~7. The requested AF financing goes beyond developmental needs to address climate-specific challenges. It enables the integration of real-time monitoring systems, SCADA technologies, and energy-efficient systems, which reduce operational costs and mitigate the financial burden on vulnerable communities. These measures not only protect water access during extreme events but also build long-term resilience by minimizing disruptions and damages from climate-induced risks.~~

~~C.~~ Describe how the sustainability of the project/programme outcomes has been taken into account when designing the project/programme.

~~H.~~J.

The sustainability of the project's outcomes has been meticulously integrated into its design to ensure long-term impact, replicability, and scalability beyond the project's lifespan. Sustainability is addressed through economic, social, environmental, institutional, and financial dimensions, ensuring that Micoud's water supply system remains climate-resilient, operationally efficient, and accessible to all in the face of climate change.

1. Economic Sustainability

The project enhances economic resilience by ensuring efficient water supply operations, reduced water losses, and increased financial stability of the water sector.

Key Measures to Ensure Economic Sustainability:

- Reduction in Non-Revenue Water (NRW): The installation of SCADA systems, smart meters, and leak detection tools will significantly reduce NRW, improving WASCO's revenue generation capacity and ensuring that savings can be reinvested in future infrastructure maintenance.
- Cost Savings from Energy Efficiency & Renewable Energy Integration: Incorporating solar-powered systems and energy-efficient equipment will lower WASCO's operational costs, reducing dependence on fossil-fuel-powered electricity grids and enhancing cost-effectiveness.
- Strengthened Water Resilience to Support Economic Sectors: Agriculture and community-based

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tourism—key economic drivers for Micoud—will benefit from a reliable water supply, ensuring stable livelihoods and economic productivity.

- Leveraging Future Climate Finance & Investment: The project will provide a baseline for securing additional funding from development partners, private sector investments, and concessional climate finance (e.g., Green Climate Fund, Caribbean Development Bank, etc.), ensuring sustained upgrades to infrastructure.

2. Social Sustainability

The project promotes inclusive, equitable, and community-driven adaptation measures to ensure continued water access for all, particularly for vulnerable groups.

Key Measures to Ensure Social Sustainability:

- Gender & Social Inclusion in Water Governance: The project's gender-responsive approach ensures that female-headed households, low-income groups, and the elderly are prioritized in climate-resilient water management strategies.
- Community Awareness & Engagement: A long-term public education program will foster behavior change, encouraging water conservation, climate awareness, and sustainable resource management at the community level.
- Institutionalized Stakeholder Collaboration: Partnerships with CSOs, local councils, schools, and health institutions will ensure that water management remains a community-driven initiative, fostering long-term buy-in and responsibility among residents.
- Integration into Local Development Plans: The project aligns with Saint Lucia's NAP, Water SASAP, and National Water Policy, ensuring that its strategies are institutionalized within national planning frameworks, thereby securing long-term government support and funding.

3. Environmental Sustainability

The project directly contributes to safeguarding Saint Lucia's water resources and ecosystems against climate variability by implementing nature-based and resource-efficient solutions.

Key Measures to Ensure Environmental Sustainability:

- Improved Watershed Management & Conservation: The project promotes forest conservation and protection of recharge areas to safeguard water sources, ensuring long-term water availability.
- Climate-Resilient Infrastructure to Reduce Climate-Induced Water Stress: The adoption of flood-resistant storage systems, rainwater harvesting facilities, and water filtration units ensures that Micoud remains resilient to droughts, hurricanes, and extreme rainfall events.
- Promotion of Sustainable Water Use & Conservation Practices: Public awareness campaigns will institutionalize water-saving behaviors, ensuring that communities adopt sustainable water management practices.
- Reduction in Water Contamination Risks: The project will upgrade aging water treatment infrastructure, reducing pollution from untreated wastewater and improving overall water quality.

4. Institutional Sustainability

The project ensures that national and local institutions are empowered with the knowledge, tools, and frameworks necessary to manage water resources sustainably beyond the project's duration.

Key Measures to Ensure Institutional Sustainability:

- Capacity Building for WASCO & Local Authorities: Training programs will equip WASCO personnel, WRMA officials, and municipal councils with the technical knowledge to manage, operate, and maintain climate-resilient water infrastructure effectively.
- Integration of Climate Resilience into WASCO's Long-Term Operations & Governance: WASCO's Climate Risk Vulnerability Assessment (CRVA) and Adaptation Plan will be updated and institutionalized to ensure that climate resilience remains a core part of WASCO's operations and decision-making processes.
- Knowledge Management & Regional Best Practices Exchange: A dedicated digital repository will capture lessons learned, allowing Saint Lucia to share experiences with other Caribbean Small Island Developing States (SIDS) and scale up best practices regionally.
- Public-Private & Multi-Stakeholder Collaboration: Strong partnerships with the Ministry of Sustainable Development, Department of Gender Relations, the Climate Change Unit, local municipalities, and CSOs will ensure long-term institutional ownership and oversight.

5. Financial Sustainability

The project ensures long-term financial viability by enhancing WASCO's revenue generation, reducing

operating costs, and securing diversified funding streams.

Key Measures to Ensure Financial Sustainability:

- Long-Term Operations & Maintenance (O&M) Strategy: WASCO has committed to fully absorbing the operation and maintenance costs of the new infrastructure into its long-term capital and operational expenditure framework.
- Revenue Generation Through Efficiency Gains: NRW reduction, enhanced billing systems, and automated monitoring tools will increase WASCO's revenue, allowing continued investments in system upgrades.
- Institutionalized Government Support: The project aligns with Saint Lucia's National Water Sector Policy and WASCO's Financial Sustainability Plan, ensuring continued government budgetary allocations for water sector improvements.
- Scaling Up & Replication Through Future Investments: By demonstrating proof-of-concept, the project will catalyze additional climate finance, particularly through concessional loans, private sector engagement, and co-financing opportunities from multilateral funds such as the GEF and Green Climate Fund.

Scaling Up & Replication Strategy

Beyond Micoud, the project is designed to be replicable and scalable across other vulnerable communities in Saint Lucia and the wider Caribbean.

How the Project Will Be Scaled Up:

- Expansion to other Communities in Saint Lucia: The methodologies, governance frameworks, and technologies deployed in Micoud will serve as a model for replication in other water-stressed districts (e.g., Vieux Fort, Dennery).
- Regional Knowledge Sharing & Policy Alignment: The project's best practices will be shared across OECS member states, fostering knowledge exchange and regional collaboration on water security.
- Leveraging Additional Climate Finance: Future funding from the Green Climate Fund (GCF), Caribbean Development Bank (CDB), and bilateral donors will support scaling up adaptation interventions based on the success of this project.
- Institutional Integration for Policy Coherence: The project will help refine and strengthen Saint Lucia's National Water Policy, ensuring that climate-resilient water management becomes a national priority beyond the project's duration.

This project goes beyond infrastructure development; it builds long-term resilience in the water sector through:

- ✓ Robust governance frameworks & institutional strengthening
- ✓ Financially viable interventions & efficient cost recovery mechanisms
- ✓ Sustainable community engagement & behavior change
- ✓ Integration into national development plans & climate policies
- ✓ Scalability & replication across Saint Lucia and the Caribbean

Through these mechanisms, the project will sustain its outcomes, ensuring that Micoud and other vulnerable communities remain resilient to climate-induced water challenges for generations to come.

~~The sustainability of the project outcomes has been meticulously integrated into the project's design to ensure long-term impact and resilience in Micoud's water supply infrastructure. This includes the modernization and upgrading of water treatment and supply systems, with a focus on integrating climate-resilient technologies to ensure that the infrastructure can withstand future climate-induced stresses, such as increased turbidity, floods, and droughts. This guarantees a reliable water supply for the community over the long term.~~

~~WASCO, as the primary authority, has made a firm commitment to ensuring the sustainability of the project by taking full responsibility for the operation and maintenance of the upgraded systems. This includes routine maintenance, emergency response, and ensuring energy-efficient operations. WASCO will integrate these responsibilities into its operational framework, ensuring that all infrastructure remains functional and resilient in the face of climate change.~~

~~The inclusion of renewable energy sources is another critical aspect, reducing reliance on the national grid, particularly during extreme weather events. This ensures continuous operation during disruptions and lowers operational costs, contributing to financial sustainability.~~

~~Additionally, the project emphasizes capacity-building activities for WASCO staff, enhancing~~

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their technical skills in climate-resilient water management practices, ensuring that the utility can efficiently maintain, operate, and adapt the water supply systems in the future.

Community engagement and awareness are also vital to the project's sustainability. Public education programs are designed to raise awareness about water conservation, climate change impacts, and the importance of maintaining infrastructure. By involving the community, the project fosters a sense of ownership and responsibility, crucial for sustaining the outcomes. Furthermore, the project targets reducing Non-Revenue Water (NRW) through the installation of smart meters and real-time management systems, directly impacting WASCO's financial health by increasing revenue and reducing water losses, allowing for reinvestment in system improvements.

Knowledge transfer and continuous learning are integral, with a dedicated component for capturing and disseminating lessons learned. By documenting best practices and challenges, the project ensures knowledge transfer to future projects, enhancing their effectiveness and sustainability. This component also promotes ongoing adaptation and refinement of strategies, ensuring that the water supply systems remain resilient as climate conditions evolve.

To further ensure sustainability, a strategic partnership approach will be adopted, particularly for components that directly impact vulnerable populations. Collaborating with key stakeholders such as the Ministry of Equity, Social Justice and Empowerment, Human Services, and other relevant agencies with established capacities in supporting vulnerable groups will be essential. These partnerships will ensure that the project's initiatives, especially those focused on improving water accessibility and resilience for the elderly, disabled, and low-income households, are effectively implemented and maintained. By leveraging the expertise and resources of these agencies, the project can achieve a more comprehensive and targeted approach, ensuring that the most vulnerable communities receive the support they need. This collaborative effort will also foster long-term sustainability by embedding the project's activities within broader social support structures, thereby ensuring continuity and ongoing impact beyond the project's lifespan

K. Provide an overview of the environmental and social impacts and risks identified as being relevant to the project/program.

The following table presents a checklist of environmental and social principles relevant to the project, detailing whether each principle complies or if further assessment and management are required. Each category has been evaluated to identify potential impacts and risks associated with the project's activities. This comprehensive review ensures that our project design aligns with the Environmental and Social Policy and Gender Policy of the Adaptation Fund. The table serves as a structured framework for risk management and outlines the measures that will be taken to mitigate any adverse effects on ecosystems, communities, and vulnerable groups. It also highlights the project's commitment to transparent stakeholder engagement, equitable benefit distribution, and the establishment of robust grievance redress mechanisms.

Overall Risk Rating

Based on our current assessment, the overall risk rating for the project is Low. Based on the information provided, the project would most likely fall under **Category B** according to the Adaptation Fund's environmental and social safeguards (AFESS) classification. While most of the potential risks are classified as low to moderate (e.g., access and equity, public health, pollution prevention), there are certain areas requiring further assessment, such as the land use for infrastructure placement, community participation, and potential health risks during construction. The project will have clear next steps and plans for mitigation in place (e.g., waste management, grievance redress mechanisms, health and safety measures), which are typical for Category B projects. No major irreversible impacts were identified, and most risks can be managed through careful planning and implementation of safeguards. These findings and the associated mitigation plans will be further refined during the full funding proposal stage.

Table 11 Checklist of Environment and Social Principles

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	~~**No Risk:** Proposal follows the law depending on concrete actions prioritized during project design further assessment will be made a full funding proposal stage~~	**No significant risks identified**. The project will align with all relevant national laws, policies, and regulations related to environmental protection, water management, and social inclusion. **Next steps**: Ensure continued legal compliance by obtaining necessary approvals from the Water Resource Management Agency (WRMA), Ministry of Sustainable Development, and Physical Planning authorities before implementation. Conduct environmental and social impact assessments were required.
Access and Equity	~~**No Risk:** The project will not reduce or prevent communities in the targeted areas from accessing basic services the project will take several transparent steps that will ensure that the benefits of the project are being distributed fairly with no discrimination and favoritism, the project targeting will comprise of all families, gender, race~~	**Low risk:** Potential disparities in accessing water infrastructure improvements, especially among vulnerable communities. **Next steps**: Ensure fair distribution of project benefits through a targeted approach prioritizing low-income, female-headed, and rural households. Implement stakeholder engagement mechanisms to ensure equitable access.
Marginalized and Vulnerable Groups		**Potentially Low risk**: The project catered to marginalized and vulnerable groups. The vulnerability to climate change and social economic effect is the rational reason why the Micoud community is targeted. Therefore, the project aims to address the issue of vulnerability of ~~the demography~~demography. **Next steps:** During the ~~project~~project's implementation it ~~understood~~is understood that there may be ~~some~~a level of ~~disruptions~~disruption and inconvenience, however through ~~a grievance~~grievance a redress mechanism will be established. This will ~~allow for~~allow those affected by the project to have an accessible, transparent, fair, and effective process for receiving and addressing complaints about environmental or social harm which may occur during all project stages. A gender and social inclusion assessment at the full funding proposal stage.~~A robust stakeholder engagement, and the implementation of appropriate mitigation measures are essential to minimize potential risks.~~
Human Rights	~~**No Risk**: Meaningful stakeholder engagement and consultation processes are essential to uphold the right to participation and ensure that affected~~	Although there are no perceived human right risks, with the full funding proposal a detailed ESAI, ESMS will be developed. The design will Implement transparent consultation processes with all affected communities, guaranteeing their rights to participation, information, and grievance redress mechanisms.

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	~~communities have a voice in project planning, implementation, and monitoring. Transparent communication, access to information, and grievance mechanisms are critical for fostering inclusive decision-making and accountability which this project is committed too.~~	
Gender Equality and Women's Empowerment		**Low to moderate risk:** The project seeks to empower women, yet cultural norms could limit their participation in decision-making related to water management. ~~**low Risk:** Although the project does not address any specific gender issue. It addresses the needs of all marginalized groups. It will afford both men and women access to new and improved water. The differentials need of both men and women will be taken into consideration at stakeholder engagement at various level in the project design. Given the nature and emphasis on community engagement and awareness it is expected that these nuances will be captured. To mitigate against deeply rooted culturally induced gender dynamics, gender specialist is envisioned to undertake a gender assessment and action plan for implementation~~.
Core Labor Rights	~~**No Risk:** The project commits to meeting the core labor standards as identified by the International Labor Organization. St. Lucia. The Labor act, 2006 address core conventions of labor right to ensure compliance and adherence labor contracts will be drafted with these laws and standards. Continuous assessment of compliance will be undertaken throughout the project's lifespan. Additionally, the grievance redress mechanism will facilitate a procedure for lodging and resolving complaints concerning violations that might arise at any stage of the project.~~	**Low risk:** The project will employ local workers for construction and maintenance, but worker protection must be ensured. **Actions:** The project commits to meeting the core labor standards as identified by the International Labor Organization. St. Lucia. The Labor act, 2006 address core conventions of labor right to ensure compliance and adherence labor contracts will be drafted with these laws and standards. Continuous assessment of compliance will be undertaken throughout the project's lifespan. Additionally, the grievance redress mechanism will facilitate a procedure for lodging and resolving complaints concerning violations that might arise at any stage of the project

Indigenous Peoples		**Low Risk:** Available demographic data indicate that approximately 82.5% of Saint Lucia's population is of African descent. Historically, the island was home to a small population of Kalinago people, particularly in the Choiseul region. However, unlike some other countries in the Eastern Caribbean (e.g., Dominica and St. Vincent and the Grenadines), Saint Lucia does not currently have a formally recognized or organized Indigenous Peoples community. Public records and census data do not reflect any significant contemporary presence of Kalinago or other Indigenous groups. Given the importance of protecting Indigenous Peoples' rights and the sensitivity surrounding their historical presence, the project adopts a precautionary approach. A comprehensive Environmental and Social Impact Assessment (ESIA) and stakeholder mapping will be conducted at the full funding proposal stage to confirm whether any individuals or groups self-identify as Indigenous and to ensure that their rights, interests, and perspectives are fully considered, in line with the Adaptation Fund's Environmental and Social Policy
Involuntary Resettlement	~~**No Risk:** There is no assumption that the project will lead to voluntary or involuntary settlement.~~	**Low Risk:** Based on consultations with WASCO, it is assumed that the land designated for the project is owned by WASCO and/or the Government of Saint Lucia, given that WASCO is a public entity. The project does not involve land acquisition or the displacement of communities. However, the proposed placement of the 200,000-gallon tank will require further assessment at the full funding proposal stage to determine the most suitable location, with due consideration for proximity to neighbouring properties and residential dwellings. **Action:** Ensure that all project activities are implemented on publicly owned land or legally designated areas for water infrastructure development. Conduct detailed land use assessments during the full proposal stage to confirm land tenure, minimize potential conflicts, and ensure full compliance with national laws and environmental and social safeguards.
Protection of Natural Habitats		**Low risk:** The project is not expected to have any negative impact on the natural habitats. An Environmental and social management plan (ESMP) will be developed as part of the full project design to ensure that appropriate mitigation measures can be taken. To ensure environmental protection the projects legal register will catalogue pertinent protected areas to species and the relevant legislation pertaining to these will be environmental impact Assessment, as per relevant legislations, these will rigorously adhere to the prescribed legal requirement.
Conservation of Biological Diversity		**Medium**: The project has the potential to negatively impact biological diversity if not properly planned and managed. The risks primarily arise from the introduction of non-native species, disruption of existing ecosystems, and the overuse of natural resources. However, these risks can be effectively mitigated by implementing careful planning, community involvement, and the application of biodiversity-sensitive approaches throughout the project lifecycle. **Action:** Regular monitoring and adaptive management strategies, as well as consultation with biodiversity experts and local stakeholders, are essential to ensure the project's activities contribute positively to biodiversity conservation. This risk and requisite mitigation measure will be fully explored at full funding

		proposal stage.
Climate Change	**No Risk:** Drivers of climate change are not promoted in this project. It is expected that during the project implementation the most efficient approached and methodologies are used to ensure that the project is not contributing to the climate problem	
Pollution Prevention and Resource Efficiency	~~**Not Risk:** The proposed project activities will not pose any significant pollution risk, and no further assessment is required. The project is expected to bring environmental benefits such as sustainable water use to communities.~~	**Low risk:** Infrastructure upgrades may lead to temporary waste generation and increased energy consumption during construction. **Action:** Implement a waste management strategy for construction materials. Integrate energy-efficient systems to ensure long-term sustainability. Promote water conservation practices in public awareness campaigns.
Public Health		**Moderate Risk:** During infrastructure upgrades and installations, there may be temporary disruptions to water services, potentially affecting communities' access to clean water and sanitation facilities. Construction activities associated with the project could pose health risks to workers and nearby residents, such as accidents, noise pollution, and air quality issues from dust and emissions. Improper handling of construction materials, equipment, or wastewater discharge during project implementation could lead to water contamination, posing health hazards to communities reliant on affected water sources. Vulnerable groups, such as women, children, the elderly, and individuals with pre-existing health conditions, may be disproportionately impacted by disruptions in water services or exposure to construction-related hazards, requiring targeted interventions to mitigate potential health risks. Through implementation of Environmental and Occupational health and safety adherence many of these likely impacts can be mitigated. A thorough risk mitigation plan will be actualized at full funding proposal stage
Physical and Cultural Heritage	**No Risk**: While the site of the project is already identified there are no apparent risk regarding the physical and cultural heritage of the Micoud community of St. Lucia overall. However, at full proposal development	.

	measures will be identifies in the ESMP on how the project can mitigate any risk through risk assessment ensuring compliance to the AF environmental and Social Policy	
~~Lands~~Land *and Soil Conservation*		**Low Risk:** Construction and excavation activities may result in temporary land disturbances and increased soil erosion, particularly during the installation of infrastructure such as the 200,000-gallon storage tank and associated pipelines. Improper soil assessment and land stabilization measures could pose risks to infrastructure integrity, potentially leading to failure if the site conditions are not adequately evaluated. Action: To mitigate these risks, a feasibility study will be conducted to assess soil stability, site suitability, and potential land use conflicts. The study will ensure that the placement of infrastructure does not negatively impact agricultural lands, forestry zones, or conservation areas. Given that the intervention site is owned by the Water and Sewerage Company Inc. (WASCO), the risk of land tenure conflicts is considered minimal. ~~The allocation of land for water storage facilities or pipeline routes could potentially conflict with existing land uses, such as agriculture, forestry, or conservation areas. However, as the intervention site is owned by the Water Company, this risk is not applicable in this case. Nevertheless, the expansion of water supply infrastructure may lead to the fragmentation of natural habitats and disruption of wildlife corridors, potentially impacting biodiversity and ecosystem connectivity, particularly in sensitive or protected areas. To address this, potential impacts on land and soil conservation will be thoroughly assessed during the full funding proposal stage. This assessment will include the development of a comprehensive risk management plan, outlining mitigation measures to minimize adverse effects and promote long-term environmental sustainability.~~

PART III: IMPLEMENTATION ARRANGEMENTS

A. Demonstrate how the project/programme aligns with the Results Framework of the Adaptation Fund

Project Objective(s)[29]	Project Outcome Indicator(s)	Fund Outcome	Fund Outcome Indicator	Grant Amount (USD)
Enhance climate resilience in the water sector by ensuring secure, reliable, and safe water access through climate-smart infrastructure improvements, capacity building, and comprehensive public education	~~Number of people (disaggregated by gender) trained in climate-resilient water management.~~ Climate-resilient water supply infrastructure in Micoud upgraded and operational, with physical improvements designed to withstand climate-induced stress such as droughts, floods, and extreme weather events ~~The percentage surveyed population reporting increased awareness of water conservation and climate-related water risks.~~ ~~Percentage of the target population in Micoud with year-round access to climate-resilient and safely managed water supply services~~	**Outcome 4: Increased adaptive capacity within relevant development sector services and infrastructure assets.** ~~**Outcome 2:**~~ ~~**Outcome 3:** Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level~~	~~2.1. Capacity of staff to respond to, and mitigate impacts of, climate-related events from targeted institutions increased~~ 4.2. Physical infrastructure improved to withstand climate change and variability-induced stress~~3.1. Percentage of targeted population aware of predicted adverse impacts of climate change, and of appropriate responses~~ ~~3.2. Percentage of targeted population applying appropriate adaptation responses~~	**5,200,500**~~**590,000**~~

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[29] [1] The AF utilized OECD/DAC terminology for its results framework. Project proponents may use different terminology but the overall principle should still apply

	~~Reduction in average duration of water service interruptions (in hours/month).~~ ~~Percentage reduction in non-revenue water (NRW).~~			
	Percentage reduction in Non-Revenue Water (NRW) due to smart metering and SCADA systems; Number of digital tools (e.g., GIS, CMMS, SCADA) installed and operational.			**1,900,000**~~460,000~~
	No. of new or revised Standard Operating Procedures (SOPs), climate risk protocols, and disaster preparedness plans developed and operationalized; Number of staff trained across institutions (WASCO, WRMA, etc.)	**Outcome 2: Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses**~~Outcome 4: Increased adaptive capacity within relevant development sector services and infrastructure assets.~~	2.1. Capacity of staff to respond to, and mitigate impacts of, climate-related events from targeted institutions increased~~4.1. Responsiveness of development sector services to evolving needs from changing and variable climate~~ ~~4.2. Physical infrastructure improved to withstand climate change and variability-induced stress~~	**590,000**
	No. of people reached (disaggregated by gender and age) through climate change and water awareness campaigns; Number of education institutions participating in outreach activities and practical installations.	**Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level**	3.1. Percentage of targeted population aware of predicted adverse impacts of climate change, and of appropriate responses	**460,000**~~7,100,500~~

	No. of knowledge products developed (case studies, videos, manuals); Number of stakeholders accessing centralized knowledge platform; Number of peer learning sessions and workshops conducted for long-term adaptation in the water sector		3.2. Percentage of targeted population applying appropriate adaptation responses	**260,000**
Project Outcome(s)	Project ~~Outcome~~ Output Indicator(s)	Fund Output	Fund Output Indicator	Grant Amount (USD)
Outcome 1: Enhanced access to water provision services	**~~No. of households with consistent water supply during dry season and post-disaster recovery,~~** **~~Volume (mÂ³) of water stored or distributed through upgraded climate-resilient infrastructure,~~** **~~Downtime (hours/year) of water service interruptions in Micoud~~** **1 water treatment plant upgraded to climate-resilient standards** No.of infrastructure components retrofitted with energy-efficient technologies (e.g., pumps, VFDs) 1 climate-resilient 200,000-gallon water storage tank installed No. of emergency water distribution points established	**Output 4: Vulnerable development sector services and infrastructure assets strengthened in response to climate change impacts, including variability** **~~Output 4: Vulnerable development sector services and infrastructure assets strengthened in response to climate change impacts, including variability~~**	~~4.1.1. No. and type of development sector services modified to respond to new conditions resulting from climate variability and change (by sector and scale)~~ ~~4.1.2. No. of physical assets strengthened or constructed to withstand conditions resulting from climate variability and change (by sector and scale~~ 4.1.2. No. of physical assets strengthened or constructed to withstand conditions resulting from climate variability and change (by sector and scale ~~4.1.1. No. and type of development sector services modified to respond to new conditions resulting from climate variability and change (by sector and scale)~~ ~~4.1.2. No. of physical assets strengthened or constructed to~~	**5,200,500**
Outcome 2: Improved distribution and reliability of potable water supply	**Number of bulk and smart water meters installed in strategic locations for improved monitoring and**			**1,900,000**

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	management,% reduction in NRW in the Micoud water system', Upgraded CMMS system operational and integrated with GIS and SCADA tools for real-time water system managementNo. of leak events detected and resolved through SCADA/smart systems, Operational cost savings attributable to energy-efficient and smart systems		withstand conditions resulting from climate variability and change (by sector and scale	
Outcome 3: Strengthened institutional capacity and systems for climate responsive management of water resources	**No. of operational SOPs, technical manuals, and disaster risk management plans developed and approved for the Micoud water supply system** **Centralized geo-spatial water information database developed, populated, and accessible to relevant institutionsCentralized geo-spatial database developed and operational for the Micoud water system, integrating real-time data on source quality, quantity, and distribution** No. of data-capturing devices and equipment installed and operational at critical water sources and infrastructure nodes **No. government and utility personnel trained on climate-resilient water management tools and systems-Disaggregated by Institution and Gender.** **No.of stakeholders (disaggregated by sex and institution) trained in climate-**	**Output 2.1: Strengthened capacity of national and sub-national centers and networks to respond rapidly to extreme weather eventsOutput 2.1: Strengthened capacity of national and sub-national centers and networks to respond rapidly to extreme weather events**	2.1.1. No. of, of staff trained to respond to, and mitigate impacts of, climate-related events (by gender) 2.1.2 No. of targeted institutions with increased capacity to minimize exposure to climate variability risks (by type, sector and scale)	**590,000**

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	~~resilient water resource management, SCADA, GIS, CMMS, and inclusive planning~~ ~~% of trained personnel demonstrating improved knowledge in post-training assessments~~			
Outcome 4: Strengthened awareness of climate threats and risk-reduction processes associated with water resources	**No. of gender-sensitive public awareness campaigns developed and implemented**~~No. of public awareness materials developed and disseminated (disaggregated by type: flyers, posters, radio ads, videos, etc.)~~ **No.of communication products (radio/TV spots, posters, digital content) developed with gender-inclusive messaging.** No.of people reached by the awareness campaign (disaggregated by sex, age, and location) **No. of educational sessions conducted in schools, community groups, and stakeholder networks**~~. of education and outreach sessions conducted (disaggregated by institution type)~~	**Output 3.1: Targeted population groups participating in adaptation and risk reduction awareness activities**	3.1.1 No. of news outlets in the local press and media that have covered the topic	**460,000**

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	%of surveyed population demonstrating increased knowledge of water conservation, ~~No. of students engaged in hands-on training and installations (disaggregated by institution and sex)~~No. of students engaged in hands-on training for water conservation technologies (disaggregated by sex and institution type). **No. of schools and public buildings equipped with water-efficient technologies through the program**			
Outcome 5: Enhanced learning, knowledge transfer, and dissemination of best practices for climate-resilient water management in Micoud	No. of ~~trainings~~training on new technologies and lessons learnt and best practices in the project implementation. **No. of knowledge products developed (e.g., case studies, reports, toolkits, training manuals, education materials),** No.of participants attending the conference (disaggregated by gender, sector, region) No. of gender-sensitive best practices in water management documented and shared, **Centralized digital knowledge hub platform established, functional and maintained by local authorities** Peer learning network formally established and operational No. of active members or institutions participating in the network	**Output 3.2: Strengthened capacity of national and subnational stakeholders and entities to capture and disseminate knowledge and learning**	3.2.2 No. of tools and guidelines developed (thematic, sectoral, institutional) and shared with relevant stakeholders	**260,000**

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

A. Record of endorsement on behalf of the government[2] *Provide the name and position of the government official and indicate date of endorsement. If this is a regional project/programme, list the endorsing ~~officials~~officials of all the participating countries. The endorsement letter(s) should be attached as an annex to the project/programme proposal. Please attach the endorsement letter(s) with this template; add as many participating governments if a regional project/programme:*

Ms. Anita Montoute *Permanent Secretary* *Ministry of Education, Innovation, Gender Relations and Sustainable Development* *Dept. of Sustainable Development* *Georgina Court,* *John Compton Highway,* *Saint Lucia, ~~W.I~~W. I*	Date*: November, ~~14,~~14, 2024*

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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 (Saint Lucia's Climate Action Policy, and Nationally Determined Contribution) 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~~.

~~Name & Signature: Mark Bynoe, PhD.~~ Implementing Entity Coordinator:	
Date: *12/16/2024*	Tel. and email: +592 620 0559, mbynoe@caribbeanclimate.org
Project Contact Person:	
Tel. And Email:	

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

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MINISTRY OF EDUCATION, SUSTAINABLE DEVELOPMENT, INNOVATION, SCIENCE, TECHNOLOGY AND VOCATIONAL TRAINING
DEPARTMENT OF SUSTAINABLE DEVELOPMENT

Communication on this subject should be addressed to:
The Permanent Secretary

Georgianna Court
John Compton Highway
Castries
SAINT LUCIA, W.I.
Tel No: (758) 468-5863
Email: sustainable.devt@govt.lc

November 14, 2024

Adaptation Fund Board
Secretariat
c/o Global Environment Facility
Mail stop: N 7-700
1818H Street NW
Washington DC 20433
USA

Dear Sir/Madam,

Subject: Endorsement of "Replicating Resilient Water Supply Systems Project in Saint Lucia (Re- Water Saint Lucia)"

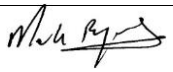
The Department of Sustainable Development, in its capacity as National Designated Authority to the Adaptation Fund, has extensively engaged with the Saint Lucia Water and Sewerage Company (WASCO) and Water Resources Management Agency (WRMA). We confirm that the above-captioned national concept note is in alignment with the Government's national priorities, with respect to implementing adaptation initiatives to reduce the adverse impacts of, and risks, posed by climate change in Saint Lucia. More specifically, the proposed project will contribute to the fulfilment of prioritised measures outlined in Saint Lucia's Sectoral Adaptation Strategy and Action Plan (SASAP) for the water sector, as part of the country's broader National Adaptation Plan (NAP).

In this regard, the Department is pleased to endorse the above project concept for support under the Adaptation Fund. This endorsement will facilitate the development of a full project proposal, which will further address any data or procedural gaps of the concept note.

Yours sincerely,

.....
ANITA MONTOUTE (Mrs.)
Permanent Secretary

c.c.
Dr. Colin Young, Executive Director, Caribbean Community Climate Change Centre
Ms. Zilta George Leslie, Chief Executive Officer & Mr. Terrence Gilliard, Strategic Planning Manager, Water and Sewerage Company
Mr. Jason Ernest, Director, Water Resources Management Agency
Ms. Dawn Piere-Nathoniel, Chief Sustainable Development and Environment Officer

~~*Name & Signature: Mark Bynoe, PhD.*~~  ~~Implementing Entity Coordinator:~~	
~~Date: *(Month, Day, Year)*~~ ~~*12/16/2024*~~	~~Tel. and email:~~ ~~+592 620 0559~~ ~~mbynoe@caribbeanclimate.org~~
~~Project Contact Person:~~	
~~Tel. And Email:~~	

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Annexes

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~~A~~ANN~~NN~~EX 1

Preliminary Gender Assessment- Replicating Resilient Water Supply Systems Project in St. Lucia (Re-Water St. Lucia)

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Context

Saint Lucia's population was 165,595 persons in 2010 with an estimated population of 177,301 in 2017 (49.64% Males(M) and 50.37% females (F))[30]. Micoud's District population size stands at 16,284, with the highest concentration of indigence at 27.4% and the second highest concentration of the non-indigent poor at 15.9%. At the 2010 Census 24%M, and 32%F were unemployed in Micoud. This was contrasted with the national unemployment rates of 19%M and 22%F.

Saint Lucia's NAP (2018-2028) outlines a 10-year process for adaptive and coordinated action to address climate change nationally. It aims to create the enabling environment needed and fast-track climate change and disaster management actions in the country. The ten-year NAP serves as a means of identifying immediate, medium and long-term climate change adaptation needs, and developing and implementing strategies and actions to address those needs. It is organized into seven priority sectors: water, agriculture, fisheries, infrastructure and spatial planning, natural resource management, education, health and tourism (Government of Saint Lucia, 2018a). Gender is included in the NAP, where a section outlines the approach to "mainstreaming of gender across all activities involved in the NAP process, with the aim of decreasing gender-based vulnerabilities, promoting gender equality in decision-making and ensuring the implementation of adaptation measures does not impose additional burden to women, in particular, and does not promote the domination of any gender over others" (Government of Saint Lucia, 2018a: 47).

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Gender Differentiated Activities and Division of Labour

The Saint Lucia National Report of Living Conditions 2016 noted that generally occupational sex segregation is a feature of the labour market. There were also lower labour force participation rates among women are persistent, and there are higher unemployment rates among women (17.5%) compared to men (16.9%)[31]. Males also experienced a larger increase in median earnings than females, and females earned less than males in every educational category in 2016[32].The EnGenDer assessment put forward that this highlights the structural inequalities in women's access to employment, and the likelihood of them being both unemployed and underemployed[33].This pattern has remained consistent with the most recent Labour Force Survey conducted in the first quarter of 2020, which found that unemployment rates among females are substantially higher than for males at 22% and 14%, respectively.[34]

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Gender Differentiated Climate Change Risks and Impacts

The EnGenDer assessment also identified that high risks groups that are vulnerable to climate-related disasters include female-headed households, children and elderly[35]. Female-headed households were

[30] The Central Statistical Office of Saint Lucia, 2019 as cited in Caribbean Natural Resources Institute (CANARI), EnGenDer Report of the Gender-based Climate Resilience Analysis for Saint Lucia (2022)

[31] Kairi Consultants Limited, 2018 as cited in CANARI, EnGenDer Report of the Gender-based Climate Resilience Analysis for Saint Lucia (2022)

[32] *Ibid*

[33] CANARI, EnGenDer Report of the Gender-based Climate Resilience Analysis for Saint Lucia (2022)

[34] The Central Statistics Office of Saint Lucia, 2020 as cited in in CANARI, EnGenDer Report of the Gender-based Climate Resilience Analysis for Saint Lucia (2022)

[35] CANARI, EnGenDer Report of the Gender-based Climate Resilience Analysis for Saint Lucia (2022)

found to have increased vulnerability to the impacts of Hurricane Tomas as they represented 44% of households and comprised 47% of low to middle-income households[36]. Women in female-headed households were found to have lower employment levels and lower wage brackets in the labour market[37]. Female-headed households also had large household sizes and were more likely to live in poor housing in disaster-prone areas. It was also noted that socially vulnerable female-headed households, which were not classified as poor, might move below the poverty line in the event of a natural disaster. "After Hurricane Tomas, the damage to the water sector was estimated at $US 46.2 million. Around 80% of the population (137,896 persons) were without potable water for two weeks after the hurricane due to siltation of the dam, and due to damage to back up generators and pumps. The impacts of the hurricane exacerbated water supply issues in rural areas such as Vieux Fort leading to less treated water being delivered post-hurricane. There was a notable increase in gastroenteritis in children under 5 years for 2010 (47% increase), which may be correlated with the hurricane's impacts on access to and the quality of potable water". [38]

Vulnerability and Water

About 95% of households have access to pipe-borne water. However, the other 5% are generally poor, rural households that rely on rainwater or untreated water from rivers that can be contaminated due to erosion, agricultural run-off and untreated effluent[39]. Only 70.8% of the population of Micoud district has public piped water into their dwellings. 17.5 of the population accessed was from public standpipes outside dwelling units and 8.5% received water from other sources[40]. In comparison to other districts, Micoud was among the four worst performing districts of the twelve districts in terms of household access to water supply. The EnGenDer Assessment identified "areas of most concern, which continue to experience multiple deprivations including in access to water and sanitation, were districts and communities in Anse la Raye, Bexon, Canaries, sub- urban/rural Castries (including Marchand Road), Dennery, Gros Islet, Laborie, Marc, Micoud, Ravine Poisson and Soufriere. These areas saw deprivations and or growing poverty and inequality over a 10- year period from 2006-2016 and are among those areas frequently impacted by climate-related hazards".[41]

Differences in Water Use

In a gender analysis of five communities in Saint Lucia supplied by the John Compton Dam, it was highlighted that "within the household women and men equally value piped water inside the dwelling and have similar and complementary usage for personal and household activities". … "Difference in water use is evident in the types of household activities undertaken. These correspond to traditional gender roles with women primarily using water for daily meal preparation to sustain family nutrition, general household cleanliness, laundry, and care of sanitary facilities. Men's use of water for household activities canters on cleaning of yards, vehicles, tools and equipment"[42]. The study further highlighted that the intensity of women's needs for water undertake tasks in comparison to the seemingly optional need by men. It was noted that both sets of activities are conducive to households' wellbeing[43]. Importantly the study highlighted that Women feel intense pressure when their role fulfilment is continuously frustrated by persistent water

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[36] ECLAC, 2011 as cited in CANARI, EnGenDer Report of the Gender-based Climate Resilience Analysis for Saint Lucia (2022)
[37] *Ibid*
[38] *Ibid*
[39] CANARI, EnGenDer Report of the Gender-based Climate Resilience Analysis for Saint Lucia (2022)
[40] GOSL, Population and Housing Census, 2010
[41] *Ibid*
[42] Caribbean Policy Development Centre, Gender Capacity Building in the Water Sector, 2020
[43] *Ibid*

shortages[44]. The reality of lone female or male households is that their roles were more flexible and the above would not always hold true.

Water Collection Responsibilities

The Saint Lucia Country Gender Assessment found that the collection of water or the use of river water can be extremely time consuming, especially for women who are responsible for household activities requiring water (cooking, cleaning, laundry, etc.).[45] A survey done for the evaluation of the gender sensitive socioeconomic impacts of the Vieux Fort Water Redevelopment Project revealed that "In response to the question who in your household would usually collect water, 64% of the persons in the Treatment Group said adult women and 67.5% in the Control Group accounted for the same"[46]. This was the case since women predominantly were at home during the day. "While some men were noted to assist with household chores adult women were mentioned to bear the brunt of this responsibility"[47]. This was not a role solely expected of adult women, but also young women below the age of 18.

Coping with Water Shortages

Women and men in households have developed the proactive coping mechanism of always storing water. There are identified nuances identified in the Caribbean Policy Development Centre's 2020 study, however, largely households regardless of male or female heads rely on water storage. The means used to ensure safe storage of water is important as there are some gender distinctions, but moreover socio-economic distinctions in that regard. The study does highlight that socioeconomic differences among households result in some having the benefit of cement tanks or plastic 5,000-gallon storage tanks while others rely on smaller containers such as barrels, buckets and bottles[48]. "…Household storage is supplemented by resorting to natural water sources such as ponds, rivers and springs where these exist and are accessible to maintain daily social reproduction and productive functionality during shortage. Women also cope with water shortage by limiting the number of times they cook, deferring washing and cleaning, and enduring the inconveniences of laundry piling up"[49]. Purchasing bottled water for drinking, and conserving available water are also coping strategies. The means for conserving available water similarly has gender and socioeconomic distinctions.

EnGenDer Recommendations for Water Sector in Saint Lucia

The 2022 EnGenDer assessment produced concrete recommendations for ensuring gender responsive climate resilience in the water sector. The recommendations as highlighted below[50] are useful for shaping gender solutions for this Re-Water Saint Lucia Project:

1. Invest in infrastructure for the provision of adequate water and sanitation to the most vulnerable communities, and those experiencing compounded socioeconomic deprivation due to structural inequalities. These include but are not limited to Anse la Raye, Bexon, Canaries, Dennery, sub-urban/rural Castries (including Marchand Road), Gros Islet, Marc, Laborie, Micoud, Ravine Poisson and Soufriere.

[44] *Ibid*

[45] Rawwida Baksh And Associates, Country Gender Assessment Saint Lucia, 2016

[46] SHIDAA Sustainable Development Solutions Ltd, Evaluation of The Gender-Sensitive Socioeconomic Impacts of the Vieux Fort Water Supply Redevelopment Project for water and Sewerage Company Ltd. (WASCO), 2019

[47] *Ibid*

[48] Caribbean Policy Development Centre, Gender Capacity Building in the Water Sector, 2020

[49] *Ibid*

[50] Sourced directly from CANARI, EnGenDer Report of the Gender-based Climate Resilience Analysis for Saint Lucia (2022)

2. Address non-revenue water losses due to poor infrastructure and invest in storage to better deal with increasing water shortages and droughts. Implement 'pro-poor' policies to support low-income families in accessing water, ensuring that water is affordable and that daily needs can be met. This should include a focus on income poor single female headed households with a burden of care for children and others in their households.

3. Implement awareness raising and specific gender-responsive and community-led climate resilient water management initiatives, including for rainwater harvesting and storage. This should also translate into the development and implementation of sustainable wastewater management to address related issues of water quality and inadequate sewage disposal and sanitation.

Water and Sewage Company Inc (WASCO)

As one of the project's Implementation Partner WASCO's capacity for mainstreaming gender is bolstered by the Company's experience in implementing projects with donors that require gender responsiveness such as the Caribbean Development Bank. The Company has commissioned project level gender analyses to support its interventions in several areas including in Vieux Fort. In addition, WASCO has a gender policy which provides guidance for mainstreaming gender in the institution and services of the company. While this is so, it is recognised that integration of gender and social inclusion into the operation of utility companies requires cultural shift, awareness raising and capacity development. This too is in line with the Company's Gender Policy.

Stakeholder Consultations

Saint Lucia's Water Sectoral Adaptation Strategy and Action Plan (SASAP) has informed the design of this project. While there has not yet been dedicated engagement of stakeholders from a gender perspective, those or with gender expertise for this Re-Water Saint Lucia Project, the engagement for the SASAP was broad to also include perspectives of the Department of Gender Relations. Going forward, it will be important to ensure that critical perspectives on social inclusion and gender equity are considered. It is therefore expected that these key stakeholders will be consulted as part of the Gender Assessment, and their views are incorporated to further flesh out the design of this project at the full funding proposal stage.

Gender Solutions Re-Water St. Lucia

The 2022 EnGenDer assessment for the Water Sector in Saint Lucia provides sound recommendations for ensuring that the needs of vulnerable populations, including single female headed households are prioritised. The Project must ensure that there is inclusive and meaningful access to water, even when water availability is improved through the interventions of Re-Water Saint Lucia. The project should actively explore optimizing the coping mechanism to water shortages pointed out by communities. Gender differentiated coping strategies are preliminarily identified from complementary gender assessments done by SHIDAA Sustainable Development Solutions Ltd (2019), these can be further explored to ensure that activities aimed at ensuring sustainable access to clean water in the face of climate change and other challenges are beneficial to both genders. As part of the project's Gender Assessment, and Environmental and Social Study options for water collection and storage and collection will need to be further explored and detailed in support of Component 1 .

Institutionally, the Departments of Gender Relations and/or Social Transformation should be key project partners in implementing initiatives that ensure inclusive access to water for vulnerable populations, primarily under components 1 and 4. They are pivotal partners who can ensure gender and social inclusion approaches are integrated as part of comprehensive integrated water resource planning and management.

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Recognising the importance of teachers and parents in awareness communication for behavioural change, the project will need to ensure that unique approaches for awareness building are considered as part of the project's gender action plan, and ultimately the project's activities. Effective and gender responsive approaches to communication may need to be studied to detail a responsive plan for awareness.

[i] There is a distinction between the population data provided for Micoud village (including population, building type, land tenure, and water supply) and that for Micoud District. The data for Micoud village was shared by the Central Statistical Division of Saint Lucia, and an attempt was made to illustrate the potential impact of the project on this subset of the target population