

Annual Performance Report (APR)

Reference Number (FP060): Water Sector Resilience Nexus for Sustainability in Barbados (WSRN S-Barbados)

Accredited Entity Name: Caribbean Community Climate Change Centre

**Annual Reporting Period Covered in this Report:
(From 16-01-2019 to 31-12-2019)**

Sections in this report:

- Section 1: General Information
- Section 2: Implementation Progress
- Section 3: Financial Information¹ (Excel worksheet attached).
- Section 4: Report on Environmental and Social Safeguards & Gender
- Section 5: Annexes
- Section 6: Attachments

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Please indicate if this report has been shared with the relevant NDA(s) for this Funded Activity (Yes/No)	Date of submission to NDA 26-02-2020

¹ Please refer to excel worksheet attached "APR Section 3 (Financial Information)". Provide as attachments to this report any detailed additional financial information if required in the Funded Activity Agreement.

SECTION 1: GENERAL INFORMATION	
This section provides general information on the funded activity.	
1. Funded Activity Title:	Water Sector Resilience Nexus for Sustainability in Barbados (WSRN S-Barbados)
2. Funding Proposal Number:	FP060
3. Date of Board approval - Board Meeting Number:	3/1/2018 B.19
4. Accredited Entity:	<i>Caribbean Community Climate Change Centre</i>
5. Focal Point of the Accredited Entity for this Project:	<i>(Mr. Keith Nichols/Dr. Donneil Cain / knichols@caribbeanclimate.bz/dcain@caribbeanclimate.bz /501-822-1094/1104)</i>
6. Executing Entity(ies):	Caribbean Community Climate Change Centre and Barbados Water Authority
7. Implementation Period:	From: 1/16/2019 To: 4/15/2024
8. Current year of Implementation:	Year 1
9. Date of Submission of the Report:	2/29/2020
10. Annual Reporting period covered in this report:	From: 1/16/2019 To: 12/31/2019
11. Total Project Budget²:	(e.g. Loan: USD 25,000,000 Grant: USD 5,000,000 Total: USD 45,205,010)
12. Total amount of GCF Proceeds Approved:	Grant: USD 27,605,010
13. Total amount of GCF Proceeds disbursed (cumulative) to the Accredited Entity:	Grant: USD 5,000,000

² Total project budget including co-financing as reflected in the relevant Funded Activity Agreement.

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SECTION 2: IMPLEMENTATION PROGRESS

2.1 OVERALL (SUMMARY) PROJECT PROGRESS

Consistent with Clause 8: "Reporting, Monitoring and Evaluation Schedule" of the Funded Activity Agreement FP060, the Green Climate Fund (GCF) requires that the accredited entity submits its reports in accordance with Schedule 4. This Annual Performance Report provides a brief summary of the overall progress on the implementation progress of the Water Sector Resilience Nexus for Sustainability in Barbados (WSRN S-Barbados) Project. In this report, funds spent on activities undertaken by the Accredited Entity since January 16, 2019, which are directly aligned to the Project's Logic Framework are being presented. Therefore, progress on the following components and sub-components follow.

Component 1:

- The BWA completed the installation of 0.42 megawatts (MW) photovoltaic (PV) panels at the Bowmanston Water Pumping Facility and upgraded their transformer and switchgear to accommodate up to 1.5MW of installed capacity.
- Bidding documents are being developed for the GCF funded activities design, purchase, supply and commissioning of 4.5 MW solar PV systems as well as for one emergency micro-turbine.
- This process includes the development of the Technical Specifications, engineers' estimates, eligibility criteria, and engineering concept designs for the systems, all of which have been drafted and are being reviewed by the Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE) for quality control purposes; it is anticipated that the review should conclude in January 2020 for publication of these bidding documents by mid-February 2020.

Component Two:

- The request for consultants to submit their expression of interest (EOI) to revise the draft Revolving Adaptation Fund Facility (RAFF) Charter and produce the Operations Manual for the RAFF closed on December 27th 2019. It is expected that the consultant will be hired in February 2020 to produce the Manual and update the Charter.

Component Three

- The BWA has adopted the Non-Revenue Strategy developed under this Project. A total of 6.2kms of mains have been replaced based on a decision matrix to determine the areas for mains replacement and the most appropriate techniques to deploy. Currently, replacement schedules and activity are being planned for the next phase. Communication with customers on reconnection flushing of lines is ongoing. To date, the BWA has installed a total of 305 personal 400-gallon tanks and is planning to install 625 tanks by 2024. The combined request for consultants to submit their expression of interest (EOI) to prepare an integrated needs assessment for the Water Storage Tank (WST) Systems and the Rainwater Harvesting (RWH) Systems is forecasted to be completed by the start of the fourth quarter of 2020.

Component Four

- Memoranda of Understanding were successfully executed between the BWA and the University of South Florida (USF) and the University of the West Indies (UWI); this is one of the completed outputs under component 4.1.1. The knowledge management activities have begun under component 4.1, which will also provide the foundation for the educational materials that are to be created for the engagement with the general public.
- Contracts have been successfully developed for the consultancy services by the USF and the UWI Institute for Gender Studies (IGDS). During this reporting period, the USF contract has been fully executed and it is projected that the contract with UWI-IGDS will be fully executed in January 2020 for a planned inception meeting during the month of January 2020.
- In addition, one Masters research student with the UWI Centre for Resource Management and Environmental Studies (CERMES) is conducting research on project components to contribute knowledge on lessons learnt on climate resilient smart utilities, thus contributing to component 4.1.2, and is being directly supervised by the project team

Project Management:

- Project Management Teams are in place at both the CCCCC and BWA to support the implementation of this Project Site preparation and permission works have begun...
- The inception ceremony for all stakeholders and the general public, which also served as the official ceremony to launch the WSRN S-Barbados Project, was held on May 10, 2019 at the Belle Pumping Station
- Terms of Reference for the Project Steering Committee (PSC) were finalized for dissemination and nominations from the various stakeholder organizations were received
- The APR will be communicated to the PSC for their reference in preparation for the PSC meeting scheduled for March 2020.

2.2 Performance against the GCF Investment Criteria

The activities completed in calendar year 2019 were focused on recruiting staff for project management, preparing procurement documents and engaging with various key project stakeholders. Analogous with the overall GCFs comments for the investment criteria, identified individually below, the Project will ensure that all activities were aligned with the principles of the investment criteria. Within the procurement documents prepared for component one (1) the selected pumping stations will be made more resilient in the event of a power failure, either island-wide or site-specific, the energy needs of the selected pumping stations will not be affected; hence water production and distribution will remain intact. In addition, the BWA has fully implemented the 0.42MW solar photovoltaic system at the Bowmanston pumping station and they have included an emergency 0.7MW microturbine to ensure that water can be delivered to the most vulnerable in the rural areas that the Bowmanston pumping station supplies water. Furthermore, these pumping stations serve different subsets of the population therefore even if a power failure were to occur, it would only affect part of the island. In addition, these parts of the island that could be affected will benefit from the tanker service that will be able to deliver water to these residents. In the preparation of the documents it was also built in that this component will ensure that the pumping of potable water is independent of the supply of electrical power through the distribution network, which is very susceptible to disruption in severe weather. Moreover, it should also be noted that the Caribbean Institute for Meteorology and Hydrology has reported that Barbados is experiencing a serious drought period with reported rainfall in 2019 being the lowest since 1947. Therefore, the BWA has installed more efficient pumps and expanded its SCADA system to better monitor its pumping equipment to minimize the hyper-pressurization of their distribution lines. As such, due to this expansion of their SCADA system, the BWA is in the process of submitting a request to reallocate funds to purchase the license extension for their SCADA system to assist with the monitoring and management of their pumping systems.

The draft charter for the Revolving Adaptation Fund Facility (RAFF) was prepared. It is expected that the consultant will be hired within the next reporting period to conduct this assessment. The initial GCF's assessment noted that the RAFF, in order to be effective and fulfil its purpose, be designed as a response to the need for increased climate change adaptation and mitigation actions in the water sector of Barbados. Therefore, the draft RAFF charter was designed as such, and the guidelines for the creation of the RAFF manual included the proposed RAFF framework that involves raising public awareness through education and media engagement at all levels, and strengthening legislation and regulations. Moreover, to maintain the ubiquitous presence of the RAFF, at the Project launch, the components of the Project were outlined. This was to provide a platform for the public awareness campaign to be initiated where persons would become curious about the RAFF and how to access the RAFF. A joint public awareness and educational program will be launched during the implementation of component four (4), which will include households, businesses, hoteliers and public entities. In addition, information will be presented on how the RAFF can be utilized to seek support for installation of techniques and facilities that help reduce water consumption, such as reduced-flow faucets and showerheads, grey water treatment (so effluent can be re-used), inter alia.

Component three (3) comprises the execution of the climate change adaptation water master plan and water management and water loss reduction initiatives. To date, approximately 6.2 kilometres (km) of water mains have been replaced, representing 38.75% completion in this component, and the Barbados Water Authority has adopted the Non-Revenue Strategy developed under this Project. To date, the BWA has installed a total of 305 personal 400-gallon tanks. Due to the importance of the national need for decentralized storage of water in Barbados, the BWA has decided to expand their personal tank programme and has a new projected parget of installation of 625 tanks by 2024. The combined request for consultants to submit their expression of interest (EOI) to prepare an integrated needs assessment for the Water Storage Tank (WST) and the Rainwater Harvesting (RWH) Systems concluded in October and evaluations were conducted. In December a consultancy firm was selected after evaluation results were consolidated. Up until the end of December 2019 contract negotiations were ongoing. The Queens Elizabeth Hospital (QEH) is the national hospital. The integrated needs assessment was originally scoped to include identifying and assessing the needs of the QEH. However, due to subsequent developments, the QEH assessed their water storage needs in alignment with the standards of the World Health Organization (WHO). As a result, their findings are now sufficient to validate their requirements and the scope of the needs assessment has been reduced. Consultations are ongoing with the engineering staff of the QEH to advance this activity. This activity is for the benefit of the population, particularly for vulnerable populations. As predicted, Barbados is currently experiencing drought conditions, and therefore, the need for decentralised storage has increased. With respect to the overall NRW strategy for the BWA, to date the BWA have employed the assistance of "Operators without Borders" and they have provided the BWA with a roadmap on how they can go about achieving this and, the BWA has started to employ some of the methods suggested and will continue to develop and implement these activities over time.

The developed procurement documents for the combined integrated needs assessment of the water and rain water harvesting system has encompassed the comments in the GCF's assessment which identifies that the harvesting of rainwater and storm-water specifically for the purposes of enhancing resilience will mitigate the adverse effects associated with localized flooding and waterlogging as well as the transport of sediments and nutrients into the near-shore marine environment. In addition, to also reduce, at the household and farming level, leakages that have the potential to improve the health and safety of the environment by reducing mosquito breeding sites and generally creating a cleaner environment.

The first presentation of a proposal for technical training and educational awareness was conducted to include building the technical capacity needed to do all the above, while also helping to shape policies and legislation related to climate change; Raising greater awareness about climate variability and change; and Providing a platform of knowledge and resources to support further climate change adaptation in the Caribbean.

In accordance with the updated implementation schedule the following activities are planned for implementation during the next reporting period:

The Project's implementation timeline was thoroughly revised based on the foundational work that had to be conducted to ensure the quality of the products and services to be procured under the various components. The AE took these measures to ensure that there was no compromise on the quality of the activities to be conducted, and to ensure that the procurement rules of the Centre were followed. It should be noted that the only impact that this had on the implementation timeline was the time allotted for the advanced development of TORs. Noting that there were some TORs that were drafted prior to the implementation of the Project, there were changes in Policies of Barbados and National Priorities that were driven by the change in the Government of Barbados in 2018, post board approval on March 1st 2018. As such, there was a need to revise these TORs and technical specifications for the various components to align to the newly articulated articles of policy. These policy articles are identified in the Inception report in Section 6.3: paragraph 6, paragraph 7 and paragraph 8, however, for ease of reference, these have been included in ANNEX 2 of this APR.

Specifically, the following changes have been made to the implementation timeline and the activities below will be conducted during the next reporting period:

1. Component One (1)
 - a. Activity 1
 - i. Initial start date: 2019 Q1 end date: 2020 Q4
 - ii. Revised start date: 2019 Q1 end date: 2021 Q4
Rationale: Changes to fossil fuel policy in Barbados, technical specifications are in the process of being redrafted to ensure that the new policy is followed.
2. Component Two (2)
 - a. Activity 2
 - i. Initial start date: 2019 Q1 end date: 2020 Q4
 - ii. Revised start date: 2019 Q1 end date: 2021 Q2
Rationale: Total activity timeline unchanged. Sub-activity 2.1.2 started 2019 Q3 due to time changes made in Activity 1.1 as Activity 2.1 depends on inputs from Activity 1.1.
3. Component Three (3)
 - a. Activity 3.1
 - i. Initial start date: 2019 Q2 end date: 2020 Q2
 - ii. Revised start date: 2019 Q4 end date: 2020 Q4
Rationale: New climate change policy (draft) was incorporated into the draft TOR. New TOR planned to be issued in 2020 Q1 and works completed by 2020 Q4.
 - b. Activity 3.3
 - i. Initial start date: 2019 Q2 end date: 2020 Q2
 - ii. Revised start date: 2019 Q4 end date: 2022 Q2
Rationale: The BWA encountered problems with their SCADA system. Optiramp installation and operation is dependent on a fully implemented SCADA system. Although this affects the final end date, there is no value in installing the Optiramp system without a functioning SCADA.
4. Component Four (4)
 - a. Activity 4.1 and 4.2
 - i. To date, no changes have been made to Activity 4. As such during the next reporting period (calendar year 2020) activities 4.1 and 4.2 will continue to be implemented. Contracts have been successfully developed for the consultancy services by the USF and the UWI Institute for Gender Studies (IGDS). During this reporting period, the USF contract has been fully executed and it is projected that the contract with UWI-IGDS will be fully executed in January for a planned inception meeting during the month of January 2020. It is anticipated that the World Water Day activities will be held on March 22nd 2020 and that the Communications Strategy will be completed by the end of the Second Quarter of 2020.

2.2.1 Impact Potential

The funded activities implemented during calendar year 2019 focused on recruitment of personnel and thereafter the development of procurement documents to satisfy the requirements of the various components according to the implementation schedule. In accordance with the joint responsibility to prepare these documents, input was required from both the Caribbean Community Climate Change Centre, the Barbados Water Authority and the Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE). The developments of procurement documents are very critical as the creation of the technical specifications is crucial to the procurement process, especially the evaluation and selection process. The first nine months of the project had a heavy focus on the development of the procurement documents for the following:

- Component 1: 4.5 MW PV and 2.0MW Micro-turbine systems for the Belle, Hampton and Bowmanston pumping stations;
- Component 2: Operations manual and Charter for the Revolving Adaptation Fund Facility;
- Component 3: Needs assessment of Potable and Rain Water Harvesting Water Storage Tanks, Water Tankers;
- Component 4: Educational Materials, Gender Mainstreaming, Communications Strategy and ENVISION training to increase key stakeholder and local capacity for climate resilient decisions and climate proofing.

During the preparation of these documents the assessments provided by the GCF were utilized to provide additional direction to maximize the impact potential. In this regard, the resultant crosscutting mitigation and adaptation actions that are to be conducted guided the scheduled procurement documents that are to ensure that the photovoltaic panels, comprising the system, are able to at a minimum withstand category three (3) hurricane force winds. In addition, the micro-turbine units to be procured are to substitute the electrical energy being supplied from fuel oil and diesel during power outages as a result of weather events, thus reducing the overall GHG emissions and carbon footprint of the water sector in Barbados. It was important to take into account the GCF assessment for impact potential with indicated: "Implementing renewable energy technologies, which will 'green' energy supplies to the water works and also ensure continuity of the power supply for water pumping even during extreme events, which tend to disrupt grid power supplies". As a result, a major development that was realized in this process was the ability to develop an efficient emergency hybrid system that would be able to maximize the use of the photovoltaic system, thus further reducing the use of fossil fuels and GHG emissions. The proposed system has an advanced design to use the photovoltaic system as much as possible with emergency back-up power being provided by the micro-turbine, therefore reducing the electrical energy being produced by fossil fuels. The micro-turbine has now a secondary requirement that accommodates higher prerequisite for reduced NOx emissions.

The initial assessment also took into account the creation of the Revolving Adaptation Fund Facility (RAFF), which noted "Creating a revolving adaptation funding facility, which will enable the continuation of climate resilience after the end of the current intervention". During the current reporting period the EOI was published and the call was concluded. It is anticipated that the RAFF will be finalised for publication by the end of the second quarter of 2020. The GCF commented that the RAFF can complement the impact of the other components at a small-scale level, and as such the draft RAFF charter was developed to guide the future direction of its development. Included in the RAFF was the possible uses, efficient storage and distribution systems; systems that reduce water consumption and promote recycling and use (e.g. grey water treatment systems); rainwater harvesting systems for new and existing housing, hotels and farms; water-efficient irrigation systems for the agriculture sector; decentralized storage; and use of small-scale renewable energy systems for water supply.

During this reporting period, the 305 households would have benefitted from the installations of water storage tanks at their homes. In addition, during 2019, there were water shortages island-wide, that occurred more frequently in hilly and rural areas, however these persons would have benefitted from having their own potable water supply at their houses. However, regarding the GCF funded portion of this activity, the procurement documents for the needs assessment of the potable and rainwater harvesting systems were developed during this reporting period. These were developed to include the critical comments from the GCF. The combined request for consultants to submit their expression of interest (EOI) to prepare an integrated needs assessment for the Water Storage Tank (WST) and the Rainwater Harvesting (RWH) Systems concluded in October and evaluations were conducted. In December a consultancy firm was selected after evaluation results were consolidated. Up until the end of December 2019 contract negotiations were ongoing. The procurement documents have detailed that the needs assessment is to provide information and identify the vulnerable persons and areas that can significantly benefit in their way of life from increased access to water through: Decentralization of water storage; and Increasing rainwater harvesting to promote diversification of water sourcing. In addition, as previously mentioned, the first presentation of a proposal for technical training and educational awareness was conducted to include building the technical capacity needed to do all the above. At the same time, it will also help to shape policies and legislation related to climate change; Raise greater awareness about climate variability and change; and Provide a platform of knowledge and resources to support further climate change adaptation in the Caribbean.

2.2.2 Paradigm shift potential

This Project, during the assessment, had attracted mixed views of the paradigm shift potential. Nonetheless, the CCCCC and the BWA has been working tirelessly to ensure that an increased paradigm shift potential can be realized through this Project as the Project interacts with various stakeholders. The Government of Barbados, led by the Prime Minister, produced a new National Energy Policy for the country that directly addresses a target for the reduction of GHG and Carbon Dioxide Emissions. This Barbados National Energy Policy (BNEP) 2019-2030 document is designed to ensure: “Energy security and affordability through diversity and collaboration: Establishing and maintaining a sustainable energy sector for Barbados.” and to achieve the 100% renewable energy and carbon neutral island- state transformational goals by 2030. These include:

- Provision of reliable, safe, affordable, sustainable, modern and climate friendly energy services to all residents and visitors.
- Zero domestic consumption of fossil fuels economy wide.
- Export of all hydrocarbons produced both on land and offshore.
- Maximising local participation (individual and corporate) in distributed renewable energy (RE) generation and storage (democratisation of energy).
- Minimise the outflow of foreign exchange.
- Creating a regional centre of excellence in RE research and development.

Thus far, this report focuses on the paradigm shift potential even though the preparation of procurement documents has led the BWA to better manage its resources by the implementation of the Non-Revenue Strategy, which was developed by this Project during the pre-approval stages. The GCF had noted in its initial assessment the need for “A carefully implemented NRW reduction programme, which will lead to tangible water savings, as a reliable way of stretching supplies; and the technical capacity of BWA and other relevant stakeholders will also be built as a component of this intervention, developing policies and regulations relating to how to operate potable water supply systems with a reduced carbon footprint and increased resilience to extreme events of the future that are likely to be exacerbated by climate change and variability.” As previously mentioned, the BWA then engaged a group from “Operators without Borders” for the water sector visit Barbados to assist the BWA with implementing the NRW strategy. To date, the Operators without Borders have given the BWA a roadmap on how they can go about achieving this and, the BWA has started to employ some of the methods suggested.

Noting that efforts are being made to tackle the problem of a limited water supply, the Minister of Energy and Water Resources pointed to an extended hours programme which has seen the Barbados Water Authority (BWA) trying to identify as many burst pipes across the country as possible and have them fixed. He however stressed that Barbadians must be more responsible in the way they utilise water. He later revealed that coming soon will be a major announcement with respect to Government’s policy on water tanks, and a move by the BWA to assist persons in paying for tanks who otherwise may struggle to own them. He meanwhile added that he is satisfied the BWA is doing all it can to address the problem of a low water supply, as “all possible options” are being explored, including efforts at water conservation, conducting repairs and sourcing additional water.

In addition, the BWA has fully implemented the 0.42MW solar photovoltaic system at the Bowmanston pumping station. When combined, these actions are directly in line with the expected paradigm shift given in the assessment, stating that “The proposed project aims to shift the water supply and use paradigm in Barbados to a more climate-resilient model not dependent on the grid and capable of better managing its resources through both supply and demand measures and regulatory and planning activities. This comprehensive approach addresses the key challenges and barriers identified, including weather threats, reduced precipitation, sea level rise, the high cost of desalination, lack of capacity, knowledge and sectoral planning, and behavioural aspects related to the use of water”. Moreover, after the 2018 change of government, the Ministry of Energy and the Ministry of Water was merged to give rise to the Ministry of Energy and Water Resources. This can be partly attributed to the threat that climate change has had on energy and water resources of Barbados and the fact that there needs to be serious action to address how Barbados continues to decrease its emissions and also to adapt to the changing climate.

The potential for scaling up and replication as mentioned in the comments are being realized in Barbados. For example, under this Project, the BWA completed the installation of 0.42 megawatts (MW) photovoltaic (PV) panels at the Bowmanstan Water Pumping Facility and upgraded their transformer and switchgear to accommodate up to 1.5MW of installed capacity. As previously indicated, their original contribution was increased to accommodate the GCF funded activities of the installation of 0.5 MW of PV panels at Bowmanston, Nationally, a 109KW solar photovoltaic system was installed at the Samuel Jackman Prescod Institute of Technology in Barbados. This renewable energy system was installed under the Government’s Public Sector Smart Energy Programme. The programme’s objective is to promote the use of renewable energy and energy efficiency in the public sector.

2.2.3 Sustainable development potential

The Project thus far has resulted in improved water management ((and reduced losses), a reduction of the water utility's energy costs along with increased reliability, and better overall water management. The NRW strategy for the BWA is currently being employed and sectors such as the agriculture have been increasing their own resilience as the BWA has started to engage the general public on water saving practices. The BWA and Ministry of Energy and Water Resources have given some advice to the Ministry of Agriculture and Food Security who in partnership with the Barbados Agricultural Development and Marketing Cooperation, developed a Farmers Empowerment and Enfranchisement Drive (FEED) programme to train farmers to enhance their skills on new technologies including temperature-controlled greenhouses and containers. This first group has 140 participants.

It should be noted that even though this is not a funded activity, the Project also aims to report on the indirect beneficiaries of the Project due to input that the Project may have on other sectors in Barbados. This is in line with the initial assessment from the GCF, which noted "Sectors such as agriculture, which are highly dependent on water resources and provide livelihoods to vulnerable populations, would be among the key beneficiaries in terms of increased resilience."

Another development that should be noted also is the generation of jobs. It should be noted that the BWA has employed three (3) engineers, since the inception of this Project, to directly work on the integration of the proposed systems at the pumping stations. Therefore, this is inline with the expectations that 30 technical jobs will be created. Thus a 10% realization of this goal in this reporting period. The assessment also provided comments on the water management. Through further research and planning the BWA is currently in the process of renegotiation and downscaling their requirements for desalination. This is a direct impact from the projections from this Project as with the storage tanks and rain water harvesting, Barbados is on a path with a roadmap for decentralised storage and therefore, increasing the independence of the most vulnerable in society to have access to clean water.

The NRW component of this Project has been viewed as critical to the success of the Project, albeit the NRW component for the replacement of the water mains is not a funded activity, based on the GCF's assessment it is noteworthy to mention key highlights of the mains replacement component within this Project. The GCF's assessment noted, "A proper NRW strategy encompasses a comprehensive approach evaluating the operational performance of the network, both technical and commercial functions." And that "that the NRW reduction will be achieved via the replacement of 16 km of mains, which will reduce leakage by about 0.03 MGD per km. However, addressing NRW in a water utility goes beyond just fixing leaking pipes." To date, 6.2km of mains were replaced representing 38.75% completion in this component. In addition, as aforementioned, the BWA is in the process of implementing the NRW strategy as outlined in the document prepared under this Project. In addition, the BWA is moving towards to reduce water losses, which can be considered as a lower cost water supply, thus providing stability to the current water tariff.

The developed procurement documents for the needs assessment of the water and rain water harvesting systems has encompassed the comments in the GCF's assessment which identifies that the harvesting of rainwater and storm-water specifically for the purposes of enhancing resilience will mitigate the adverse effects associated with localized flooding and waterlogging as well as the transport of sediments and nutrients into the near-shore marine environment; and also to reduce, at the household and farming level leakages that have the potential to improve the health and safety of the environment by reducing mosquito breeding sites and generally creating a cleaner environment.

2.2.4 Needs of the recipient

Currently, in the water sector, there is a need for increased access to potable water. The ability to have water available and the ability to supply or deliver water to the population, including the most vulnerable, remains a critical undertaking. Furthermore, the water-energy nexus remains critical, as energy is required to pump/deliver the water to individuals. As such, to maintain the current water tariff or to increase the efficiency of use of water, it is important to hybridize the supply of water with the generation of energy. Therefore, to increase the effectiveness of the mitigation actions against the anticipated impact on power generation of the solar photovoltaic systems, a hybrid system has been proposed that minimally uses the micro-turbine only to provide stability and use during emergency situations. This hybrid system is also designed to protect the GCF's investment and reduce against any grid instability that may result during storm events. This was taken into consideration as the GCF's assessment underscored that there could be some impact on the overall generation efficiency of PV systems as well as the number of sunshine hours and intensity of incident radiation due to projections of increasing storm events. In addition, as identified vulnerability assessments were utilized to develop the procurement documents, specifically the location and technical specifications for component one (1). It should also be noted that it has been identified that financial savings in terms of energy costs as a result of component one (1) should be realized. Moreover, the use of these financial savings have been drafted and incorporated into the draft charter of the RAFF. In addition, under the new International Monetary Fund (IMF) program, that the Government of Barbados is a now signatory, the IMF has restricted the ability of the Government of Barbados to accept any loans in a very ambitious attempt to reduce the high level of indebtedness of the country. Thus, the savings that will be injected into the RAFF, after its creation, will become critical to assist persons in Barbados who are keen on accessing funds for their various adaptation and mitigation actions against climate change.

The prediction of Drought for Barbados in 2019 has inevitably occurred, as Barbados is currently experiencing a drought event. To address the vulnerability of water scarcity at the household level and also to minimize this effect on the farmers, the needs assessment has been expanded to also include the needs of the farmers and to suggest methodologies/ practices that the farmers can employ. The terms of reference for the needs assessment, which is within component three (3), is expected to provide a water storage and rainwater capturing and reuse method to assist in achieving the aforementioned adaptation actions. The needs assessment and the projected plans for implementation thereafter encompass a system working in tandem to achieve a net increased efficiency of both water storage and rainwater harvesting, which can inevitably provide a solution to reduce the vulnerability of the most susceptible communities to extreme weather events.

2.2.5 Country Ownership

To address the activities for the current reporting period, the Government of Barbados has further increased the alignment of its priorities on climate change. The GCF's assessment indicated that "The proposed Project intervention is also aligned with many of the key objectives of the Barbados Growth and Development Strategy 2013–2020, including: reducing dependence on fossil fuels; ensuring environmental sustainability and combating." However, due to the engagement of various stakeholders and now with the merger of the Ministries of Energy and Water Resources, Barbados has now even accelerated its plan with ambitious reductions in the use of fossil fuels and resulting in a reduction in carbon dioxide and greenhouse gasses emissions. This Project has catalysed the Government of Barbados to recognize the importance of joining the fight against Climate Change. In the Caribbean, through the goals of projects such as this, 'Project Syndicate' a worldwide magazine has named Barbados an "Island of Climate Innovation". In addition, under this Project as a co-financing activity, Barbados has reduced its dependence on fossil fuels by 0.42 MW.

To further demonstrate the determination of Barbados in the fight against climate change, the Government of Barbados has subsequently appointed a Special Advisor to the Prime Minister on Climate Change issues and has also established a National Climate Change Committee with special focus on the energy, environment and water sectors *inter alia*. In addition, the Government of Barbados in 2015 previously pledged to achieve nationwide green house gas emissions of 44% by 2030, however, due to the potential outputs of this Project and other nationally endorsed projects, the Government of Barbados has now pledged in 2019 to achieve an island 100% free of fossil fuels by 2030, as outlined in its revised Nationally Determined Contributions. In addition, analogous with the GCF's initial assessment, relevant local policies have been considered in the design of specific activities such as potable water storage systems and rainwater harvesting procedures and the commitment of execution through the BWA contributes to ensuring that all interventions will be strongly coordinated with the national water sector policies and actions.

During this entire process from inception, an intervention from the Minister of Energy and Water Resources, the Government of Barbados has set the target of being free of fossil fuels by 2030 and has already started to put measures into place to achieve this goal. Moreover, this goal has now been moved up to Visionary Goal Number 1. The Project has advanced the procurement plans for the photovoltaic and micro-turbine system and also ensuring that the paradigm shift of reduced greenhouse gas emissions can be realized. In addition, at the United Nations General Assembly, the Prime Minister of Barbados reiterated that Barbados would be 100% fossil fuel free by 2030. This task has been realized by the fact that the key stakeholders of this Project have been using the platform provided by the GCF to propel the country forward and lead the way towards sustainable development and a cleaner future. The GCF's National Designated Authority for Barbados signed an agreement with the GCF's Director of County Programming Pa Ousman Jarji. This Project has indeed lead to a catalyst for paradigm shift in Barbados. Moreover, on April 1, 2019 Barbados began its phased ban on plastics entering the country for use in sale of goods or to complement sold items, rounding up to an almost total prohibition nine months later. The Minister for the Maritime Affairs and the Blue Economy tied the ban on plastics with Barbados' target of becoming a fossil-free nation by 2030. He also said "We want to be a country that when we speak to the world we speak to the world as an environmentally friendly destination."

The research arm of this Project has also been active as the partnerships under this Project have been very agile. Since the inception of this Project, the following related publications were made possible:

1. Utility Service User Partnership for Domestic Potable Water System Adoption in Barbados. World Environmental and Water Resources Congress 2019: Emerging and Innovative Technologies and International Perspectives. Reston, VA: American Society of Civil Engineers, 2019.
2. Necessary Paradigm Shifts to access UNFCCC – GCF funding for Water Utilities in the Caribbean. Caribbean Water and Wastewater Association, 27th CWWA Conference and Exhibition, Jamaica, 2018
3. Knowledge Exchange Activities for Sustainable Development in Communities of Barbados: Part I. Caribbean Water and Wastewater Association, 27th CWWA Conference and Exhibition, Jamaica. 2018
4. Community-Utility partnerships for water sector resilience in Barbados. Caribbean Water and Wastewater Association, 27th CWWA Conference and Exhibition, Jamaica, 2018
5. Resilience of the Barbados Water Sector: Utility Management Perspectives. Caribbean Water and Wastewater Association, 28th CWWA Annual Conference and Exhibition, St. Kitts & Nevis, 2019

2.2.6 Efficiency and Effectiveness

The GCF's assessment identified that the relationship between the components were less casual and more intimate. Component (1) is linked to Component two (2), where the establishment and operation of the RAFF will only become effective after the successful completion of Component one (1). The assessment noted, "Some of the interventions have financial returns for which instruments such as loans may have been appropriate. The Project, however, recycles the savings in energy costs through the RAFF, achieving further mitigation and adaptation impacts at the community and user level. This scheme is found to contribute to a sufficiently efficient use of GCF funds in terms of the climate change benefits generated." The CCCCC and BWA understand the importance that the cost savings will have to the country and how the combined activities can contribute to building the water sector's resilience to climate change. The installation of the 0.42MW at the Bowmanstan Pumping station has resulted in a theoretical displacement of 125.88 tCO₂eq using a displacement factor of 0.7906tCO₂eq/MWh with an average of ca. 2653.77 kWh of energy being produced per day at the Bowmanston Water Pumping Station.

The Non-Revenue Water (NRW) component was vital to the fulfilment of the conditions precedent for disbursement and the CCCCC and the BWA have been very intimately involved with the implementation of the NRW strategy at the BWA. The NRW strategy was completed in August 2018 and the BWA has been working very diligently to achieve some of the gaps identified. It has been noted that there will be some time needed to fully implement the NRW strategy however, the following enabling activities have been conducted by the BWA: there has been a replacement of 90,000 customer meters out of 116,000 with ultra-sonic smart meters that are geo-referenced. To date 28 production meters at pumping and re-pumping stations have been installed. According to the BWA, the remainder will have been installed by the end of 2019. A system has been installed and is being used to monitor day-to-day operations of the pumps and reservoir levels. A SCADA Control Room has been set up and is operational. A start has been made on setting up on District Metered Areas (DMAs) island-wide and proving their integrity using new logging and detection equipment. To date, there are 3 established and completed DMAs, a further 2 requiring bulk water meters and 2 more that are almost complete with respect to locating boundaries and geo-referencing valves. A customised Utility Customer Information System (UCIS) is being installed by a contractor which went live in February 2017 and was completed and handed over in May 2019. BWA has hired a GIS specialist and does have GIS, the ESRI Arc Enterprise suite which is being implemented. Hydraulic Network Modelling: BWA acquired the WaterGEMS hydraulic modelling software and has had training on its use. A hydraulic network model was developed. In addition to this a NRW Unit was set up in 2018 to become a focal point for tackling Non-Revenue Water. One of the functions of the Unit is to conduct leakage detection activities. There has been some public education and outreach on NRW through the BWA website.

Consonant with the GCF assessment, the CCCCC and BWA are ensuring that the experience of BWA has been employed in the development of procurement documents that will guide the implementation of the water tanks and complementary pumps. Since the programme started BWA has modified the design of the system to make it more efficient. One of the major modifications was implementing a more efficient pump with the water tank. In addition, the needs assessment for the potable water tanks and rain water harvesting systems have been integrated to provide a national holistic approach to providing additional storage and harvesting capacity for the country.

Memoranda of Understanding were successfully executed between the BWA and the University of South Florida (USF) and the University of the West Indies (UWI), this is one of the completed outputs under component 4.1.1. The knowledge management activities have begun under component 4.1, which will also provide the foundation for the educational materials that are to be created for the engagement with the general public. In addition, one Masters research student with the UWI Centre for Resource Management and Environmental Studies (CERMES) is conducting research on project components to contribute knowledge on lessons learnt on climate resilient smart utilities, therefore contributing to the on-going status of component 4.1.2, and is being directly supervised by the project team.

2.3 PROJECT OUTPUTS IMPLEMENTATION STATUS ³			
Project Output	Project Activity	Status ⁴	Implementation progress ⁵ (%)
Output 1 Photovoltaic Renewable Energy Systems with Back-up Natural Gas turbines Installed and Integrated	Project Activity 1.1.1 Design, Purchase and Installation of 2.0 MW Grid-tied PV Switchgear, Transformer, and a 2.0 MW Microturbine (Natural Gas) at Belle Pumping Station	<i>Activity Started - progress delayed</i>	10%
	Bidding documents are being development including the procurement inputs such as the technical specifications and engineering concept designs for the PV systems, both of which have been drafted, as well as the implementation schedule and Engineers' estimates. The application for PV construction permission for the Belle Pumping Station was endorsed by the TCP has been approved and the formal documentation is being awaited by the BWA after it has been completed. This is awaiting verification of Crown ownership to proceed.	Bidding documents issued by Lot for the power system at the Belle Pumping Station; EPC contract signed with selected bidder; and Commencement of the implementation of activity anticipated by Q3 of 2020	
	Project Activity 1.1.2.1 Design, Purchase and Installation of 0.5 MW Grid-tied PV (solar) plant at Bowmanston Pumping Station	<i>Activity Started - progress delayed</i>	10%
	Bidding documents are being development including the procurement inputs such as the technical specifications and engineering concept designs for the PV systems, both of which have been drafted, as well as the implementation schedule and Engineers' estimates. The application for PV construction permission for the Bowmanston Pumping Station was endorsed by the TCP has been approved and the formal documentation is being awaited by the BWA after it has been completed. This is awaiting verification of Crown ownership to proceed.	Bidding documents issued by Lot for the power system at the Bowmanston Pumping Station; and EPC contract signed with selected bidder	
	Project Activity 1.1.2.2 Design, Purchase and Installation of 0.4 MW Grid-tied PV (solar) plant at Bowmanston Pumping Station.	<i>Completed</i>	95%

³ Outputs and Activities reported here should be aligned with the Activities in the Logic Framework and Implementation Timetable of the project.

⁴ Activity Not Yet Due; Activity Started -ahead of schedule; Activity started – progress on track; Activity started but progress delayed; Activity start is delayed.

⁵ Implementation progress on a cumulative basis as of the date of the report. Bidding docs under preparation = 10%; Procurement Process in progress = 15% and Contract Signature = 20%

2.3 PROJECT OUTPUTS IMPLEMENTATION STATUS ³			
Project Output	Project Activity	Status ⁴	Implementation progress ⁵ (%)
	<p>The installation of the 0.42MW at the Bowmanstan Pumping station has resulted in a theoretical displacement of 125.88 tCO₂eq using a displacement factor of 0.7906tCO₂eq/MWh with an average of ca. 2653.77 kWh (actual based on production metering) of energy being produced per day at the Bowmanston Water Pumping Station.</p> <p>Issue: Although the BWA has been able to meter the amount of energy being produced by the installed photovoltaic system, the BWA is unable to determine how much electricity is being fed to the grid. This is due to a delay by the Barbados Light and Power on the metering of the system.</p> <p>Lessons-learned (i) Need to ensure that the PVs can function independently from the grid in case of power outage; and (ii) a meter to measure how much energy is being generated by the PV and received by the grid or the respective pumping stations. Note, energy to be produced by GCF funded activities is to be used directly by the respective pumping stations.</p>	BWA to acquire a practical completion certificate and metered energy received by the BL&P.	
	Project Activity 1.1.3 Design, Purchase and Installation of 2.0 MW Grid-tied PV (solar), Switchgear (HT & LT) and Transformer at Hampton Pumping Station.	<i>Activity Started - progress delayed</i>	10%
	<p>Bidding documents are being development including the procurement inputs such as the technical specifications and engineering concept designs for the PV systems, both of which have been drafted, as well as the implementation schedule and Engineers' estimates.</p> <p>The BWA and Armag farms are in the final stages of finalizing their agreement and it should be signed during the next reporting period. This has now reached a state of mutual acceptance by both parties.</p> <p>Additionally, no micro turbine was budgeted for Hampton Pumping Station however it is anticipated that the current budget can supply a micro turbine at both Belle and Hampton Pumping Stations with a combined output of 2MW.</p>	Bidding documents issued by Lot for the power system at the Hampton Pumping Station; and EPC contract signed with selected bidder.	
Output 2 Establishing Revolving	Project Activity 2.1.1 Establish fund administration	<i>Activity Not Yet Due</i>	0%

2.3 PROJECT OUTPUTS IMPLEMENTATION STATUS ³				
Project Output	Project Activity	Status ⁴	Implementation progress ⁵ (%)	
Adaptation Fund Facility (RAFF)	This Component is to be implemented by the BWA however it is dependent on Component 1 activities			
	Project Activity 2.1.2 Establish MOUs, protocols and guidelines for the fund	Activity Started - progress on track	15%	
	Although a BWA-specific activity, the CCCCC is assisting BWA with this activity through the provision of the funds under its USAID CCAP Project to hire a Consultant to review and revise the draft RAFF Charter and to prepare the Operations Manual for the RAFF. Consequently, the call for a consultant for this activity has been advertised.	Consultant selected and contracted in Q1 of 2020; and The Charter is updated and Operations Manual for the RAFF prepared.		
	Project Activity 2.1.3 Open Bank Account(s)	Activity Not Yet Due	0%	
	This is a BWA-specific activity however, it is dependent on the operationalization of Component 1 activities.	N/A		
Output 3 Building Resilience to Climate Change and Disruptions in Water Supply	Project Activity 3.1.1 Development of Climate Change Adaptation Water Master Plan.	Activity Started - progress delayed	15%	
	Advertisement published and negotiations with selected contractor on costs to conduct the activity	Contract signed by Q1		
	Project Activity 3.2.1 Replacing defective mains	Activity Started - progress on track	38.75%	
	To date, approximately 6.2 kilometres (km) of water mains have been replaced, representing 38.75% completion in this component, and the Barbados Water Authority has adopted the Non-Revenue Strategy developed under this Project.	4km of mains replaced.		
	Project Activity 3.3.1.1 Developing real time decision making tool	Activity Started -	10%	

2.3 PROJECT OUTPUTS IMPLEMENTATION STATUS ³			
Project Output	Project Activity	Status ⁴	Implementation progress ⁵ (%)
		<i>progress delayed</i>	
	<p>Draft specifications for the OPTIRAMP were provided by the BWA.</p> <p>Notwithstanding, the BWA is currently negotiating the terms that are to be associated with the licences for the software. The result of these negotiations will inform the way forward for the project team. Nonetheless, given that the SCADA system is needed first in order for the OPTIRAMP to be fully operational, the BWA has verbally requested that the OPTIRAMP funds be used to fully implement the SCADA system. This is a more practical move, as a fully functioning OPTIRAMP is dependent on an operational SCADA system</p>	5Cs to formally request change in activity from GCF following request from BWA; and Commence procurement activity for software	
	Project Activity 3.3.1.2 Developing real time decision making tool (leak detection equipment)	<i>Activity Started - progress on track</i>	10%
	Leak detection equipment Terms of Reference were drafted.	Publishing of tender documents and selection of supplier	
	Project Activity 3.4.1.1 Execution of Needs Assessment and Installation of Potable Water Storage Systems	<i>Activity Started - progress on track</i>	(e.g. 15%)
	<p>A combined consultancy for the Needs Assessment for the Potable Water Storage Tanks and the Rain Water Harvesting Systems is proposed as this would a more efficient procurement process. Furthermore, this may allow for the flow and management of the successive tasks, which include the purchase of the rainwater harvesting systems. Accordingly, at the close of the reporting period, the procurement process for the consultant to undertake the integrated needs assessment was underway.</p> <p>Additionally, the specifications for the Personal Tank Programme (PTP) is being sourced to have all the technical inputs to inform the procurement process</p> <p>The Invitation to supply the vehicle tankers were published and a sole bid was received and evaluated.</p>	<p>Selection and hiring of the Needs Assessment consultant in Q1 of 2020;</p> <p>Needs assessment for Potable water tank programme completed by Q4 of 2020;</p> <p>Re-tender of the vehicle tankers activity in Q1 of 2020 and completion of the delivery of tankers in Q4;</p>	

2.3 PROJECT OUTPUTS IMPLEMENTATION STATUS ³			
Project Output	Project Activity	Status ⁴	Implementation progress ⁵ (%)
	<p>However, the bid was deemed to not meet the required specifications, therefore, this activity will have to be retendered.</p> <p>The procurement for the tank identified for the Queen Elizabeth Hospital will be initiated based on the standards of the World Health Organization which in essence is the validation for the QEH's storage needs.</p> <p>The procurement for the tank for the schools, polyclinic and personal tanks will be initiated following the recommendations from the Integrated Needs Assessment.</p> <p>Lessons Learned: A holistic approach for the Potable water storage tanks and rainwater harvesting is a more realistic approach for this assessment as there may be an overlap in data gathering and analysis tasks.</p>	<p>Installed tank at the QEH by Q4 of 2020; and</p> <p>Procurement processed launched by Q4 for the personal tanks and tanks at schools and polyclinics</p>	
	<p>Project Activity 3.4.1.2 Installation of Potable Water Storage Systems</p>	<p>Activity Started - progress on track</p>	<p>49%</p>
	<p>The BWA has installed 305 households potable water storage systems. This activity will continue and larger tanks that service DMAs will be retrofitted.</p> <p>Lessons Learned: Ensure that households are able to accommodate electrical upgrades.</p>	<p>An updated Personal Tank programme at the BWA.</p>	
	<p>Project Activity 3.5.1 Installation of Rainwater Harvesting (RWH) Systems at Public Facilities (Schools, Community Centres), Farms and Private Homes</p>	<p>Activity Started - progress on track</p>	<p>15%</p>
	<p>A combined consultancy to include the Needs Assessment for the Rainwater Harvesting Systems is proposed as this would a more efficient procurement process. Accordingly, at the close of the reporting period, the procurement process for the consultant to undertake the integrated needs assessment was underway</p> <p>The procurement process for the RWH systems at public facilities, farms and homes will be initiated following the recommendations from the Integrated Needs Assessment.</p> <p>Lessons Learned: A holistic approach for the Potable water storage tanks and rainwater harvesting is a more realistic approach for this assessment as there may be an overlap in data gathering and analysis tasks.</p>	<p>Preparation and submission of RWH design to Town and Country Planning for approval; and</p> <p>Procurement processed launched by Q4 for RWH systems at public facilities, farms and homes.</p>	

2.3 PROJECT OUTPUTS IMPLEMENTATION STATUS ³			
Project Output	Project Activity	Status ⁴	Implementation progress ⁵ (%)
	Project Activity 3.5.2 Retrofitting of infiltration (suck) wells	Activity Not Yet Due	0%
	This activity is to be initiated in the second quarter of 2021.	Preparation of the technical inputs to inform the bidding process.	
	Project Activity 3.5.3 Develop a groundwater model for Barbados	Activity Not Yet Due	%
	This activity is to be initiated in the second quarter of 2021.	Preparation of the Terms of Reference and other technical inputs to inform the bidding process	
Output 4 Personnel trained and certified, Public Awareness Campaign and Policies for water sector resilience and PPPs in Barbados	Project Activity 4.1.1 Develop educational materials and a mechanism that builds BWA and local capacity for climate resilient decisions and climate proofing its existing infrastructures, sustainability, stakeholder and gender, and risk reduction and safety	Activity Started - progress on track	15%
	Framework Agreement in place with USF covering the intended engagement modality spanning the life of the Project. Fully executed contract in place with USF for the delivery of the KM areas of the Project for 2019. The Call for the Communications Consultant to develop the communications strategy, develop educational and promotional materials and workshops to test the materials was launched	2020 contract signed with USF for the delivery of the KM for the Project; Communications Consultant hired by Q1 of 2020; Strategy and materials developed and tested by end of Q3 of 2020	
	Project Activity 4.1.2 Provide theoretical as well as practical training related to the installation, operation, maintenance and monitoring of photovoltaic systems, leak detection technology and techniques, water storage systems and rainwater harvesting	Activity Started - progress on track	(e.g. 15%)
	On-going discussions with UWI-IGDS for their engagement for the Gender and Infrastructure Programme. At the close of the reporting period, draft contract was under review by UWI-IGDS.	Contract signed with UWI-IGDS by Q1 of 2020; 250 BWA employees and relevant stakeholders	

2.3 PROJECT OUTPUTS IMPLEMENTATION STATUS ³			
Project Output	Project Activity	Status ⁴	Implementation progress ⁵ (%)
	ENVISION Credentialing Workshop held and more than 70% of the persons whom participated in the workshop has received their certification. CCORAL tool has undergone updating during the report period. .	trained on gender; and 25 BWA and other relevant stakeholders become ENVISION certified ISO 45001 undertaken by end of Q3 of 2020 PV Monitoring Training by Q4 of 2020	
	<i>Project Activity 4.2.1 Share lessons learnt to spur greater public and entrepreneurial involvement in climate change adaptation and mitigation in the water sector resilience initiatives.</i>	<i>Activity Started - progress on track</i>	10%
	Terms of Reference will be developed for the hiring of a consultant to lead workshops, collect data, characterize water sector resilience in Barbados and create material for use at outreach events at schools (at least 6/year). Events will be planned for World Water Day 2020 with promotional items distributed.	Materials created for signage and outreach activities. World Water Day events in 2020 in line with its theme	
	<i>Project Activity 4.2.2 Promote and encourage the public to utilize RAFF and take action to mitigate and adapt to climate variability and change</i>	<i>Activity Started - progress on track</i>	15%
	As part of the deliverables for the Communications Consultant, a short video will be developed to promote the RAFF and action to mitigate and adapt to climate variability and change.	Consultant selected and contracted; At least one video produced; and At least one TV/Radio/Newspaper Advertisement.	
	<i>Project Activity 4.3.1 Develop a policy for Barbados' water sector resilience to combat climate change</i>	<i>Activity Not Yet Due</i>	0%
	This activity is to be initiated in the last quarter of next year.	Terms of Reference developed for activity	
	<i>Project Activity 4.3.2 Develop a policy for Public Private Partnership (PPP) to combat climate change.</i>	<i>Activity Not Yet Due</i>	0%
	This activity is to be initiated in the last quarter of next year.	Terms of Reference developed for this activity.	

2.4 PROGRESS UPDATE ON THE LOGIC FRAMEWORK INDICATORS ⁶					
2.4.1 PROGRESS UPDATE ON FUND-LEVEL IMPACT INDICATORS OF THE LOGIC FRAMEWORK					
<i>Fund-level impact Core indicators⁷ (Mitigation)</i>	<i>Baseline</i>	<i>Current value⁸</i>	<i>Target (mid-term)</i>	<i>Target (final)</i>	<i>Remarks (including changes⁹, if any)</i>
<p><i>Mitigation Core Indicator 1</i></p> <p><i>M1.0 Reduced emissions through increased low emission energy access and power generation</i></p> <p><i>Tonnes of carbon dioxide equivalent (tCO₂eq) reduced or avoided as a result of Fund funded projects / programmes.</i></p>	<p><i>Annual</i></p> <p>0</p>	<p><i>Annual</i></p> <p>0</p> <p>Cofinancing [755.22 tCO₂eq]</p>	<p><i>Annual</i></p> <p>7,339.46 tCO₂eq</p> <p>Cofinancing [755.22 tCO₂eq]</p>	<p><i>Annual</i></p> <p>7,339.46 tCO₂eq</p> <p>Cofinancing [755.22 tCO₂eq]</p>	<p>Medium term is up to 2033. Useful life of the PV systems is 30 years. Displacement factor is 0.7906tCO₂eq/MWh.</p>
	<p><i>Lifetime</i></p> <p>0</p>	<p><i>Lifetime</i></p> <p>0</p> <p>Cofinancing 18,880.5 tCO₂eq]</p>	<p><i>Lifetime</i></p> <p>733,94 tCO₂eq</p> <p>Cofinancing [9,441 tCO₂eq]</p>	<p><i>Lifetime</i></p> <p>220,184 tCO₂eq</p> <p>Cofinancing 18,880.5 tCO₂eq]</p>	<p>Medium term is up to 2033. Useful life of the PV systems is 30 years. Displacement factor is 0.7906tCO₂eq/MWh.</p>

⁶ Per the approved methodology in and the Logic Framework in the Funding Proposal, please provide an update on the relevant indicators.

⁷ As per the relevant indicators established in the Funding Proposal and the Performance Measurement Framework, including all indicators approved by the Board and relevant updates agreed with GCF, if applicable.

⁸ As of 31 December of the relevant year.

⁹ Related to the approved indicators and targets in the Logic Framework.

Fund-level impact indicators¹⁰ (Adaptation)	Baseline	Current value¹¹	Target (mid-term)	Target (final)	Remarks (including changes¹², if any)
<p>Adaptation Core Indicator A1.0</p> <p><i>A1.0 Increased resilience and enhanced livelihoods of the most vulnerable people, communities and regions.</i></p> <p>Direct Beneficiaries</p>	<p>Total direct beneficiaries</p> <p>145 (49% female)</p>	<p>Total direct beneficiaries</p> <p>18,134 (50.3% female)</p>	<p>Total direct beneficiaries</p> <p>94,501 (20% female)</p>	<p>Total direct beneficiaries</p> <p>189,002 (34.6% female)</p>	<p>The direct beneficiaries of this component are those persons that directly consume water produced at the Bowmanston Pumping Stations (BPS) as well as persons who will be directly employed to manage and implement the project and BWA's employees who will be in charge with maintaining the infrastructure implemented by the Project. The BPS serves approximately 38218 persons, which is approximately 13.4% of the population.</p> <p>The direct beneficiaries (c.a) are distributed as follows: Bowmanston Pumping Station 17,198 (based on % installed capacity and emergency back-up microturbine)</p> <p>Employees at BPS 52 (15.4% female)</p> <p>Under the Personal Tank Programme at least 10% (1,300 households) of the total 13,000 households with physically challenged person(s) or differently abled individuals will benefit from the personal water tanks. Personal Tank Programme: 884 (based on installed tanks)</p> <p>Under this programme, Barbados' only hospital will also benefit by having increased water storage from 14 hours to between 72 to 96 hours. This activity is to be implemented during the next reporting period.</p>
<p>Adaptation Core Indicator A1.0</p> <p>Indirect Beneficiaries</p>	<p>Total indirect beneficiaries</p> <p>290 (49% female)</p>	<p>Total indirect beneficiaries (% of female)</p> <p>3,320 (49.4% female)</p>	<p>Total indirect beneficiaries (% of female)</p> <p>142,498 (50.4% female)</p>	<p>Total indirect beneficiaries (% of female)</p> <p>284,996 (50.4% female)</p>	<p>Beyond the direct beneficiaries, the implications of the Project are far reaching and crosscutting. It will benefit the agriculture sector and tourism sector by increasing the amount of water available to the public. There is also the multiplier effect associated with the injection of capital and the increase</p>

¹⁰ As per the relevant indicators established in the Funding Proposal and the Performance Measurement Framework, including relevant updates agreed with GCF, if applicable.

¹¹ As of 31 December of the relevant year.

¹² Related to the approved indicators and targets in the Logic Framework.

Fund-level impact indicators¹⁰ (Adaptation)	Baseline	Current value¹¹	Target (mid-term)	Target (final)	Remarks (including changes¹², if any)
					<p>employment associated labour income. Furthermore, there will be the reduced demand for foreign exchange, which will help to create an investor friendly environment.</p> <p>Rural Farmers that benefit from BPS: 46% (installed capacity) of 722 total Assumption, 1 farmer supplies food to 10 individuals Sharing of water from PTP during water shut off =200% of 50 installed tanks</p>
Number of total beneficiaries relative to total population	<p>Total beneficiaries 435</p> <p>Number of Total Population 0.1%</p> <p>Year: 2017</p>	<p>Total beneficiaries 21,454</p> <p>Number of Total Population 7.5%</p> <p>Year: 2019</p>	<p>Total beneficiaries 142,498</p> <p>Number of Total Population 50%</p> <p>Year: 2021</p>	<p>Total beneficiaries 284,996</p> <p>Number of Total Population 284,996</p> <p>Year: 2024</p>	<p>These benefits coupled with the size of Barbados and the integrated economic system that exists causes the indirect benefits to extend to the entire population of Barbados. Barbados' population is estimated at 284,996.</p>
<p>Adaptation Impact Indicator A1.0 Increased resilience and enhanced livelihoods of the most vulnerable people, communities and regions</p> <p>-Number of individuals/households (disaggregation by male and female) adopting climate-resilient livelihood options</p>	<p>50 vulnerable households with personal tanks [through the personal tank programme (PTP)].</p>	<p>Co-financing 305 Vulnerable households with storage tanks.</p>	<p>500 Vulnerable households with storage tanks. 2500 (50% male and 50% females) individuals, benefit from Rainwater Harvesting Systems (RHS) and PTP.</p>	<p>1,500 Vulnerable households with storage tanks 5500 (50% male and 50% females) individuals, children, benefit from RHS and PTP.</p>	<p>The current value for the PTP has been successfully achieved, and the Project is on track to achieve the mid-term target. Participation and implementation of programme of action or suggested improvements discussed at the workshop.</p>
<p>Adaptation Impact Indicator A2.0 A2.0 Increased resilience of health and well-being, and food and water security</p> <p>- Number of health institutions (number patients-disaggregate by male and female and adult and children) benefiting from introduced climate resilience water supply to the health sector.</p> <p>-Number of Individuals/Households/Entities (disaggregated by males and females) with year-round access to reliable and safe water supply</p>	<p>Hospital, and polyclinics have limited storage capacity</p> <p>10,000 households somewhat resilient to climate</p>	<p>0</p> <p>10,305 households somewhat resilient to climate shocks</p>	<p>1 hospital and 9 polyclinics retrofitted with storage tanks or RWH</p> <p>120,000 individuals will be made resilience to</p>	<p>1 hospital and 9 polyclinics retrofitted with storage tanks or RWH</p> <p>By 2023, at least 189,000 individuals will be made resilience to</p>	<p>Stable economic environment.</p> <p>Cost per unit of electricity is US\$0.38.</p> <p>RHS efforts do not compete with BWA but complements its operations.</p> <p>Public education and capacity building spur job market for RWH</p>

Fund-level impact indicators¹⁰ (Adaptation)	Baseline	Current value¹¹	Target (mid-term)	Target (final)	Remarks (including changes¹², if any)
<p><i>despite climate shocks and stresses</i></p> <p><i>-Number of farm/farmers made climate- resilient/food-secure</i></p>	<p>shocks and stresses (estimated).</p> <p>Limited rainwater harvesting on farms serving multiple farmers</p>	<p>and stresses (estimated). (which includes 305 Vulnerable households with storage tanks)</p> <p>0</p>	<p>climate shocks and stresses.</p> <p>40 Farmers utilizing harvested rainwater for irrigation</p>	<p>climate shocks and stresses.</p> <p>120 Farmers utilizing harvested rainwater for irrigation</p>	

2.4.2 PROGRESS UPDATE ON PROJECT/PROGRAMME LEVEL INDICATORS OF THE LOGIC FRAMEWORK¹³					
Project/Programme indicators (Mitigation/Adaptation)	Baseline	Current value¹⁴	Target (mid-term)	Target (final)	Remarks (including changes¹⁵, if any)
Indicator M6.0 6.0 Mitigation: Increased number of small, medium and large low-emission power suppliers					
Indicator 1 (Output level) Output 1.1 - Photovoltaic Renewable Energy Systems with Back-up Natural Gas turbines Installed and Integrated					Systems will operate at their capacity and function al into the long-run (30 years).
Indicator M6.3a 6.3a Percentage of water systems equipped with climate resilient low emission energy systems.	0	6%	25% of water systems equipped with climate resilient low emission energy systems.	54% of water systems equipped with climate resilient low emission energy systems.	The BPS serves approximately 38218 persons, which is approximately 13.4% of the population. 45% of capacity installed to support the BPS.
Indicator M6.3b 6.3b MWs of low emission energy capacity installed.	<i>Annual</i> 0 <i>Lifetime</i> 0	<i>Annual</i> 0 MW Cofinancing 0.42 MW <i>Lifetime</i> 0 Cofinancing 0.42 MW	<i>Annual</i> 6.5 MW Cofinancing 0.42 MW <i>Lifetime</i> 6.5 MW Cofinancing 0.42 MW	<i>Annual</i> 6.5 MW Cofinancing 0.42 MW <i>Lifetime</i> 6.5 MW Cofinancing 0.42 MW	Medium term is up to 2030. 5.5 sunshine hours per day. Energy to be displaced by solar 9,283.4 1MWh per year for 30 years.
Indicator A5.0 Adaptation A5.0 Adaptation: <i>Strengthened institutional and regulatory systems for climate-responsive planning and development</i>					
Indicator A5.0 (Output level) Output 2.1 - Revolving Fund Established Output 4.3 - Policies for Water Sector Resilience and Public-Private-Partnership (PPP) Created.	No micro-adaptation and mitigation funding limited legislation exist	No micro-adaptation and mitigation funding limited legislation exist	A Bank account opened and funded. 1 desk review 1 policy paper	A Bank account opened and funded. 25 persons benefited from the fund.	Terms and conditions will be agreeable for all parties. The Public will see the benefit of such and utilities the RAFF. Mid-term is 2021 Q3.

¹³ As per the relevant indicators established in the Funding Proposal and the Performance Measurement Framework, including relevant updates agreed with GCF, if applicable.

¹⁴ As of 31 December of the relevant calendar year.

¹⁵ Related to the approved indicators and targets in the Logic Framework or relevant FAA.

2.4.2 PROGRESS UPDATE ON PROJECT/PROGRAMME LEVEL INDICATORS OF THE LOGIC FRAMEWORK¹³					
Project/Programme indicators (Mitigation/Adaptation)	Baseline	Current value¹⁴	Target (mid-term)	Target (final)	Remarks (including changes¹⁵, if any)
			5 workshops/ seminars /working group meetings		
<p>Indicator 5.1</p> <p><i>Institutions and regulatory systems that improve incentives for climate resilience and their effective implementation.</i></p> <p><i>Indicator 5.2 Number and level of effective coordination mechanisms</i></p>	0	0	RAFF established.	RAFF fully operationalized.	<p>The means of verification remains as RAFF reports and audits and as Project reports, Register of workshop attendees, policy produced. Engagement with stakeholders are properly planned and implemented. This activity is not yet due. The framework agreement had the following:</p> <p>5.1. Institutions and regulatory systems that improve incentives for climate resilience and their effective implementation.</p> <p>5.2 Number and level of effective coordination mechanisms.</p> <p>However, under the approved GCF changes as a result of GCF/B.22/07, this indicator has been updated to be congruent with this decision.</p>
	0	0	0 Policy Papers produced	2 Policy Papers produced	
<p>Indicator A6.0 (Outcome level) Adaptation</p> <p>6.0 Increased generation and use of climate information in decision-making</p>		0			
<p>Indicator 6 (Output level)</p> <p>-Output 3.1- Climate Change Adaptation Water Master Plan Completed</p> <p>-Output 3.3 - Real Time Decision Making Tool Implemented</p>	0	No Water Master Plan exists with CCA	No Water Master Plan exists with CCA	1 groundwater model (GWM)	<p>Favourable conditions for data gathering, research and knowledge sharing and mains replacement</p>
	0	SCADA hardware installed. Software licences/permissions need to be expanded.	1 Optiramp installed and linked with SCADA & other data	1 Optiramp installed and linked with SCADA & other data	
<p>Indicator 6.1</p> <p><i>Number of effective climate information products /services for decision making in climate sensitive sectors developed, delivered and used..</i></p>	0	Optiramp demonstration tool installed.	Water Master Plan created.	Water Master Plan, Optiramp tool, CCORAL and GWM used in the development of adaptation initiatives (Concept or Full Projects).	<p>The framework agreement had the following:</p> <p>6.1 Number of effective climate information products /services for decision making in climate sensitive sectors</p>

2.4.2 PROGRESS UPDATE ON PROJECT/PROGRAMME LEVEL INDICATORS OF THE LOGIC FRAMEWORK¹³					
Project/Programme indicators (Mitigation/Adaptation)	Baseline	Current value¹⁴	Target (mid-term)	Target (final)	Remarks (including changes¹⁵, if any)
	0	0	BWA and other stakeholders trained to use CCORAL	Persons engages in the development of adaptation initiatives (Concept or Full Projects).	developed, delivered and used. However, under the approved GCF changes as a result of GCF/B.22/07, this indicator has been updated to be congruent with this decision. BWA data is readily accessible
Indicator A7.0 (Outcome level) Adaptation A7.0 Strengthened adaptive capacity and reduced exposure to climate risks				1 Needs assessment	
Indicator 7 (Output level) Output 3.2: 16 km of Mains Replaced Output 3.4: Potable Water Storage Systems Installed Output 3.5 - Rainwater Harvesting Programme Implemented	0 50 0	6.2km of mains replaced 0 0	5 km of main replaced 1 Needs assessment, 1 hospital, 9 polyclinics, 16 schools, and 500 vulnerable residences retrofitted with storage tanks Tanks and Tanker Capacity increased by 150M ³ 1 Needs Assessment 22 Schools, 20 community centers 2 Rainwater Harvesting Ponds for farms 0 infiltration (suck) wells retrofitted 0 groundwater model	16 km of mains replaced 1 Needs assessment, 1 hospital, 9 polyclinics, 16 schools, and 1500 vulnerable residences retrofitted with storage tanks Tanks and Tanker Capacity increased by 250M ³ 1 Needs Assessment 800 homes, 22 schools, 20 community centers and 121 Farmers with Rainwater Harvesting Systems (ponds and rooftop) 22 infiltration (suck) wells retrofitted 1 groundwater model	Population growth, 0.37%

2.4.2 PROGRESS UPDATE ON PROJECT/PROGRAMME LEVEL INDICATORS OF THE LOGIC FRAMEWORK¹³					
Project/Programme indicators (Mitigation/Adaptation)	Baseline	Current value¹⁴	Target (mid-term)	Target (final)	Remarks (including changes¹⁵, if any)
<p>Indicator 7.1 7.1 Number of households, communities, businesses and public-sector services of Fund supported tools, instruments, strategies and activities to respond to climate change and variability vulnerable</p> <p>7.2: Number of individuals/household (disaggregated by males and females) reached by [or total geographic coverage of] climate related early warning systems and other risk reduction measures established/strengthened</p>	<p>100% of water production and distribution is vulnerable to storms/hurricanes.</p> <p>36% of NRW (30MGD) is leakage.</p>	<p>100% of water production and distribution is vulnerable to storms/hurricanes.</p> <p>35.8% of NRW (30MGD) is leakage.</p> <p>Estimated reduction of 0.186MGD due to replacement of 6.2km of water mains.</p>	<p>40% of water production and distribution will not be affected by a storm/ hurricane</p> <p>RW reduction of 0.15MGD</p> <p>5% increase in water available to the public including rainwater harvesting (water security)</p> <p>600 Personal Tanks and Rainwater Harvesting Systems installed</p>	<p>60% of water production and distribution will not be affected by a storm/ hurricane</p> <p>Reduce NRW by 0.48MGD</p> <p>15% increase in water available to the public including rainwater harvesting (water security)</p> <p>1,500 Personal Tanks and Rainwater Harvesting Systems installed</p>	<p>Rainwater Harvesting efforts do not compete with BWA but complement its operations</p> <p>0.03MGD is lost per km of distribution piping but conservative estimate of 0.02MG per day is used to set target.</p> <p>The framework agreement had the following: 7.1 Number of households, communities, businesses and public-sector services of Fund supported tools, instruments, strategies and activities to respond to climate change and variability vulnerable. and 7.2 Number of individuals/household (disaggregated by males and females) reached by [or total geographic coverage of] climate related early warning systems and other risk reduction measures established/strengthened However, under the approved GCF changes as a result of GCF/B.22/07, this indicator has been updated to be congruent with this decision.</p>
<p>Indicator A8.0 (Outcome level) Adaptation 8.0 Strengthened awareness of climate threats and risk-reduction processes</p>					
<p>Indicator A8.0 (Output level)</p>	0	0			Willingness and ability of people to participate in events

2.4.2 PROGRESS UPDATE ON PROJECT/PROGRAMME LEVEL INDICATORS OF THE LOGIC FRAMEWORK¹³					
Project/Programme indicators (Mitigation/Adaptation)	Baseline	Current value¹⁴	Target (mid-term)	Target (final)	Remarks (including changes¹⁵, if any)
Output 4.1 - Personnel Trained and Certified	0	21 BWA and partners ENVISION certified	250 BWA staff trained with ISO 45001	500 BWA staff trained with ISO 45001	
	0	0	25 BWA and partners ENVISION certified	25 BWA and partners ENVISION certified	
	0	4 Community workshops/training 60 participants	250 BWA staff trained on gender	500 BWA staff trained on gender	
	0	0	11 Community workshops/training 50 persons trained	33 Community Workshops/ training 100 persons trained	
	0	0	1 CCORAL workshop (BWA & key stakeholders)	1 CCORAL workshop (BWA & key stakeholders)	
	0	0	25 BWA staff trained in Climate Change installation and maintenance of PV systems (CARIPITA).	25 BWA staff trained in Climate Change installation and maintenance of PV systems (CARIPITA).	
	0	0	5 BWA staff receive advanced PV international certification	5 BWA staff receive advanced PV international certification	
	0	0	11 school outreach events	22 school outreach events	
	0	0	1 public presentation on Climate Change Adaptation Water Master Plan	5 World Water Day Celebrations/Events (annual)	
	0	0	0 water conservation, energy efficiency, rainwater harvesting and climate change campaign (TV, Radio and Social Media)	1 water conservation, energy efficiency, rainwater harvesting and climate change campaign (TV, Radio and Social Media)	
Indicator 8.1 Number of males and females made aware of climate threats and related appropriate responses.	0	3 persons trained in PV installation and maintenance	A Case Study of lessons learnt.	At least 200 persons trained in PV installation and maintenance, CCORAL, RWH system installation and maintenance or ENVISION	

2.4.2 PROGRESS UPDATE ON PROJECT/PROGRAMME LEVEL INDICATORS OF THE LOGIC FRAMEWORK¹³					
<i>Project/Programme indicators (Mitigation/Adaptation)</i>	<i>Baseline</i>	<i>Current value¹⁴</i>	<i>Target (mid-term)</i>	<i>Target (final)</i>	<i>Remarks (including changes¹⁵, if any)</i>
				<p>CCORAL is used to access climate risk for BWA project.</p> <p>Annual World Water Day Event instituted</p> <p>At least 2,000 persons (students and households) actively participated in community events, school outreach events, social media, consultations or public presentation(s).</p>	

2.5 REPORT ON CHANGES DURING IMPLEMENTATION

Accredited Entity- Caribbean Community Climate Change Centre

There has been no change to the beneficial ownership structure or the management changes of the Accredited Entity. Changes to the implementation structure has been identified in the Inception report and no changes have subsequently been made.

Government/Other Policies

Since the inception of this Project there has been some developments with respect to the changing of laws in Barbados. However, it should be noted that these changes by the Government of Barbados support the implementation of this Project and also is projected to assist in promoting a national paradigm shift in Barbados. The Government of Barbados has now pledged in 2019 to achieve an island 100% free of fossil fuels by 2030, as outlined in its revised Nationally Determined Contributions.

Other material changes

No significant material changes have been identified up to this reporting period that could influence the overall outcome of the Project.

2.6 IMPLEMENTATION CHALLENGES AND LESSONS LEARNED

<i>Challenge encountered</i>	<i>Type¹⁶</i>	<i>Measures adopted</i>	<i>Impact on the project implementation¹⁷</i>	<i>Lessons learned and Other Remarks</i>
Receiving timely responses for nominations for representative to sit on the Project Steering Committee	<i>Other</i>	<i>Undertook follow up calls and resubmitted correspondences requesting nominations for the PSC</i>	<i>Minor / Solved</i>	<p>1. Research (inclusive of telephone calls) should be conducted prior to circulation of correspondence to ensure that the letters are addressed appropriately.</p> <p>2. A hard copy of the correspondence should also be mailed especially when interacting with Government Ministries/Departments.</p>
The second seminar series quarterly report did not contain a list of attendees; therefore, it was difficult to validate the gender disaggregated data which was presented in the report	<i>Other</i>		<i>Minor / Solved</i>	The report should have included a list of participants and their organizational designations as an appendix
Difficulties in recording lessons learnt from the hosting of the seminar and symposium	<i>Other</i>		<i>Minor / Solved</i>	Seminar evaluation surveys should be issued to capture feedback which could be used as lessons learnt to improve the hosting of future events
Gender analysis could not be developed for the symposium as no attendance record was kept	<i>Other</i>	An attendance register template was created.	<i>Minor / Solved</i>	Attendance records need to be drafted for all workshops/seminars and symposiums etc
Limited attendance at the symposium	<i>Other</i>		<i>Minor / Solved</i>	Implementation of an aggressive marketing campaign for the symposium would have led to improved attendance levels
Quantifying the amount of energy generated by the PV	<i>Other</i>		<i>Minor / Solved</i>	Ensure that the PVs can function independently from the grid in case of power outage; and backup redundancies (double metering) should be considered to quantify the amount of the energy generated by the PV and if any is being received by the grid or the respective pumping stations.

¹⁶ Implementation; Legal; Financial; Environmental/Social; Political; Procurement; Other; AML/CFT; Sanctions; Prohibited Practices.

¹⁷ Minor/Solved; Moderate; High.

<p>Undertaking the Needs Assessment of potable water systems and rainwater harvesting systems</p>	<p><i>Other</i></p>		<p><i>Minor / Solved</i></p>	<p>A holistic approach for the Potable water storage tanks and rainwater harvesting is a more realistic approach for this assessment as there may be an overlap in data gathering and analysis tasks.</p>
<p>Outdated electrical installations at various households in the community</p>	<p><i>Other</i></p>		<p><i>Minor / Solved</i></p>	<p>Ensure that households are able to accommodate electrical upgrades before attaching a potable water storage system to their houses</p>

SECTION 4: REPORT PROJECT SPECIFIC ON ENVIRONMENTAL AND SOCIAL SAFEGUARDS & GENDER

4.1 IMPLEMENTATION OF ENVIRONMENTAL AND SOCIAL SAFEGUARDS AND GENDER ELEMENTS

During this reporting period, there have been no significant key risks and impacts that have been identified. However, to ensure that all potential risks are mitigated as they can be reasonably foreseen, the following continue to be monitored and the mitigation steps will continue to be developed as any increase of the risks occur.

Outcome 1

The photovoltaic systems to be installed may have a potential risk that includes the malfunctioning of the systems, which inevitably may result in system downtime. Mitigation measures were built into the procurement documents and are now prerequisites for qualifying bidders that include: service contracts, leasing options with maintenance included, and capacity building components are included for monitoring, operations, and maintenance with problem solving integrated throughout. A proposed maintenance and operations schedule, as well as onsite training are now incorporated into the procurement documents as a delivery criterion. In addition, technologies used will not be unique to BWA and parts and expertise to fix will be available in Barbados for jobs that do not require servicing by the seller. These measures are anticipated to lower the level of this risk to low.

Outcome 2

A potential risk identified was the underutilization of the RAFF by the general public for climate resilience implementation at the household and business level. However, during the launch of the Project various stakeholders were once more reminded of the RAFF and the benefits of the RAFF. To offer risk mitigation, component four has been designed to ensure that a widespread education and outreach campaign be conducted and also activities will be planned to engage with the public and with entrepreneurs. The entrepreneurial engagement is designed to encourage growth in the sector and assist with educational materials to convince potential customers of benefits of resilience implementation to them. These activities should reduce this risk to a percentage lower than 5%.

(1) The information includes description on any changes in the key environmental and social risks and impacts as identified and arising from the implementation including any unanticipated risks and impacts (*ex. from changes in laws and regulations*) and, based on these if any change in the project's environmental and social risk category. In case of a change in the E&S risk category for the project, please provide an explanation.

The Project has initially categorized as a category B project having "activities with potential mild adverse environmental and/or social risks and/or impacts that are few in number, generally site-specific, largely reversible, and readily addressed through mitigation measures." The Project is still a category B project.

Since the inception of this Project there has been some developments with respect to the changing of laws in Barbados. However, it should be noted that these changes by the Government of Barbados support the implementation of this Project and also is projected to assist in promoting a national paradigm shift in Barbados. The respective laws are as follows as included in annex 2 of this report:

Overall Project

Control of Disposable Plastics Act, 2019-11

An Act to make provision for a prohibition on the importation, manufacture, and retail of certain disposable plastics, authorise the use of certain types of disposable plastics and provide for related matters.

A draft cabinet paper has been presented to the Government of Barbados (Parliament) to consider a new water zoning policy and to consider a new water re-use act. These draft acts were first presented to Parliament in 2016 as the "draft Water Reuse Act and draft Water Reuse Regulations, 2006", however, since 2018 the Government has been very actively involved in climate change and its impact on water in Barbados. This draft act will have impact on the "Town and Country Planning Act, 1985 Cap. 240", "Town and Country Development Planning Order, 1972" and "Barbados Water Authority Act, 1989 Cap. 274A"

The Fair-Trading Commission (FTC) has become very actively involved in ensuring that there is a fair market in the energy sector and that due to the increases in renewable energy systems in Barbados that the general population is not negatively affected. The Fair-Trading Commission assumed regulatory responsibilities on January 2, 2001 pursuant to the Fair-Trading Commission Act, CAP. 326B. The Commission is responsible for the enforcement of the provisions of the Utilities Regulation Act, CAP. 282, the

Telecommunications Act, CAP. 282B, the Fair Competition Act CAP. 326C and the Consumer Protection Act, CAP. 326D. Additionally, the Feed in Tariff has been reviewed and a new policy was issued on September 29th 2019.

(2) The information should include status of compliance with applicable laws and regulations of the country as well as the relevant conditions or covenants under the FAA. This can be captured in the table below:

Status of compliance with applicable laws and regulations and the conditions and covenants under FAA

Applicable laws and regulations/conditions and covenants	Status of compliance
Condition 1: Fulfilment of the conditions for effectiveness set out in Clause 7;	All conditions were fulfilled for effectiveness set out in Clause 7 of the FAA and accepted.
Condition 2: Delivery to the Fund by the Accredited Entity of evidence of the authority of the person or persons authorized to sign each Request for Disbursement under this Agreement, unless otherwise notified by the Accredited Entity, and the authenticated specimen signature of each such persons;	Evidence Delivered by the AE to the GCF and accepted.
Condition 3: Written confirmation to the Fund from the Accredited Entity that the GCF Account has been established, together with a copy of the SWIFT message issued by the relevant bank to the Accredited Entity or a letter from the Accredited Entity's bank, where the GCF Account is opened, issued to the GCF confirming and indicating the owner of the account, name of the bank and the bank account number;	Evidence Delivered by the AE to the GCF and accepted.
Condition 4: Delivery to the Fund by the Accredited Entity of the final copy of the charter for the RAFF ("RAFF Charter"), which shall include: (1) the eligibility criteria applied by BWA for the selection of the loans and grants to be financed by the RAFF, and (2) the methodology for calculation of the amount of funds to be transferred by BWA to the RAFF at a given period, which shall take into consideration the cost reductions resulting from the implementation of the Funded Activity; and	Delivered by the AE to the GCF and accepted.
Condition 5: Submission to the Fund by the Accredited Entity of the completed financial management and procurement risk assessment of BWA to the satisfaction of the Accredited Entity.	Delivered by the AE to the GCF and accepted.
Condition 6: Other than in relation to the first Disbursement, submission to the Fund by the Accredited Entity of evidence that at least seventy per cent (70%) of the funds previously disbursed by the Fund have been cumulatively spent on the Funded Activity;	In progress.
Condition 7: Other than in relation to the first Disbursement, submission to the Fund by the Accredited Entity of APRs and Financial Information in accordance with the AMA;	N/A for this reporting period.
Condition 8: Delivery to the Fund by the Accredited Entity of a Request for Disbursement, within thirty (30) calendar days prior to the date on which the Disbursement is requested to be made, which shall not be later than the Closing Date;	Delivered by the AE to the GCF and accepted.
Condition 9: Confirmation to the Fund by the Accredited Entity that there is no event of default occurring with respect to this Agreement and/or the Subsidiary Agreement;	There has been no event of Default during this reporting period.
Condition 10: Delivery to the Fund by the Accredited Entity of evidence indicating the status and amount of Co-financing disbursed and applied to the implementation of the Funded Activity up to the date of the request for funds made by the Accredited Entity; and	Delivered by the AE to the GCF and accepted.
Condition 11: If the GCF Proceeds, requested by the Accredited Entity in the Request for Disbursement, will be used to fund contingencies, as described in the Budget, inclusion in the Request for Disbursement of written justification by the Accredited Entity for such request and submission to the Fund of evidence that the relevant amount requested by the Accredited Entity is needed.	N/A during this reporting period.
Covenant 1: Inform the Fund, in the APRs to be submitted in accordance with the AMA, or at any time upon its request, on the status of the Co-financing that has been disbursed and applied to the implementation of the Funded Activity;	N/A during this reporting period.
Covenant 2: Ensure that the Co-financier (i) does not amend or alter the Co-financing in such way that the Co-financing is reduced or	Compliant.

<p>delayed, unless it is previously consulted with, and consented by, the Fund; and (ii) promptly inform the Fund of any cancellation, reduction or prepayment (whether in whole or in part) of the Co-financing;</p>	
<p>Covenant 3: Ensure that the Co-financier provides its Co-financing in a timely manner for the completed and uninterrupted execution of the Funded Activity, as described in the Funding Proposal;</p>	Compliant.
<p>Covenant 4: In case any amendment or modification is entered to or otherwise agreed by the Accredited Entity with respect to the Subsidiary Agreement, inform of such event and furnish to the Fund the executed copies of such amendment or modification within five (5) calendar days from its execution. For the avoidance of doubt, the Accredited Entity shall ensure that such amendment or modification does not contravene the terms and conditions provided in this Agreement and the AMA;</p>	N/A during this reporting period.
<p>Covenant 5: Undertake and/or put in place any adequate measures in order to ensure that the management of the environmental and social risks and impacts arising from the Funded Activity complies at all times with the recommendations, requirements and procedures set forth in the Environmental and Social Assessment ("ESA"), which was provided by the Accredited Entity to the Fund before the Approval Decision;</p>	N/A during this reporting period.
<p>Covenant 6: Obtain, or ensure that BWA shall obtain, all land and rights in respect of land that are required to carry out the Funded Activity and shall promptly furnish to the Fund, upon its request, evidence satisfactory to the Fund that such land and rights in respect of the land are available for the purposes of the Funded Activity;</p>	Compliant.
<p>Covenant 7: Prior to commencing any construction works or activities for the implementation of the Project, submit a detailed Environmental and Social Management Plan ("ESMP") related to the relevant construction works or activities to be executed, in a form and substance satisfactory to the Fund;</p>	N/A during this reporting period.
<p>Covenant 8: Apply, in accordance with its own policies and procedures, its own fiduciary principles and standards relating to AML/CFT in the implementation of the Funded Activity;</p>	Compliant.
<p>Covenant 9: In case of a change of the authorized representative to sign the Request for Disbursement, provide, together with the Request for Disbursement, evidence, satisfactory to the Fund, of the authority of such person to sign the Request for Disbursement and the relevant authenticated specimen signature of such person;</p>	N/A during this reporting period.
<p>Covenant 10: During the tenor of this Agreement, ensure that the outputs of the WSRN S-Barbados, align with the NRW Strategy Activities, are monitored and reported on in the APRs to be submitted in accordance with the AMA;</p>	Outputs are compliant with the NRW strategy activities.
<p>Covenant 11: Include in the Subsidiary Agreement, to be entered into between the Accredited Entity and BWA, the detailed financial, procurement and implementation arrangements of the Project, as well as to require compliance by BWA, with the requirements of the AMA and this Agreement;</p>	Compliant. Delivered by the AE to the GCF and accepted.
<p>Covenant 12: If any amendment to the RAFF Charter is made, immediately inform the Fund of the amendment and deliver a copy of the amended RAFF Charter to the Fund within five (5) days of such amendment;</p>	N/A during this reporting period.
<p>Covenant 13: Ensure that the RAFF Operations Manual shall include the detailed eligibility criteria for the selection of the loans and grants to be financed by the RAFF, in accordance with the RAFF Charter delivered to the Fund pursuant to Clause 9.01(a)(iv) above, and following approval of the RAFF Operations Manual by the Accredited Entity, within five (5) calendar days, deliver to the Fund a copy of the amended RAFF Operations Manual; and</p>	The RAFF Charter was delivered by the AE to the GCF and accepted. On-going: The RAFF Operations Manual will be presented to the GCF in accordance with the approved implementation schedule.
<p>Covenant 14: If any amendment to the RAFF Operations Manual is made, immediately inform the Fund of the amendment and deliver a copy of the amended RAFF Operations Manual to the Fund within five (5) days after the approval of the amendment by the Accredited Entity.</p>	The RAFF Charter was delivered by the AE to the GCF and accepted. On-going: The RAFF Operations Manual will be presented to the GCF in accordance with the approved implementation schedule.

Law or regulation 1		N/A during this reporting period.	
<p>(3) Provide a report on the progress made in implementing environmental and social management plans (ESMPs) and frameworks (ESMFs) describing achievements, and specifying details outlined in the tables below.</p> <p><i>Implementation of management plans and programmes</i></p>			
(i) activities implemented during the reporting period, including monitoring	(ii) outputs during the reporting period	(iii) key environmental, social and gender issues, risks and impacts addressed during implementation	(iv) any pending key environmental, social and gender issues needing accredited entity's actions and GCF attention
1.1.2.2: Design, Purchase and Installation of 0.4 MW Grid-tied PV (solar) plant at Bowmanston Pumping Station.	Targets Achieved: Procurement and Installation of 0.42MW PV systems completed. (100% completed)	Risk: Potential adverse impacts to habitats and/or ecosystems and ecosystem services from project activities, in particular due to changing land use for PV installations, rainwater harvesting for agriculture, and infiltration well rehabilitation. Mitigation measure: Terms of Reference for PV projects include requirements for minimizing impacts to habitats and ecosystem services and more specific biodiversity surveys as part of the individualized EIAs required for Barbados. Green infrastructure will be prioritized for storm water management at sites. Land is currently overgrown and was once mainly sugarcane.	N/A.
3.2.1: Replacing defective mains: 6.2km of mains replaced	Targets Achieved: Purchase of Pipes and Fittings. Civil works and trenching reinstatement. Pipe laying and PVC connections. 6.2km of mains replaced. (38.75% completed)	Risk: Potentially adverse impacts on gender equality based on distribution of jobs required to implement project and handle monitoring and operation. Mitigation measure: A targeted recruitment strategy was employed to reach persons underrepresented in given job positions associated with project. This strategy included a gender and vulnerability component.	N/A.
3.4.1.2: Installation of Potable Water Storage Systems: Purchase and Install Personal Tank at homes. Retrofit of Water tanks & Reservoirs Re-furbishments: 305 PTP systems installed. Procurement completed for reservoir re-furbishments.	Targets Achieved: 305 PTP systems installed. Procurement completed for reservoir re-furbishments. (40% of co-financing activities completed)	Risk: Potentially adverse impacts on gender equality based on distribution of jobs required to implement project and handle monitoring and operation. Mitigation measure: A targeted recruitment strategy was employed to reach persons underrepresented in given job positions associ-	N/A.

		ated with project. This strategy included a gender and vulnerability component.	
PM Project Monitoring. Project Monitoring for both GCF funded and co-financing activities were conducted. A ceremony was conducted to Launch the Project as detailed in the Inception Report.	Targets Achieved: Confirmation of implemented and ongoing Co-financing activities. WSRN S-Barbados Project Launch Completed. Engagement with GCF secretariat and regional representatives, NDA, BWA, stakeholders, Media-general public initiated.	Risk: Local communities feel at risk and under informed. Mitigation Measure: The communities were invited to the Project launch and all stakeholders. The public was reassured of the safety and health of persons working on land in close proximity to projects, during preparation work for the Project launch.	N/A.

Implementation of the stakeholder engagement plan

(i) activities implemented during the reporting period	(ii) dates and venues of engagement activities	(iii) information shared with stakeholders	(iv) outputs including issues addressed during the reporting period
1.1.2.2: Design, Purchase and Installation of 0.4 MW Grid-tied PV (solar) plant at Bowmanston Pumping Station.	22 nd March 2019 Bowmanston Pumping Station.	Presentation of PV systems.	Targets Achieved: Procurement and Installation of 0.42MW PV systems completed. (100% completed)
3.2.1: Replacing defective mains: 6.2km of mains replaced	News articles 1 st March 2019 17 th July 2019 12 th September 2019 On-going activity.	Community plans for routes of mains replacement.	Targets Achieved: Purchase of Pipes and Fittings. Civil works and trenching reinstatement. Pipe laying and PVC connections. 6.2km of mains replaced. (38.75% completed)
3.4.1.2: Installation of Potable Water Storage Systems: Purchase and Install Personal Tank at homes. Retrofit of Water tanks & Reservoirs Refurbishments: 305 PTP systems installed. Procurement completed for reservoir refurbishments.	News articles 29 th November 2019 14 th December 2019 On-going activity. The PTP was advertised and the BWA held various town-hall meetings in 2018 and 2019 to inform persons of the PTP. These town hall meetings were public meetings; however, it was difficult to collect disaggregated data of attendees.	The BWA's Personal Tank Programme.	Targets Achieved: 305 PTP systems installed. Procurement completed for reservoir refurbishments. (40% of co-financing activities completed)
PM Project Monitoring. Project Monitoring for both GCF funded and co-financing activities were conducted. A ceremony was conducted to Launch the Project.	8 th – 12 th May 2019 BWA HQ, Bowmanston, Belle, Hampton pumping station, Colleton St.John,.	WSRN S-Barbados Project Activities.	Targets Achieved: Confirmation of implemented and ongoing Co-financing activities. WSRN S-Barbados Project Launch Completed. Engagement with GCF secretariat and regional representatives, NDA, BWA, stakehold-

			ers, Media-general public initiated.

Links to News Articles:

- 01.03.2019 <https://www.nationnews.com/nationnews/news/238711/-pronged-fix-water-woes>
- 11.05.2019 <https://barbadostoday.bb/2019/05/11/mains-to-be-replaced/>
- 17.07.2019 <http://www.loopnewsbarbados.com/content/video-minister-talks-water-water-woes-water-mains-bwa>
- 09.12.2019 <https://barbadostoday.bb/2019/09/12/replacement-water-mains-get-funding/>
- 29.11.2019 <https://barbadostoday.bb/2019/11/29/more-tanks-coming-to-bwa/>

An inception workshop was conducted by the CCCC and the BWA with the major stakeholders and the newly formed government on Monday 3rd September 2018. During this Inception Workshop, the CCCC and BWA took the opportunity to, in very detail, review the Project and to explain to the stakeholders the importance of the Project and also the Project objectives and all activities therein. In addition, the BWA also used this opportunity to review their approaches to co-financing and also to give an update of the co-financing activities achieved thus far or the status of implementation. It is crucial to note that the NDA was very supportive and the NDA's office, along with the Minister responsible for the BWA, assisted with the coordination of the Inception Workshop with the Prime Minister's advisors on Economics and another advisor on Climate Change.

With respect to the Project and its integration into the government's national adaptation plans, the Prime Minister's Climate Change Advisor, Dr. Hugh Sealy, was very supportive of the Project and indicated that the Project aligned well with the government's 2030 goals, and noted that the Project was included as a major grant portion of Barbados' "Roof to Reef" programme, a programme that comprises over 30 national projects, from all sectors in Barbados.

Overall, the Inception Workshop was very well executed. However, it was noted that there was a need to hold a public inception ceremony and to invite the public to share all the ideas of the Project and how the Project was to benefit every single member of Barbados, regardless of nationality, sex, race, income level, among others. In addition, Minister Wilfred Abrahams, Minister with responsibility for BWA, supported the idea of the public inception ceremony and indicated that he will lend support to this inception ceremony. It is critical to note that the BWA's parent ministry is the MEWR, and as a state owned enterprise, needs the support of the Government of Barbados to ensure the proper execution of the Project, especially as it relates to the BWA realizing their co-financing obligations. However, it is also worthy to note that after the Project was thoroughly explained to the Government of Barbados, that the Project has had overwhelming support.

Table 1. Inception Workshop Block Schedule

Block Schedule			
Date	Monday 3 rd	Tuesday 4 th	Wednesday 5 th
Time	9:30 – 12:30 pm	9:00 – 12:00 noon	9:00 – 12:00 noon
Topic	WSRN S Barbados Project	AE Engagement	The RAFF (Component Two) GCF pipeline Projects
Location	BWA HQ Board Room	BWA HQ Board Room	BWA HQ Board Room
Time	1:00 – 4:00 pm	1:00 – 3:00 pm	2:00 – 4:00 pm
Topic	WSRN S Barbados Project	Climate Financing	FAA & Subsidiary agreement
Location:	BWA HQ Board Room	LESC: High Level Meeting	BWA HQ Board Room

Implementation of the grievance redress mechanism

(i) description of issues/complaints received during the reporting period	(ii) status of addressing issues/complaints
No issues or complains were received during this reporting period.	N/A during this reporting period.

4.2 GENDER ACTION PLAN

As outlined in the Inception Report, the baseline gender analysis for this Project revealed that Barbados did not have a gender-training component that addressed infrastructure, especially in the water and energy sectors. The activities conducted thus far and that are ongoing incorporates the gender management plan at all levels. Future Project initiatives also plan to mainstream gender into all activities – fostering of utility/university/community/private sector partnerships, promotion of stakeholder engagement, exchanging of knowledge, building of workforce, and supporting of entrepreneurship opportunities – to increase resilience of people and the water sector of Barbados to climatic natural disasters like droughts, tropical storms and hurricanes. As managers of homes, caregivers, service workers in the tourism industry, and heads of 62.2% of poor households, women in Barbados are more vulnerable to water disruptions. They, however, make up a smaller percentage of the students or workforce aligned with water infrastructure services at a time when Barbados and the Caribbean region should make major investments in this infrastructure. While this Project provides benefits that cut across several industries, sectors, communities, and vulnerable groups, it also increases participation of women in water sector resilience both within the Barbados Water Authority (BWA) and across Barbados.

Outcome 1: Improved/Increased Resilience to Storm Events and BWA's Carbon Footprint Reduced. Increased capacity of population to understand, monitor, and operate Renewable Energy (RE) systems, and improved understanding of gender barriers associated with RE industry in Barbados. Analogous with the Project's gender action plan, consideration of gender has been included in the draft Terms of References for contractual services associated with this project and other projects supported by the BWA that contribute to the co-financing activities. Ongoing progress is being made to make this gender consideration utility wide at the BWA. The BWA will conduct a gender assessment under their "Water Supply Network Upgrade Project" for the utility to use as a benchmark. Currently the planned activities are on track to achieve this outcome.

Outcome 2: Adaptation and Mitigation Initiatives Expanded through a Revolving Fund. Both men and women will be encouraged to access fund equally to make their homes and businesses resilient to climate change. The draft RAFF chartered and draft Terms of Reference for the completion of the RAFF operations manual incorporates this implementation arrangement according to the Gender Action Plan. The current RAFF charter has guidelines that consider gender mainstreaming, PR materials and pathways that reach equal numbers of men and women. Currently the planned activities are on track to achieve this outcome.

Outcome 3: Improved resilience to climate change and disruptions in water supply. Gender mainstreamed into development of water masterplan, decision making for mains replacement, potable water storage, and RWH with equal numbers of men and women benefitting from interventions. It is important to note that the BWA has already installed 305 personal tanks and has replaced 6.2km of mains. A research paper was published by W. Isaacs entitled "Opportunities to Mainstream Gender in Water and Wastewater Infrastructure Projects: A Case Study in Barbados". This provided key baseline information on gender in the water sector in Barbados. The water user survey revealed a statistical significant association between gender and type of water storage container used at the household level. Men were more likely than women to report use of larger plastic buckets and tanks, while women showed a preference for smaller buckets and bottles. Identification and consideration of design parameters such as preference for type and size of storage receptacle, system elevation, position of cleaning access point, and need for a pump will facilitate or limit the successful adoption or adaptation of rainwater harvesting systems. This has been considered in the preparation of the needs assessment for the Potable Water Storage and Rainwater Harvesting systems. Currently the planned activities are on track to achieve this outcome.

Outcome 4: Greater capacity, knowledge and awareness to build Climate Resilience in the Water Sector. Gender mainstreamed in climate resilience for water sector. A presentation was received on the proposal for component 4 and included an emphasis on gender considerations. These considerations were analogous with the implementation arrangement for component four, which included: Mainstreaming gender into new policies for water sector resilience, Public Private Partnerships in Barbados to combat climate change, and Producing and disseminating educational material to reach diverse audiences in Barbados and regionally on gender mainstreaming for water sector resilience in Barbados. Currently the planned activities are on track to achieve this outcome.

The current project implementation take into considerations the recommendations of the Gender Action from the baseline gender analysis completed for this Project were to: identify clear gender objectives and targets prior to project implementation to ensure their incorporation in the Project, allocate budget to appoint a gender focal point that would coordinate these activities, mainstream gender in existing and new policies for water sector resilience in Barbados to combat climate change, include socio-economic information as a criterion for prioritization of locations for project interventions and target training for water sector resilience to increase representation of women in key positions.

4.2.1 Progress on implementing the project-level gender action plan submitted with the funding proposal.

Activities/actions	Indicators	Baseline	Targets, including sex-disaggregated targets	Budget	Report on annual progress
<p>Actions: Conduct workshop with entrepreneurs and other relevant stakeholders, including training programs, for addressing gender integration in RE sector in Barbados. Train BWA employees on RE systems, operation & maintenance.</p>	List of RE participants in stakeholder consultation.	0	2020 Target: 50% female participation. Baseline gender analysis of renewable energy sector in Barbados produced, including recommendations for integrating gender into RE sector.	Included in budget for knowledge management, Outreach, & Capacity Building.	The AE and the BWA had consultations with CCREEE. CCREEE was engaged as a CARICOM body with expertise in solar renewable energy to lead various stakeholder meetings with solar PV experts. Stakeholder consultations are planned for January 2020.
3.2.1: Replacing defective mains: 6.2km of mains replaced	No. of women impacted based on report on mains replacement.	0	2023 Target: report shows that gender was considered in site selection and contractor selection.	Included in budget for knowledge management, Outreach, & Capacity Building.	N/A.
3.4.1.2: Installation of Potable Water Storage Systems: Purchase and Install Personal Tank at homes. Retrofit of Water tanks & Reservoirs Refurbishments: 305 PTP systems installed. Procurement completed for reservoir refurbishments.	Database of vulnerable populations and needs integrated into GIS database. This is to be included in the needs assessment to be completed during the next reporting period.	50 vulnerable households retrofitted with storage tanks.	2020 Target: database includes a gender layer, that focused on the balance on the impact of the intervention for both males and females.	Included in budget for knowledge management, Outreach, & Capacity Building.	The 305 tanks that were installed by the BWA was on a pilot basis. Persons were invited to come in to the BWA and sign up for the tank programme.
4.1.1 ENVISION Training	# persons certified with ENVISION, CCORAL.	.0	The Target was equal participation of males and females.	US\$23,780	The target was not met during this phase, however, 11 (37.9%) were female. 19 (65.5%) participants were BWA employees. 21 BWA and project partners certified by the end of December 2019.
4.1.2 Public Awareness	Outreach activities and evaluations of those activities.	0	50% female representation, greater than average on evaluations.	US\$246,000	17 persons participated in the seminar, 9 (53%) of whom were female.

4.3 PLANNED ACTIVITIES ON ENVIRONMENTAL AND SOCIAL SAFEGUARDS

As an accredited agency to the GCF, the CCCCC' Environmental and Social Safeguards Policy aligns with the eight Performance Standards of the Green Climate Fund: PS1: Assessment and Management of Environmental and Social Risks and Impacts; PS2: Labour and Working Conditions; PS3: Resource Efficiency and Pollution Prevention; PS4: Community Health, Safety and Security, PS5: Land Acquisition and Involuntary Resettlement; PS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources; PS7: Indigenous Peoples, and PS8: Cultural Heritage. The WSRN S-BARBADOS Project is designed considering mitigation actions for all identified adverse environmental and social impact and will engage with the public and key stakeholders throughout the Project and beyond in a paradigm shift for the utility and how it makes decisions on where to locate project components.

Terms of Reference (TOR) for PV projects include requirements for minimizing impacts to habitats and ecosystem services and more specific biodiversity surveys as part of the application to TCDPO. PV infrastructure projects will be installed to minimize visual impact from loss of green space and minimize unsightly wiring etc. in design plans. Landscaping around the project should improve areas that had become overgrown. PV is located in Zone 1 areas for groundwater protection. Land to be used for Project would not displace any inhabitants. A resettlement action plan or a resettlement policy framework are not necessary.

Encourage general public to access RAFF. Make BWA's website more interactive with educational tools that integrate with social media to engage customers with climate resilient solutions for Barbados. Create videos/documentary, organize event(s) to raise awareness, etc.

Continued mains replacement program: the implementation process for this activity is ongoing and during implementation when the pipes are being replaced, there will be temporary negative impacts that directly affect the environment as old pipes are being extracted from the ground and new ones installed. Mitigating efforts must be made to address environmental impacts that stem from the excavation practices, equipment usage, chemical selection, and employees' behaviour while onsite. The Project is focused on water supply and so water is a material that is consumed by households and businesses. It also includes off grid renewable and clean energy solutions. The water needed does not add to the amount of water required by households. The Project seeks to reduce non-revenue water, and should therefore reduce water consumption.





Strong knowledge exchange and outreach component to reduce activities that would result in negative consequences. Targeted recruitment to reach persons underrepresented in given job positions associated with Project will be completed. Development of a gender training program in conjunction with the UWI Institute of Gender Studies that builds capacity to address gender and infrastructure across the island and beyond.

4.4 PLANNED ACTIVITIES ON GENDER ELEMENTS

The gender action plan identified the need for inclusiveness of both genders in project activities. While it was anticipated that the ENVISION training conducted will have as its target to train a minimum of 33% of either gender, at the conclusion of the training, 38% female were trained. The certification of the remaining participants in the ENVISION is expected to be undertaken in the next reporting period. In addition, the gender representation will also follow a minimum representation of 33% of either gender on the Project Steering Committee. As previously reported, the Terms of Reference for the Project Steering Committee have been developed and disseminated to the various organizations and nominations have been received from these organizations. These considerations were analogous with the implementation arrangement for this project.

The Terms of Reference for the Gender Mainstreaming and Climate Change workshops have been developed and is expected to commence training during the first quarter of 2020. It should be noted that this is the first time that such training with a vital focus on gender will ever be conducted in the water sector in Barbados. To assist in the advancement of these workshops, a focal point at the BWA has been identified as Mrs. Andrea Hackett-White, who will be trained to become the in-house "Gender Expert" at the BWA to ensure that this capacity is not lost after the implementation of the project. All project activities have followed the minimum representation as identified in the GAP and future activities are expected to follow the projects commitments.

SECTION 5: ANNEXES

<p>ANNEX 1. Updated implementation timetable for the Funded Activity.</p>	 <p>Annex 1. Revised Implementation Tim</p>
<p>ANNEX 2. Changes in Policies and National Priorities of Barbados</p>	 <p>Annex 2. Policy Changes.docx</p>
<p>ANNEX 3. DRAFT 2020 WORK PLAN AND PROCUREMENT PLAN</p>	 <p>2020 Draft AOP and Procurement Plan, V</p>
<p>ANNEX 4. LESSONS LEARNED DATABASE</p>	 <p>Annex Lessons-Learned Da</p>

SECTION 6: ATTACHMENTS

Attachment 1. Unaudited/Audited financial statements (as required by FAA).

Attachment 2. Interim/Final evaluation report (as required by FAA). N/A

Other Attachments (if any). N/A