



ADAPTATION FUND

AFB/PPRC.28/32
4 October, 2021

Adaptation Fund Board
Project and Programme Review Committee
Twenty-Eighth Meeting
Bonn, Germany (Virtually held) 11-13 October 2021

Agenda Item 9 a)

PROPOSAL FOR LARGE INNOVATION PROJECT FOR BELIZE

Background

1. At its thirtieth meeting, having considered document AFB/B.30/5/Rev.1, the Adaptation Fund Board (the Board) decided:

(a) To adopt the medium-term strategy as amended by the Board, as contained in the Annex 1 of the document AFB/B.30/5/Rev.1 (the MTS); and

(b) To request the secretariat:

(i) To broadly disseminate the MTS and work with key stakeholders to build understanding and support;

(ii) To prepare, under the supervision of the MTS task force, a draft implementation plan for operationalizing the MTS, containing a draft budget and addressing key assumptions and risks, including but not limited to funding and political risks, for consideration by the Board at its thirty-first meeting; and

(iii) To draft, as part of the implementation plan, the updates/modifications to the operational policies and guidelines of the Adaptation Fund needed to facilitate implementation of the MTS, for consideration by the Board at its thirty-first meeting.

(Decision B.30/42)

2. Pursuant to decision B.30/42, subparagraph (b) (ii), the secretariat prepared a draft implementation plan for the MTS, including an assessment of assumptions and risks. The secretariat shared a version of the draft with the MTS task force for comments.

3. The draft implementation plan also contains suggestions for specific funding windows that might be opened under the MTS in complement of the Fund's existing funding windows for single-country and regional adaptation projects and readiness support projects. Following the approval of the implementation plan, the secretariat would present specific proposed details for each new funding window at subsequent meetings of the Board for its consideration, in accordance with the timeline contained in the implementation plan.

4. At its thirty-first meeting, the Board discussed the draft implementation plan for the MTS, and members of the Board proposed amendments to the document. The secretariat then presented a revised draft, in document AFB/B.31/5/Rev.1. Having considered that document, the Board decided:

(a) To approve the implementation plan for the medium-term strategy for the Fund for 2018–2022 contained in the Annex I to document AFB/B.31/5/Rev.1 (the plan);

(b) To request the secretariat:

[...]

- (iii) *To prepare, for each proposed new type of grant and funding window, a specific document containing objectives, review criteria, expected grant sizes, implementation modalities, review process and other relevant features and submit it to the Board for its consideration in accordance with the tentative timeline contained in Annex I to document AFB/B.31/5/Rev.1, with input from the Board's committees;*
- (iv) *Following consideration of the new types of support mentioned in subparagraph (b)(iii), to propose, as necessary, amendments to the Fund's operational policies and guidelines Fund to better facilitate the implementation of such new types of support; and*

[...]

(Decision B.31/32)

5. At the -second session of its thirty-fifth meeting, the Board considered document AFB/PPRC.26.b/16, *Program on Innovation: Large Grants for Innovation*, and the Board decided:

- (a) *To approve the process for providing funding for innovation through large grants to Implementing Entities (IEs) as described in document AFB/PPRC.26.b/16; including the proposed objectives, review criteria, expected grant sizes, implementation modalities, review process and other relevant features as described in the document;*
- (b) *That the large grants for innovation would fall outside the country cap approved by the Board in decision B.13/23 or, in the case of regional or multi-regional proposals, the regional provision, whereas they would count against the Multilateral Implementing Entity cap as per decision B.12/9;*
- (c) *To request the secretariat to prepare the first Request for Proposals to IEs for a total amount of US \$30 million to be launched by the first quarter of calendar year of 2021; and*
- (d) *To request the secretariat to consider the need to develop specific objectives and indicators for the innovation aspects of the projects, beyond what is included in the regular project performance reporting process and make relevant recommendations to the Board at its thirty-seventh meeting.*

(Decision B.35.b/8)

6. At its thirty-sixth meeting, the Board considered the document AFB/PPRC.27/28, *Programme on Innovation: Operationalization of Large Grants for Innovation*, and the Board decided:

- (a) *To approve the Innovation Large Grant Project Proposal template, the Review Criteria template and the Instructions for Preparing a Proposal for Innovation Large Grants, as described in annexes II, III and IV to document AFB/PPRC.27/28;*
- (b) *To launch the request for proposals so that submissions of Innovation Large Grants proposals are invited to be considered as early as the thirty-seventh meeting of the Board.*

(Decision B.36/24)

7. Subsequently, the first call for project and programme proposals under the indicative set-aside amount of US\$ 30 million was issued to eligible Parties to submit large innovation project and programme proposals to the Fund through accredited NIEs, RIEs and MIEs.

8. The following project concept proposal document titled “Securing Water Resources through Solar Energy and Innovative Adaptive Management (SEAM)” was submitted for Belize by the Protected Areas Conservation Trust (PACT), which is a National Implementing Entity of the Adaptation Fund.

9. This is the first submission of the proposal, using the two-step submission process.

10. The current submission was received by the secretariat in time to be considered in the thirty seventh Board meeting. The secretariat carried out a technical review of the project proposal, assigned it the Project ID number AF00000272, and completed a review sheet.

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

12. The secretariat is submitting to the PPRC the summary and, pursuant to decision B.17/15, the final technical review of the project, both prepared by the secretariat, along with the final submission of the proposal in the following section. In accordance with decision B.25/15, the proposal is submitted with changes between the initial submission and the revised version highlighted or with track changes.



ADAPTATION FUND

ADAPTATION FUND BOARD SECRETARIAT TECHNICAL REVIEW OF PROJECT/PROGRAMME PROPOSAL

PROJECT/PROGRAMME CATEGORY: Innovation Single Country Project Concept

Country(ies)/Region: **Belize**
 Project Title: **Securing Water Resources through Solar Energy and Innovative Adaptive Management (SEAM)**
 Thematic Focal Area:
 Implementing Entity: **Protected Areas Conservation Trust (PACT)**
 Executing Entities: **Ministry of Rural Transformation, Community Development, Labour and Local Government**
 AF Project ID: **AF00000272**
 IE Project ID: Requested Financing from Adaptation Fund (US Dollars): **4,970,000**
 Reviewer and contact person: **Claudia Lasprilla** Co-reviewer(s): **Alyssa Gomes, Eleanor Saunders**
 IE Contact Person:

Technical Summary	<p>The project “Securing Water Resources through Solar Energy and Innovative Adaptive Management (SEAM)” aims to decrease the uncertainty of water availability in communities by providing climate innovative and adaptive mechanisms to address current and future climate change impacts on water resources. This will be done through three interlinked components below:</p> <p><u>Component 1:</u> Improved Water Supply Systems (USD 3,454,401);</p> <p><u>Component 2:</u> Community Based Watershed Protection and Management (USD 315,025);</p> <p><u>Component 3:</u> Improved Governance and Enhanced Appreciation for Water Resources (USD 376,108).</p> <p><u>Requested financing overview:</u></p> <p>Project/Programme Execution Cost: USD 435,166</p>
--------------------------	--

	<p>Total Project/Programme Cost: USD 4,580,700</p> <p>PACT Implementing Fee: USD 389,300</p> <p>Financing Requested: USD 4,970,000</p> <p>The proposal includes a request for a Project Formulation Grant (PFG) and Project Formulation Assistance (PFA) grant of USD 30,000 and USD 20,000 respectively.</p> <p>The initial technical review found that the proposal needs further development in terms of the extent of the project components and justification of the innovation rationale of the proposed interventions. Similarly, it raises several issues such as: cost-effectiveness, sustainability, project duplication, gender inclusion and consideration of local communities in project design and decision-making, as it is discussed in the number of Clarification Requests (CRs) and Corrective Action Requests (CARs) raised in the review.</p> <p>The final technical review finds that the proposal has addressed some of the CRs and CARs. However, it needs to further strengthen its innovation rationale/methodology and incorporate these elements throughout the proposal. Similarly, it needs to further explore possible project duplications and/or synergies within target communities.</p>
Date	September 21, 2021

Review Criteria	Questions	Comments 26 August 2021	Comments 21 September 2021
Country Eligibility	1. Is/are the beneficiary country/countries a developing country/countries Party/Parties to the Kyoto Protocol?	Yes.	-
	2. Is the participating country / are all participating countries	Yes, as described on pages 2 and 3 Belize's flat and low-lying coastal	-

	developing countries particularly vulnerable to the adverse effects of climate change?	areas and islands make the country highly vulnerable to climate changes. The water sector is one of the most affected areas due to rainfall variability, deforestation, flooding, and soil erosion, among other factors. This uncertainty of water affects local communities, as well as natural systems.	
Project Eligibility	1. Has the designated government authority for the Adaptation Fund / Have the governments' designated authorities for the Adaptation Fund endorsed the project?	Yes. As per the endorsement letter dated 19 July 2021.	-
	2. Does the project/programme support concrete adaptation actions to assist the country or countries in addressing adaptive capacity to the adverse effects of climate change and build in climate resilience? In case of regional project/programme, is there added value using the regional approach, compared to implementing similar activities in each country individually?	Largely yes. The proposal provides an alternative to current water supply and distribution systems in 4 target communities. The usage of solar energy to extract water from nearby rivers is an adaptive action to climate change that will enhance access to potable water to communities that are not connected to the national water supply system. Moreover, the project intends to involve communities in the restoration and protection of watersheds, and to promote capacity building by carrying campaigns and trainings	CR1: Clear , as per information provided on pages 6-7. A section has been added regarding climate change impacts on water availability in the communities. The two seasons determined by rainfall patterns in Belize, cause either floods from June to September or droughts from October to January. During flooding event, communities are cut off from other areas and are affected by contaminated water. On the other hand, they are faced with water scarcity for their day-to-

		<p>among beneficiaries and government officials to effectively manage water systems.</p> <p>The climate vulnerabilities of the four target communities, however, have not been consistently described. For example, only the climate change impacts in Boom Creek have been clearly described i.e., seasonal extreme flooding. While the socio-economic vulnerabilities of the four target areas have been explained, the link between climate change impacts and water supply (availability and quality) in the target areas is missing.</p> <p>CR1: Please provide an explanation on the link between climate change impacts and water supply for the 4 target communities.</p>	<p>day activities during the dry season.</p>
	<p>3. Does the project/programme help spread innovative adaptation practices, tools and technologies that have demonstrated success in one country to another country, countries or regions; and/or</p>	<p>Needs further development.</p> <p>The proposal briefly mentions a project in the Toledo district (Conejo Creek and Pueblo Viejo villages) where communities faced similar water supply challenges. Hybrid Power Photovoltaic</p>	<p>CR2: Not clear.</p> <p>As per information provided in Part II section B (Page 20) on the project in the Toledo district, including the aim to scale up the</p>

	<p>Does the project/programme pilot at larger scale innovative adaptation practices, tools or technologies generated that have demonstrated viability at a small scale?</p>	<p>Systems were piloted in these villages which proved effective in ensuring reliable supply of water.</p> <p>CR2: Please include additional information on the project in the Toledo region and the rationale for why it is considered the best innovation to bring to the target areas against other available options. If the goal is to scale-up this project, please define the innovation process that will take place.</p> <p>The project presents clear features of an adaptation project in its promotion of alternative water supply distribution systems to decrease the uncertainty in the availability of water resources in vulnerable communities. However, the innovation rationale needs to be further developed.</p> <p>CR3: Please describe how the project is 'innovation roll out' of new/adapted technologies as opposed to a standard roll out.</p>	<p>Rudimentary Water Systems. However, it is not clear if the project aims to scale-up <i>only</i> this system or if it will also test other systems, and if so, what would be the methodology used for that process.</p> <p>CR3 and CR4: Not clear.</p> <p>As per further clarification provided in Part II section C (Pages 22-23), in which a roll-out methodology has been described more clearly. The improved description links back to the components of the project including the participatory processes. The participatory process includes an initial assessment of community needs. The diagram added on Page 22 strongly highlights the circular nature of development and shows an understanding of what is required in an innovation project whereby each step can inform and influence the next. However, it appears that there are two (not clearly defined) paths of innovation that would be followed in the</p>
--	---	--	--

		<p>Please explain why water supply systems powered by solar energy are an innovative approach within the Belize context and for the target communities.</p> <p>CR4: Please clarify the methodology of roll out of the proposed innovation by considering a few key questions:</p> <ul style="list-style-type: none"> - What are the challenges faced in rolling out this innovation to these communities? - How will the challenges be integrated into the activities under each component? - What are the possible pathways to adapt the solar water technologies, sanitizing systems, and storage systems to match the needs of each vulnerable community and how will this form an integrated part of the project? <p>Consider that in the case of this specific project, the innovation process might be through exploring possible solutions/ testing different</p>	<p>project. The first is a scaling approach, while the other is a testing and piloting approach (one for the solar pump technology and another for the alternative livelihoods). A clear differentiation and explanation of each approach should be described, along with 'how' this will be done within the innovation methodology should be provided.</p> <p>The proposal mentions in Annex 2 (Page 6) that two families in the Boom Creek installed solar pumps wells for their homes. Further discussion on what lessons can be drawn from these families would be relevant to the proposal and the innovation rationale of the project.</p>
--	--	--	--

		innovations the ground through a participatory process (co-creating with local communities). This is an essential part of an innovation process and can be included as part of the project components.	
	4. Does the project/programme provide economic, social and environmental benefits, particularly to vulnerable communities, including gender considerations, while avoiding or mitigating negative impacts, in compliance with the Environmental and Social Policy of the Fund?	<p>To some extent.</p> <p>The project targets four vulnerable communities to water supply and food security. The majority of the households in these villages are indigenous people and more than 50% are women. The communities will benefit from potable water, enabling them to carry out basic daily functions and reducing the prevalence of diseases.</p> <p>CR5: Please clarify the expected benefits of the proposed actions in the vulnerable communities and how might this lead to further innovation (e.g. alternative livelihoods, management of riparian landscapes etc.)</p> <p>There is mention that alternative livelihoods will be sought under component 2 implying that it is not</p>	<p>CR5 and CR6: Not clear.</p> <p>Additional information was provided on Part II Section D (Pages 23-26). However, as the alternative livelihood actions will be location specific, there is no clarity on what benefits they will bring. Since, the outcomes cannot be known at the point in time, further detail could be provided through the creation of a vision for this action with a clearer pathway that is a model for success.</p>

		<p>yet known what these options will be. It is also important to further elaborate on the process by which this will occur</p> <p>CR6: Please clarify the alternative livelihood actions that will be considered under component 2 and further elaborate on the process by which this will occur.</p>	
	<p>5. Does the project engage, empower and/or benefit the most vulnerable communities and social groups?</p>	<p>To some extent.</p> <p>The project is directed to the most vulnerable communities; however, further development of local voices is needed and encouraged. In addition, gender considerations should be better detailed.</p> <p>The project proposal includes a PFG request to carry out a stakeholder consultation report, this will enhance the engagement and empowerment of local communities in shaping the project.</p>	<p>CAR1: Clear. The figures on Table 1 have been revised (Page 9).</p> <p>CR7: Clear, as per information provided on page 25.</p> <p>The EE has point persons to support and help bridged the language barriers. The three languages used on the target communities are Mayan (Mopan and Q'eqchi) and Spanish.</p> <p>CR8: Not clear.</p>

		<p>CAR1: Please revise table of total population versus breakdown by male/female.</p> <p>CR7: Provided that the project will target indigenous communities with different languages, please clarify how these languages barriers will be dealt with in the project and across communities.</p> <p>CR8: Please provide a description/disaggregation on the groups that will benefit from the project activities, including their current income-generating activities to better understand the positive economic impact of the project activities, and how will technical barriers be dealt with when managing the new water supply system.</p>	<p>The proposal describes on Part II Section E (Pages 26-27), in terms of possible technical barriers, how they will be overcome through trainings. These trainings will ensure that community members are equipped with the skills needed to manage and maintain the systems. These trainings can be guided by the <i>Indigenous Female Solar Engineers Project</i>, thus creating synergies with previous projects in the country. However, the proposal highlights that there will be a cost associated with the systems' maintenance. Further information is needed on how will this affect communities which live with less than USD 1.7 per day.</p> <p>Additionally, a description and disaggregation were provided in Annex 3 Initial Gender Assessment (Pages 0-3) for income generating activities. It is encouraged to provide a similar description as the one of Otoxha Village.</p>
	6. Does the project advance gender equality and the empowerment of women and girls?	<p>To some extent.</p> <p>The proposal describes how the participatory planning process will</p>	<p>CR9: Not Clear.</p>

		<p>inform the roles and responsibilities of different community groups, including women and youth, during the implementation process. Moreover, it includes a PFA request to conduct a Gender and Social assessment.</p> <p>CR9: Please provide how the project will affect the daily lives of the 745 women in the communities – presenting/comparing the current activities of the women and girls with the ones the project will offer, and clarify also how women’s participation will be ensured in the alternative livelihood programs.</p> <p>CR10: Please clarify how gender equality will be ensured within trainings and capacity building activities and how the project will ensure their inclusion in planned activities.</p> <p>CAR2: Please include a gender analysis/ initial gender assessment as an annex to the document.</p>	<p>Although on Part II section D (Page 23) the proposal states that most women in the communities are involved in the day-to-day management of the households and that further assessment would be provided during the project development phase, a detail disaggregation of skills and occupation by gender has only been performed for the community of Otoxha -Annex 3 of Initial Gender Assessment (Pages 0-3). A similar disaggregation needs to be presented for the other three targeted communities. Please refer to comments above CR5 and CR6 on alternative livelihoods.</p> <p>CR10: Not Clear.</p> <p>A paragraph on social inclusion has been added to Part II section D (Page 25). The proposal expresses that if needed, men and women will be engaged separately, in accordance with traditional norms, to ensure that women can fully participate in the training and capacity building activities. At the</p>
--	--	---	---

			<p>national level, both men and women will be provided with information from the knowledge dissemination campaigns. Please provide more details on the traditional norms within these communities and how the project will work within these to insure inclusiveness.</p> <p>CAR2: Not clear.</p> <p>Annex 3 on Gender Analysis has been provided (Pages 0-3). Gender inclusion has been further developed in the proposal, and from an innovation point of view the additional link to the <i>Indigenous Female Solar Engineers project</i> seems appropriate both in terms of gender and inclusion policies, and in terms of innovation drawing on existing successes. However, the Analysis only covers in detail the Otoxha village.</p>
	<p>7. Is the project/programme cost-effective? In the case of regional project/programmes, does the regional</p>	<p>Unclear.</p> <p>The benefits the project will provide in terms of water supply and</p>	<p>CR11: Not Clear.</p>

	<p>approach support cost effectiveness? Does the project engage, empower and/or benefit the most vulnerable communities and social groups?</p>	<p>improving food security are defined in the proposal, however, further development of the system is needed to assess its cost-effectiveness.</p> <p>CR11: Please consider describing the challenges of solar systems in terms of maintenance/repair. What locally led approaches will be put in place to ensure sustainability and longer-term maintenance?</p> <p>CR12: Considering flat and low-lying characteristics of Belize, please clarify measures that the project will put in place to climate proof systems/facilities against hurricanes/flooding?</p> <p>CR13: The project mentions that existing structures will be improved to ensure sustainability and cost effectiveness. Please clarify where this is included in the budget and what structures will be improved.</p>	<p>In part II Section E (Page 27) the proposal describes challenges on the system's maintenance to ensure its operation and proposes trainings within the communities to help overcome them. In addition, it includes synergies with the <i>Indigenous Female Engineers Project</i> to train personnel in each community to perform day-to-day management/maintenance. However, the cost of maintenance for communities is unknown. Please also refer to comment CR8 above, this might affect the project's sustainability.</p> <p>CR12: Clear, as per information provided in part II Section E (Page 27).</p> <p>The proposal describes how engineers will be involved in the system's design and, selection of the system's location. This is to avoid building facilities that are below standards, contamination of water systems, and ensuring consideration of traditional practices that could potentially be hindered by the location of water systems.</p>
--	--	--	--

			<p>CR13: Not clear.</p> <p>In Part II Section E (Pages 26-27) the proposal mentions that it will improve existing operational structures of the EE, but has not explained what structures, how many and where are they located.</p> <p>This improvement will be part of component 3, outcome 3.3 'Increase capacity of local water boards.' Provided that the number of structures that will be improved is unknown, the viability of the budget allocated to component 3 cannot be measured.</p>
	8. Is the project / programme consistent with national or sub-national sustainable development strategies, national or sub-national development plans, poverty reduction strategies, national communications and adaptation programs of action and other relevant instruments?	<p>Yes, the project is aligned with Belize's Growth and Sustainable Development Strategy, Belize's National Climate Change Policy, Strategy and Action Plan (NCCPSAP), Belize's National Gender Policy and it contributes to 6 SDGs. In addition, to other national policies, including: Forest Policy, National Adaptation Strategy and Action Plan for the Water Sector, and the Integrated Water Resources Management Policy.</p>	-
	9. Does the project / programme meet the relevant national technical standards, where applicable, in compliance with	Needs further development.	CR14: Not clear.

	the Environmental and Social Policy of the Fund?	<p>The proposal enumerates technical standards that the project will adhere to, in terms of construction codes, potable water and ESP. However, the proposal will benefit from presenting a description of how each component will comply with these standards and what needs to be adapted (if anything).</p> <p>CR14: Please include a table listing how each project component/activities would relate to the different standards/regulations of the country.</p>	<p>Table 2 on page 29 has been added, listing how component 1 relates to national and international standards. However, the same should be carried for components 2 and 3, with due consideration of Gender and Indigenous policies/standards at the national and international level.</p>
	10. Is there duplication of project/programme with other funding sources?	<p>Unclear.</p> <p>The proposal mentions two projects that can be complementary or similar to the proposed project: the European Union Electrification Project which aims to install mini grids in 6-7 villages that currently have no access to electricity; and three projects implemented by the Belize Social Investment Fund (BSIF), which aim is to rehabilitate existing water systems.</p>	<p>CR15 and CR16: Not clear.</p> <p>As per further information in Part II Section H (Pages 29-30) complementary projects have been added to and developed. However, it would be interesting to understand more about the possible information flows that will occur between them. Specifically, the riparian forests work in the Enhanced Direct Access project, as this may be key to the development of alternative</p>

		<p>CR15: Please specify synergies and complementarities with the following projects:</p> <ol style="list-style-type: none"> 1. The UAE-Caribbean Renewable Energy Fund (UAE-CREF) which will bring modern electricity services to three remote communities in the country (US\$50 million). 2. Indigenous Female Solar Engineers Scaling up Solar Energy to Machakilha and Graham Creek which has been initiated in the Toledo District and it refers to small solar-powered water systems. 3. There is no mention of the Enhanced Direct Access project in Belize that is building community resilience via transformative adaptation. This project proposal also has water shed management strategies and riparian forest development which can dovetail or overlap with component 2 this project. 	<p>livelihoods and both projects can support one another (despite being in different areas).</p> <p>Similarly, Annex 2 on Consultation Reports (Pages 3 and 7) mentions other agencies working in the communities on water related issues, it would be advisable to describe lessons learned from their activities, and possible synergies. Especially with the work carried out by 'Hope Spring Water' on improving water wells on the Toledo District, and educational programmes on clean water.</p>
--	--	--	---

		CR16: Please describe the lessons learned and best practice gathered from the initiatives mentioned above.	
	11. Does the project/programme have a learning and knowledge management component to capture and feedback lessons?	<p>Largely yes.</p> <p>Component 3 of the project is directed towards increasing the knowledge of local communities on the importance of water resources and ways to secure resources in a future of climate uncertainty linked to climate change and vulnerability, it includes campaigns and training of local communities and it aims at replication of best practices. However, the project is especially missing the fostering and cultivation of feedback loops/engagement with local communities (and other stakeholders), to better strengthen the sense of where is change needed or where there is dissatisfaction with an existing activity.</p>	<p>CR17: Clear, as per information was provided on Part II Section I (Pages 30-31)</p> <p>The revised proposal has provided details on how a multistakeholder approach will improve collaborative action across departments. Similarly, the proposal mentions the agencies that will be consulted along the process. The EE aspires to utilize lessons learned to garner support to advance its work with other communities that have similar characteristics, to begin the process of assessing their water supply needs and potentially adopting similar innovative practices.</p> <p>CR18: Clear. Please refer to the comments to CR7 above.</p>

		<p>CR17: Please define how collaborative actions will be strengthened across all levels and how the knowledge capturing aspects of the project (envisaged under component 3), will prove useful to the scaling up of innovative actions in other communities.</p> <p>CR18: Please clarify how the project will overcome language barriers in envisaged trainings considering the diversity languages of the indigenous communities in the target areas.</p> <p>CR19: Please clarify how the digitalize water board will work/be used in areas that do not have access to electricity within the target communities described in the proposal.</p>	<p>CR19: Clear, as per the clarification provided in Part II Section I (Page 31).</p> <p>The proposal will facilitate access to electricity as part of delivering the digitalized water boards - Component 3.</p>
	<p>12. Has a consultative process taken place, and has it involved all key stakeholders, and vulnerable groups, including gender considerations in compliance with the Environmental and Social</p>	<p>Yes.</p> <p>Under section II.H, it is mentioned that the initial design and project development stage involved the engagement of numerous entities (National Hydrological Service</p>	<p>CR20: Clear, as per the clarification provided in Part II Section J (Page 32).</p> <p>The proposal has built on the inclusion of the community members as recipients of the</p>

	<p>Policy and Gender Policy of the Fund?</p>	<p>(NHS), Protected Areas Conservation Trust (PACT), Caribbean Community Climate Change Centre (CCCCC), Ministry of Health and Wellness (MOHW), Local Government (Community Leaders and Water Board Members), local NGOs and communities that will contribute to or will benefit from the project interventions. However, the proposal is missing an explanation of how the project/programme <i>will continue</i> to be co-developed together with the communities most vulnerable to climate change including the entities that play a vital role.</p> <p>CR20: Please clarify the action of the communities (including women, youth, indigenous groups) in the development and implementation of the water facilities. How will local communities be engaged as both <i>recipients of innovation</i> and, by supporting them with tools and resources, also as <i>innovators</i>?</p> <p>The participatory process is at the core of the design phase, not only limited to planning, budgeting,</p>	<p>innovation and co-creators of the selected innovation. As recipients, the communities will benefit from the integration of new adaptive practices that minimize their risk to climatic changes, such as change in rainfall patterns that threaten water usage or instances of torrential rains that result in flooding. As innovators, the community will work closely with the EE to devise these new adaptive technologies and practices that will not only provide them with a water system, but a new way of life that is compatible with their traditional practices and needs in the face of climate change.</p> <p>CAR3: Not Clear.</p> <p>Consultation Reports have been included as Annex 2 (Pages 0-8) for two of the communities. Similar consultations should be presented for the other 2 targeted communities, as part of the participatory process and to identify the needs of the community members.</p>
--	--	---	---

		<p>action and M&E systems as described in the proposal.</p> <p>CAR3: Kindly provide consultation reports (including those conducted with women and identified vulnerable groups) in an Annex to the proposal. Virtual consultations are acceptable.</p> <p>Please note that at the concept stage, an initial consultative process has to take place, with key stakeholders of the project/programme to the extent possible.</p>	
	13. Is the requested financing justified on the basis of full cost of adaptation reasoning?	<p>Needs further development. The proposal briefly presents the activities that will take place; however, it needs to build on presenting the different scenarios for each component -with and without the funding of the AF.</p> <p>CR21: Please provide a breakdown in greater detail of the project components and the two possible scenarios -with and without AF funding.</p>	<p>CR21: Clear, as per the information provided in Part II Section L (Pages 33-35).</p> <p>The proposal has strengthened its funding justification by providing two possible scenarios with and without AF Funding for each component.</p> <p>Kindly note, the values provided should be adapted to match those presented on the Components and Financing section.</p>

	14. Is the project / program aligned with AF's results framework?	Yes. The project is aligned with outcomes 8, 2, 3, 4, 5 and 6 of the AF Strategic Results Framework. (Pages 34-39)	-
	15. Has the sustainability of the project/programme outcomes been taken into account when designing the project?	<p>Needs further development.</p> <p>CR22: Please consider a hydrological assessment to ensure that the water systems can provide the volume of water and recharge rate needed.</p> <p>CR23: Please clarify what would be the maintenance process/costs of the systems and who will be in charge and who will pay?</p>	<p>CR22: Clear, as per clarification provided in page 17 and Part II Section M (Page 35).</p> <p>The proposal clearly states the importance of a prior hydrological assessment to guarantee the project's success. In addition, it asserts that prior to the selection of an appropriate system the NHS, EE and the MOHW will conduct a joint hydrological investigation/assessment. This selection process will likewise consider traditional knowledge.</p> <p>CR23: Not clear.</p> <p>As per information in page 35. The proposal is no able to determinate the rates that will be charged to community members. The aim is that community members will be trained for the maintenance of the systems and that payments will be reinvested in their maintenance. However, providing an estimate of the cost will allow to determinate the willingness of community</p>

			members to welcome the new technology/(ies).
	<p>16. Does the project /programme provide an overview of environmental and social impacts / risks identified, in compliance with the Environmental and Social Policy and Gender Policy of the Fund?</p>	<p>Needs further development.</p> <p>CAR4: Please include the ESP categorization of the project (A, B, or C).</p> <p>All risks are marked as low to no risk. Since these are vulnerable communities that would have now access to new technologies, new management systems, significant development works, and changes in livelihoods, kindly consider these changes within the communities and define what risks will they entail.</p> <p>CAR5: Please revise the risk identification table to ensure that the focus of the risk's identification is on the risk of negative impacts, and not about the outcome of the balance of negative impacts and positive outcomes.</p> <p>CAR6: In the table in section II.N there is no risk identification for indigenous people. Please include any anticipated risks to these groups, which might also include risks related to access and</p>	<p>CAR 4: Clear, as per information provided in Part II Section N (Page 36), an ESP categorization of the project has been added.</p> <p>CAR 5: Clear, as per revisions to Part II Section N (Pages 36-42).</p> <p>Risk and outputs tables have improved and now describe in more details the risks that are key to the inclusive and innovative processes, and crucial to delivering this proposal. In addition, the risk table better reflects the innovation project that is being described in the proposal.</p> <p>CAR 6: Clear, as per information provided in Part II Section N (Pages 39-41).</p> <p>Risk identification for indigenous people, as well as inherent risks to the principles 'Conservation and Biological Diversity' and 'Natural Habitats' has been included.</p>

		<p>inclusion of these groups. There are also certain inherent risks to the principles 'Conservation and Biological Diversity' and 'Natural Habitats'. For e.g., over-extraction of water can lead to dry rivers or declining groundwater levels. A hydrogeological assessment can be used to determine safe water extraction levels.</p> <p>CR24: Please clarify if a feasibility study for the extraction of water from rivers will be carried out during full proposal development stage.</p>	<p>CR 24: Clear, as per clarification provided on page 31 on the feasibility study.</p> <p>The feasibility water extraction from rivers will be examined during the development of the full proposal and further determined during the project implementation.</p>
Resource Availability	1. Is the requested project funding within the parameters for large grants set by the Board?	<p>Yes. The total amount requested is 4,970,000 USD.</p> <p>CAR7: Please consider reviewing the Components and Financing section (USD 4,969,950).</p>	<p>CAR 7: Clear, as per amendments in pages 15-16.</p> <p>Total amount presented now on the Component and Financing section adds to USD 4,970,000.</p>
	1. Is the Implementing Entity Management Fee at or below 8.5 per cent of the total project budget before the fee? Are the Project/Programme Execution Costs at or below 9.5 per cent of the total	<p>No. The IE fee is above cap at 9.29%</p>	<p>CAR 8: Clear, as per revisions in page 16.</p> <p>The IE fee has been revised to USD 389,300 equivalent to 8.50%</p>

	<p>project/programme budget (including the fee)?</p> <p>For regional projects/programmes, are the administrative costs (Implementing Entity Management Fee and Project/Programme Execution Costs) at or below 20 per cent of the total project/programme budget?</p>	CAR8: Please review the IE fee allocation to be below 8.5% of the total budget.	of the total project budget.
Eligibility of IE	1. Is the project submitted through an Implementing Entity accredited by the Board?	Yes. PACT is an Accredited National Implementing Entity.	-
Implementation Arrangements	1. Are there measures in place for the management of for environmental and social risks, in line with the Environmental and Social Policy of the Fund? Proponents are encouraged to refer to the Guidance document for Implementing Entities on compliance with the Adaptation Fund Environmental and Social Policy, for details.	n/a at concept stage	
	2. Are there measures for financial and project/programme risk management	n/a at concept stage	
	3. Are arrangements for monitoring and evaluation	n/a at concept stage	

	clearly defined, including budgeted M&E plans and sex-disaggregated data, targets and indicators, in compliance with the Gender Policy of the Fund?		
	4. Is a budget on the Implementing Entity Management Fee use included?	n/a at concept stage	
	5. Is an explanation and breakdown of the execution cost included?	n/a at concept stage	
	6. Does the M&E Framework include a break-down of how implementing entity IE fees will be utilized in the supervision of the M&E function?	n/a at concept stage	
	7. Is the timeframe for the proposed activities adequate?	n/a at concept stage	
	8. Is a summary breakdown of the budget for the proposed activities included?	n/a at concept stage	
	9. Does the project/programme's results framework align with the AF's results framework? Does it include at least one core outcome indicator from the Fund's results framework?	n/a at concept stage	
	10. Is a disbursement schedule with time-bound milestones included?	n/a at concept stage	



ADAPTATION FUND

ADAPTATION FUND BOARD SECRETARIAT TECHNICAL REVIEW OF PROJECT/PROGRAMME PROPOSAL

PROJECT/PROGRAMME CATEGORY: Innovation Single Country Project Concept

Country(ies)/Region: **Belize**
 Project Title: **Securing Water Resources through Solar Energy and Innovative Adaptive Management (SEAM)**
 Thematic Focal Area:
 Implementing Entity: **Protected Areas Conservation Trust (PACT)**
 Executing Entities: **Ministry of Rural Transformation, Community Development, Labour and Local Government**
 AF Project ID: **AF00000272**
 IE Project ID: Requested Financing from Adaptation Fund (US Dollars): **4,970,000**
 Reviewer and contact person: **Claudia Lasprilla** Co-reviewer(s): **Alyssa Gomes, Eleanor Saunders**
 IE Contact Person:

Technical Summary	<p>The project “Securing Water Resources through Solar Energy and Innovative Adaptive Management (SEAM)” aims to decrease the uncertainty of water availability in communities by providing climate innovative and adaptive mechanisms to address current and future climate change impacts on water resources. This will be done through three interlinked components below:</p> <p><u>Component 1:</u> Improved Water Supply Systems (USD 3,439,375)</p> <p><u>Component 2:</u> Community Based Watershed Protection and Management (USD 300,000)</p> <p><u>Component 3:</u> Improved Governance and Enhanced Appreciation for Water Resources (USD 376,108)</p> <p><u>Requested financing overview:</u></p>
-------------------	--

	<p>Project/Programme Execution Cost: USD 432,017</p> <p>Total Project/Programme Cost: USD 4,547,500</p> <p>PACT Implementing Fee: USD 422,450</p> <p>Financing Requested: USD 4,970,000</p> <p>The proposal includes a request for a project formulation grant (PFG) and project formulation assistance grant (PFA) of USD 30,000 and USD 20,000 respectively.</p> <p>The initial technical review found that the proposal needs further development in terms of the extent of the project components and justification of the innovation rationale of the proposed interventions. Similarly, it raises several issues such as: cost-effectiveness, sustainability, project duplication, gender inclusion and consideration of local communities in project design and decision-making, as it is discussed in the number of Clarification Requests (CRs) and Corrective Action Requests (CARs) raised in the review.</p>
Date	August 26, 2021

Review Criteria	Questions	Comments
Country Eligibility	3. Is/are the beneficiary country/countries a developing country/countries Party/Parties to the Kyoto Protocol?	Yes.
	4. Is the participating country / are all participating countries developing countries particularly vulnerable to the adverse effects of climate change?	Yes, as described on pages 2 and 3 Belize's flat and low-lying coastal areas and islands make the country highly vulnerable to climate changes. The water sector is one of the most affected areas due to rainfall variability, deforestation, flooding, and soil erosion, among other factors. This uncertainty of water affects local communities, as well as natural systems.
Project Eligibility	17. Has the designated government authority for the Adaptation Fund / Have the governments' designated authorities for the Adaptation Fund endorsed the project?	Yes. As per the endorsement letter dated 19 July 2021.
	18. Does the project/programme support concrete adaptation actions to assist the country or countries in addressing adaptive capacity to the adverse effects of climate change and build in climate resilience? In case of regional project/programme, is there added value using the regional approach, compared to implementing similar activities in each country individually?	Largely yes. The proposal provides an alternative to current water supply and distribution systems in 4 target communities. The usage of solar energy to extract water from nearby rivers is an adaptive action to climate change that will enhance access to potable water to communities that are not connected to the national water supply system. Moreover, the project intends to involve communities in the restoration and protection of watersheds, and to promote

		<p>capacity building by carrying campaigns and trainings among beneficiaries and government officials to effectively manage water systems.</p> <p>The climate vulnerabilities of the four target communities, however, have not been consistently described. For example, only the climate change impacts in Boom Creek have been clearly described i.e., seasonal extreme flooding. While the socio-economic vulnerabilities of the four target areas have been explained, the link between climate change impacts and water supply (availability and quality) in the target areas is missing.</p> <p>CR1: Please provide an explanation on the link between climate change impacts and water supply for the 4 target communities.</p> <p>Link demonstrated under PART I – Project Background and Context.</p>
	<p>19. Does the project/programme help spread innovative adaptation practices, tools and technologies that have demonstrated success in one country to another country, countries or regions; and/or</p> <p>Does the project/programme pilot at larger scale innovative adaptation practices, tools or technologies generated that have demonstrated viability at a small scale?</p>	<p>Needs further development.</p> <p>The proposal briefly mentions a project in the Toledo district (Conejo Creek and Pueblo Viejo villages) where communities faced similar water supply challenges. Hybrid Power Photovoltaic Systems were piloted in these villages which proved effective in ensuring reliable supply of water.</p> <p>CR2: Please include additional information on the project in the Toledo region and the rationale for why it is considered the best innovation to bring to the target areas against other available options. If the goal is to scale-up</p>

	<p>this project, please define the innovation process that will take place.</p> <p>Addressed under PART II B. Innovation process described as the scale up of technologies and practices that will be adapted to target areas. Some practices and technologies will require testing to devise those best suited for target communities.</p> <p>The project presents clear features of an adaptation project in its promotion of alternative water supply distribution systems to decrease the uncertainty in the availability of water resources in vulnerable communities. However, the innovation rationale needs to be further developed.</p> <p>CR3: Please describe how the project is 'innovation roll out' of new/adapted technologies as opposed to a standard roll out. Please explain why water supply systems powered by solar energy are an innovative approach within the Belize context and for the target communities.</p> <p>CR4: Please clarify the methodology of roll out of the proposed innovation by considering a few key questions:</p> <ul style="list-style-type: none"> - What are the challenges faced in rolling out this innovation to these communities? - How will the challenges be integrated into the activities under each component?
--	---

		<ul style="list-style-type: none"> - What are the possible pathways to adapt the solar water technologies, sanitizing systems, and storage systems to match the needs of each vulnerable community and how will this form an integrated part of the project? <p>CR 3 and 4 addressed under PART II C . the innovation roll out methodology and principles have been described including those for addressing challenges and adaptive pathways.</p> <p>Consider that in the case of this specific project, the innovation process might be through exploring possible solutions/ testing different innovations the ground through a participatory process (co-creating with local communities).This is an essential part of an innovation process and can be included as part of the project components.</p>
	<p>20. Does the project/programme provide economic, social and environmental benefits, particularly to vulnerable communities, including gender considerations, while avoiding or mitigating negative impacts, in compliance with the Environmental and Social Policy of the Fund?</p>	<p>To some extent.</p> <p>The project targets four vulnerable communities to water supply and food security. The majority of the households in these villages are indigenous people and more than 50% are women. The communities will benefit from potable water, enabling them to carry out basic daily functions and reducing the prevalence of diseases.</p> <p>CR5: Please clarify the expected benefits of the proposed actions in the vulnerable communities and how might this</p>

	<p>lead to further innovation (e.g. alternative livelihoods, management of riparian landscapes etc.)</p> <p>Addressed Under PART II D. Actions and proposed process might present other opportunities for the communities to devise innovative solutions to current practices that bear negative impacts on the natural environment and further benefit the communities. It may also present opportunities for new financial markets thereby enabling communities to thrive independently and survive in a changing climate. Additionally social, environment and economic benefits have been included.</p> <p>There is mention that alternative livelihoods will be sought under component 2 implying that it is not yet known what these options will be. It is also important to further elaborate on the process by which this will occur</p> <p>CR6: Please clarify the alternative livelihood actions that will be considered under component 2 and further elaborate on the process by which this will occur.</p> <p>Addressed Under PART II D. The alternative livelihood actions will be selected during project implementation in conjunction with the communities and can cover a broad range of actions. As the characteristics of each community</p>
--	--

		<p>differs, the alternative livelihood actions will be dependent on the location of the community, traditional practices, materials readily available and the traditional skills of the men and women in the community.</p> <p>These will be examined initially during the project development phase under the Social Assessment.</p>
	<p>21. Does the project engage, empower and/or benefit the most vulnerable communities and social groups?</p>	<p>To some extent.</p> <p>The project is directed to the most vulnerable communities; however, further development of local voices is needed and encouraged. In addition, gender considerations should be better detailed.</p> <p>The project proposal includes a PFG request to carry out a stakeholder consultation report, this will enhance the engagement and empowerment of local communities in shaping the project.</p> <p>CAR1: Please revise table of total population versus breakdown by male/female.</p> <p>Addressed under PART I page 9.</p>

		<p>CR7: Provided that the project will target indigenous communities with different languages, please clarify how these languages barriers will be dealt with in the project and across communities.</p> <p>Addressed in PART II D. Members of communities prefer to communicate in their native language, Mayan (Mopan and Q'eqchi) and Spanish. The EE has been working in these communities and have point persons to aid in this process. These persons, employed by the EE will continue to provide support to bridge the language barrier in the target communities. The RDOCs will also support this action. Additionally, the EE will also work closely with the Ministry of Human Development, Families and Indigenous Peoples' Affairs, Mayan Leaders Alliance, Belize National Indigenous Council and Toledo Alcalde Association.</p> <p>CR8: Please provide a description/disaggregation on the groups that will benefit from the project activities, including their current income-generating activities to better understand the positive economic impact of the project activities, and how will technical barriers be dealt with when managing the new water supply system.</p> <p>Addressed in PART II D. Available disaggregated data was presented on the income generating activities of the</p>
--	--	---

		population and the methodology for address the technical barriers for managing the system have been included.
	22. Does the project advance gender equality and the empowerment of women and girls?	<p>To some extent.</p> <p>The proposal describes how the participatory planning process will inform the roles and responsibilities of different community groups, including women and youth, during the implementation process. Moreover, it includes a PFA request to conduct a Gender and Social assessment.</p> <p>CR9: Please provide how the project will affect the daily lives of the 745 women in the communities – presenting/comparing the current activities of the women and girls with the ones the project will offer, and clarify also how women’s participation will be ensured in the alternative livelihood programs.</p> <p>Addressed under PART II D. Most women in communities are care providers and are traditionally tasked with domestic work. Through the alternative livelihood actions, women can participate in income earning activities supporting the needs of their households. Activities targeted under this component will be in alignment with the cultural and traditional practices of the Indigenous community to ensure that women can actively partake in the project. The rights and cultural norms of all members will be carefully considered to ensure inclusion.</p> <p>CR10: Please clarify how gender equality will be ensured within trainings and capacity building activities and how the project will ensure their inclusion in planned activities.</p> <p>Addressed under PART II D. To ensure social inclusion, both men and women will be given equal opportunity to</p>

		<p>participate in all training and capacity building activities under Component 3. In Indigenous communities, with permission from the Alcalde, the project will ensure that if needed, men and women will be engaged separately, in accordance with traditional norms, to ensure that women can fully participate in the training and capacity building activities. The project will ensure that the proper protocols for engagement are adhered to. At the national level, both men and women will be provided with information from the knowledge dissemination campaigns.</p> <p>CAR2: Please include a gender analysis/ initial gender assessment as an annex to the document.</p> <p><u>Annex 3 – Gender Analysis included.</u></p>
	<p>23. Is the project/programme cost-effective? In the case of regional project/ programmes, does the regional approach support cost effectiveness? Does the project engage, empower and/or benefit the most vulnerable communities and social groups?</p>	<p>Unclear.</p> <p>The benefits the project will provide in terms of water supply and improving food security are defined in the proposal, however, further development of the system is needed to assess its cost-effectiveness.</p> <p>CR11: Please consider describing the challenges of solar systems in terms of maintenance/repair. What locally led approaches will be put in place to ensure sustainability and longer term maintenance?</p> <p><u>Addressed under PART II E. The challenges related to the solar system are centred around the technical maintenance of the system, for which trained personnel is required. To</u></p>

		<p>address the challenge the project will utilize the network that exists under a previous project the Indigenous Female Solar Engineers Project to train personnel in each community to perform the day-to-day management and maintenance of the system. Additionally, agreements between the solar panel supplier will be established for scheduled maintenance.</p> <p>CR12: Considering flat and low-lying characteristics of Belize, please clarify measures that the project will put in place to climate proof systems/facilities against hurricanes/flooding?</p> <p>The design of these systems will take into consideration the low-lying characteristic of Belize as well as the natural disasters that the country experiences. In the design of the system, prior to its construction, the engineers will take into consideration building requirements to withstand a hurricane, location of system to avoid placement in areas prone to flood, the construction requirements to avoid the building of facilities that are below standards and avoid the contamination of water system (elevated housing) and the traditional practices of the community that could potentially be hindered by the location of water system.</p> <p>CR13: The project mentions that existing structures will be improved to ensure sustainability and cost effectiveness. Please clarify where this is included in the budget and what structures will be improved.</p>
--	--	---

		<p>Addressed under PART II E. Correction to text, improve existing operations structures and not existing structures such as building or water supply facilities. There are budget allocations for the improvement of the managerial systems via the local water boards and the standardization of monitoring via the digitization of the water system under Component 3.</p>
	24. Is the project / programme consistent with national or sub-national sustainable development strategies, national or sub-national development plans, poverty reduction strategies, national communications and adaptation programs of action and other relevant instruments?	<p>Yes, the project is aligned with Belize's Growth and Sustainable Development Strategy, Belize's National Climate Change Policy, Strategy and Action Plan (NCCPSAP), Belize's National Gender Policy and it contributes to 6 SDGs. In addition, to other national policies, including: Forest Policy, National Adaptation Strategy and Action Plan for the Water Sector, and the Integrated Water Resources Management Policy.</p>
	25. Does the project / programme meet the relevant national technical standards, where applicable, in compliance with the Environmental and Social Policy of the Fund?	<p>Needs further development.</p> <p>The proposal enumerates technical standards that the project will adhere to, in terms of construction codes, potable water and ESP. However, the proposal will benefit from presenting a description of how each component will comply with these standards and what needs to be adapted (if anything).</p> <p>CR14: Please include a table listing how each project component/activities would relate to the different standards/regulations of the country.</p>

		Addressed under PART II G. Table is included for section.
	26. Is there duplication of project/programme with other funding sources?	<p>Unclear.</p> <p>The proposal mentions two projects that can be complementary or similar to the proposed project: the European Union Electrification Project which aims to install mini grids in 6-7 villages that currently have no access to electricity; and three projects implemented by the Belize Social Investment Fund (BSIF), which aim is to rehabilitate existing water systems.</p> <p>CR15: Please specify synergies and complementarities with the following projects:</p> <ol style="list-style-type: none"> 4. The UAE-Caribbean Renewable Energy Fund (UAE-CREF) which will bring modern electricity services to three remote communities in the country (US\$50 million). 5. Indigenous Female Solar Engineers Scaling up Solar Energy to Machakilha and Graham Creek which has been initiated in the Toledo District and it refers to small solar-powered water systems. 6. There is no mention of the Enhanced Direct Access project in Belize that is building community resilience via transformative adaptation. This project proposal also has water shed management strategies and riparian forest development which can dovetail or overlap with component 2 this project.

		<p>CR16: Please describe the lessons learned and best practice gathered from the initiatives mentioned above.</p> <p>Both CR 15 and 16 Addressed under PART II H. Project synergies, complementarities and lessons learnt were described.</p>
	<p>27. Does the project/programme have a learning and knowledge management component to capture and feedback lessons?</p>	<p>Largely yes.</p> <p>Component 3 of the project is directed towards increasing the knowledge of local communities on the importance of water resources and ways to secure resources in a future of climate uncertainty linked to climate change and vulnerability, it includes campaigns and training of local communities and it aims at replication of best practices. However, the project is especially missing the fostering and cultivation of feedback loops/engagement with local communities (and other stakeholders), to better strengthen the sense of where is change needed or where there is dissatisfaction with an existing activity.</p> <p>CR17: Please define how collaborative actions will be strengthened across all levels and how the knowledge capturing aspects of the project (envisaged under component 3), will prove useful to the scaling up of innovative actions in other communities.</p>

		<p>Addressed under PART II I. The knowledge management component will further strengthen the multistakeholder approach needed for effective water and climate change management and will also serve as the faucet through which the useful scale up of the project will be successful.</p> <p>CR18: Please clarify how the project will overcome language barriers in envisaged trainings considering the diversity languages of the indigenous communities in the target areas.</p> <p>The EE has a longstanding working relationship with the communities and have staff that speak the two Mayan Languages and Spanish to aid in the process. It is the aim of the EE to utilize these readily available translators to aid the process.</p> <p>CR19: Please clarify how the digitalize water board will work/be used in areas that do not have access to electricity within the target communities described in the proposal.</p> <p>Addressed under PART II I.</p>
	28. Has a consultative process taken place, and has it involved all key stakeholders, and vulnerable groups, including gender considerations in	<p>Yes.</p> <p>Under section II.H, it is mentioned that the initial design and project development stage involved the engagement</p>

	<p>compliance with the Environmental and Social Policy and Gender Policy of the Fund?</p>	<p>of numerous entities (National Hydrological Service (NHS), Protected Areas Conservation Trust (PACT), Caribbean Community Climate Change Centre (CCCCC), Ministry of Health and Wellness (MOHW), Local Government (Community Leaders and Water Board Members), local NGOs and communities that will contribute to or will benefit from the project interventions. However, the proposal is missing an explanation of how the project/programme <i>will continue</i> to be co-developed together with the communities most vulnerable to climate change including the entities that play a vital role.</p> <p>CR20: Please clarify the action of the communities (including women, youth, indigenous groups) in the development and implementation of the water facilities . How will local communities be engaged as both <i>recipients of innovation</i> and, by supporting them with tools and resources, also as <i>innovators</i>?</p> <p>Addressed under PART II J. Further information on the engagement of communities during the project development and project implementation phases have been provided.</p> <p>The participatory process is at the core of the design phase, not only limited to planning, budgeting, action and M&E systems as described in the proposal.</p> <p>CAR3: Kindly provide consultation reports (including those conducted with women and identified vulnerable</p>
--	---	---

		<p>groups) in an Annex to the proposal. Virtual consultations are acceptable.</p> <p>Consultation Reports included as Annex 2.</p> <p>29. Please note that at the concept stage, an initial consultative process has to take place, with key stakeholders of the project/programme to the extent possible.</p>
	30. Is the requested financing justified on the basis of full cost of adaptation reasoning?	<p>Needs further development. The proposal briefly presents the activities that will take place; however, it needs to build on presenting the different scenarios for each component -with and without the funding of the AF.</p> <p>CR21: Please provide a breakdown in greater detail of the project components and the two possible scenarios -with and without AF funding.</p> <p>Addressed under PART II L. Further information on the project components provided and the two possible scenarios.</p>
	31. Is the project / program aligned with AF's results framework?	<p>Yes. The project is aligned with outcomes 8, 2, 3, 4, 5 and 6 of the AF Strategic Results Framework. (Pages 34-39)</p>
	32. Has the sustainability of the project/programme outcomes been taken into account when designing the project?	<p>Needs further development.</p> <p>CR22: Please consider a hydrological assessment to ensure that the water systems can provide the volume of water and recharge rate needed.</p> <p>Addressed under PART II M. The selection of an appropriate water source for the water systems to be</p>

		<p>constructed in each community will require the completion of a hydrological investigation/assessment. This assessment will be conducted by three primary agencies the National Hydrological Service, the EE and the Ministry of Health and Wellness.</p> <p>CR23: Please clarify what would be the maintenance process/costs of the systems and who will be in charge and who will pay?</p> <p>Address under PART II M. The systems will be managed and maintained by the Local Water Boards will support from the EE and the Ministry of Health and Wellness. The system will be maintained by a pump operation and a licensed technician, who will be trained under the project. An assessment of social and financial characteristics of each community will be conducted to determine the rates to be paid by community members. The payments will be reinvested into the system to support its maintenance in conjunction with the financial support to be provided by the EE.</p>
	<p>33. Does the project /programme provide an overview of environmental and social impacts / risks identified, in compliance with the Environmental and Social Policy and Gender Policy of the Fund?</p>	<p>Needs further development.</p> <p>CAR4: Please include the ESP categorization of the project (A, B, or C).</p> <p>Addressed under PART II N. Categorization included, project is categorized as a Category C project.</p> <p>All risks are marked as low to no risk. Since these are vulnerable communities that would have now access to new technologies, new management systems, significant</p>

		<p>development works, and changes in livelihoods, kindly consider these changes within the communities and define what risks will they entail.</p> <p>CAR5: Please revise the risk identification table to ensure that the focus of the risk's identification is on the risk of negative impacts, and not about the outcome of the balance of negative impacts and positive outcomes.</p> <p>Addressed under PART II N. All risks were reviewed and adjusted for alignment with AF risk identification requirements.</p> <p>CAR6: In the table in section II.N there is no risk identification for indigenous people. Please include any anticipated risks to these groups, which might also include risks related to access and inclusion of these groups. There are also certain inherent risks to the principles 'Conservation and Biological Diversity' and 'Natural Habitats'. For e.g. over-extraction of water can lead to dry rivers or declining groundwater levels. A hydrogeological assessment can used to determine safe water extraction levels.</p> <p>Addressed under PART II N. The risks associated with principles 2, 3, 5, 7, 9, 10, 13, 14 and 15 have been further examined and included in the concept note.</p>
--	--	---

		<p>CR24: Please clarify if a feasibility study for the extraction of water from rivers will be carried out during full proposal development stage.</p> <p>Yes, the feasibility of extraction of water from rivers will be examined during the development of the full proposal and further determined during project implementation. Addressed on page 31.</p>
Resource Availability	2. Is the requested project funding within the parameters for large grants set by the Board?	<p>Yes. The total amount requested is 4,970,000 USD.</p> <p>CAR7: Please consider reviewing the Components and Financing section (USD 4,969,950).</p> <p>Addressed on page 14 on the proposal. Budget was adjusted for alignment.</p>
	<p>2. Is the Implementing Entity Management Fee at or below 8.5 per cent of the total project budget before the fee? Are the Project/Programme Execution Costs at or below 9.5 per cent of the total project/programme budget (including the fee)?</p> <p>For regional projects/programmes, are the administrative costs (Implementing Entity Management Fee and Project/ Programme</p>	<p>No. The IE fee is above cap at 9.29%</p> <p>CAR8: Please review the IE fee allocation to be below 8.5% of the total budget.</p> <p>Addressed on Page 14. I.E fee allocation adjusted to 8.5% of the total project/programme cost – USD \$389,300. Subsequent adjustments to the budget have been made to account for the above change.</p>

	Execution Costs) at or below 20 per cent of the total project/programme budget?	
Eligibility of IE	2. Is the project submitted through an Implementing Entity accredited by the Board?	Yes. PACT is an Accredited National Implementing Entity.
Implementation Arrangements	11. Are there measures in place for the management of for environmental and social risks, in line with the Environmental and Social Policy of the Fund? Proponents are encouraged to refer to the Guidance document for Implementing Entities on compliance with the Adaptation Fund Environmental and Social Policy, for details.	n/a at concept stage
	12. Are there measures for financial and project/programme risk management	n/a at concept stage
	13. Are arrangements for monitoring and evaluation clearly defined, including budgeted M&E plans and sex-disaggregated data, targets and indicators, in compliance with the Gender Policy of the Fund?	n/a at concept stage
	14. Is a budget on the Implementing Entity Management Fee use included?	n/a at concept stage
	15. Is an explanation and breakdown of the execution cost included?	n/a at concept stage
	16. Does the M&E Framework include a break-down of how implementing entity IE fees will be utilized in the supervision of the M&E function?	n/a at concept stage
	17. Is the timeframe for the proposed activities adequate?	n/a at concept stage
	18. Is a summary breakdown of the budget for the proposed activities included?	n/a at concept stage
	19. Does the project/programme's results framework align with the AF's results framework? Does it include at least one core outcome indicator from the Fund's results framework?	n/a at concept stage

	20. Is a disbursement schedule with time-bound milestones included?	n/a at concept stage
--	---	----------------------



ADAPTATION FUND

**PROGRAMME ON INNOVATION:
LARGE GRANTS PROJECTS**

REQUEST FOR PROJECT FUNDING FROM THE ADAPTATION FUND

Complete documentation should be sent to:

The Adaptation Fund Board Secretariat
1818 H Street NW
MSN N7-700
Washington, D.C., 20433
U.S.A
Fax: +1 (202) 522-3240/5
Email: afbsec@adaptation-fund.org



ADAPTATION FUND

SINGLE COUNTRY INNOVATION PROJECT CONCEPT PROPOSAL

PART I: PROJECT/PROGRAMME INFORMATION

Title of Project/Programme:	Securing Water Resources through solar energy and innovative adaptive management (SEAM)
Country/ Countries:	Belize
Thematic Focal Area ¹ :	Rural Development and Water Management
Type of Implementing Entity:	National Implementing Entity (NIE)
Implementing Entity:	Protected Areas Conservation Trust (PACT)
Executing Entities:	Ministry of Rural Transformation, Community Development, Labour and Local Government
Amount of Financing Requested:	4,970,000 (in U.S Dollars Equivalent)

Project / Programme Background and Context:

Belize is a country rich in natural resources. This richness has resulted in the country building its major income earning sectors around the natural resources the country has to offer, thereby being heavily dependent on ecosystem services and its proper functioning. Traditional practices and way of life for many of the country's ethnicities also rely heavily on Belize's natural resources. Located on the eastern coast of Central America, Belize has a national territory of 46,620 km², with its coastline extending 386 km and being notable for its rich coastal and marine ecosystems, inclusive of the Belize Barrier Reef System.

Although Belize contributes minimally to climate change the country is impacted by climate change and variability due to its distinct characteristic as a low-lying small island developing state. Majority of the country including its coastal areas and islands are flat and low-lying, making the country highly vulnerable to sea level rise, erosion, storm surges and flooding. Some of the current threats of climate change extend to changes in the intensity, distribution and frequency of extreme weather events, such as storms and hurricanes, sea level rise (SLR),

¹ Thematic areas are: Agriculture, Coastal Zone Management, Disaster risk reduction, Food security, Forests, Human health, Innovative climate finance, Marine and Fisheries, Nature-based solutions and ecosystem based adaptation, Protection and enhancement of cultural heritage, Social innovation, Rural development, Urban adaptation, Water management, Wildfire Management.

increased sea surface temperature, ocean acidification, coral bleaching, drought, wildfires, and changes in crop production. All of which result in direct and indirect threats to the productive sectors of the country.

The water sector is notably a key sector possessing an important commodity necessary for the survival of all local communities. Although the country has an abundance of water resources and a high-water per capita rate, this sector is particularly vulnerable to impacts of climate change as the country extracts majority of its water resources from rivers and groundwater sources. Belize's Third National Communication (TNC) to the UNFCCC, noted that rainfall is projected to decrease more and more from the 2030s to the 2090s leading to worsened drought conditions. The latter will decrease water supply with lower projected levels of rainfall. On the opposite end of the spectrum, given climate uncertainties, the changing climate will also lead to intense rains and flooding during other periods. Additionally, deforestation further threatens water availability by decreasing ecological functionality of watershed thereby affecting water quality. Population growth also impacts the availability of water resources. Belize's TNC highlighted the need for adaptive measures such as the protection and restoration of ecosystems, increased water harvesting, water protection, and promoting sustainable water utilization.

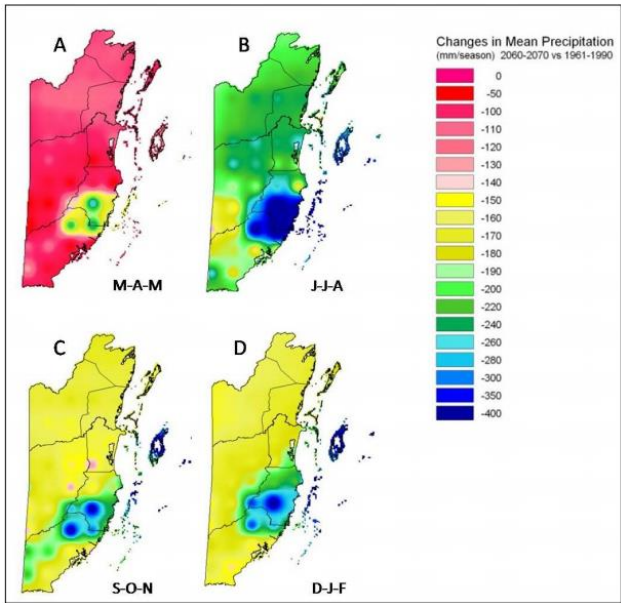


Figure 1: Changes in Precipitation - Rainfall (Source: TNC, 2016)

Mean season rainfall across all months for the country are projected to change for the 2060-2070 period in comparison to the 1961-1990 (Figure 1). Across all months, rainfall is projected to decrease significantly in the southeastern portion of the country. Map B in Figure 1 shows a decrease in seasonal rainfall approaching approximately 300 mm/season in a zone centered over Stann Creek and the southern Toledo District from June to August.

Map C depicts an overall decrease in rainfall of ~ 200 to ~ 220 mm/season for most of Belize from September to November, during Belize's classified Wet Season. The months of December to January, which are within the dry season are projected to have little change in rainfall with an overall decrease of approximately 100 mm/season. In the Toledo District however, this change has been projected between 150 – 200 mm/season in a

centered zone covering the Stann Creek, Cayo, Toledo and Belize Districts.

As the uncertainties of water availability, linked to projected extended dry periods, are expected to negatively affect communities, natural systems and key economic sectors, this project proposes an integrated multiprong approach for the protection and proper management of water resources. The Ministry of Rural Transformation, Community Development, Labour and Local Government, the Executing Entity (EE), has recognized the need to institute a new approach to the management of water through its daily operations in communities across

Formatted: Font: (Default) Arial

Belize. This has also been echoed by the complementary Government Ministries and Departments that work in conjunction with the EE. This approach takes into consideration the human, economic and environmental aspects of water and watershed management, which require synchronization in Belize. The EE and associated Government Entities will champion this new approach to water management in the rural communities of Belize that are detrimentally affected by limited water resources, which are projected to be further restricted with the impacts of climate change.

Dynamics of Target Communities

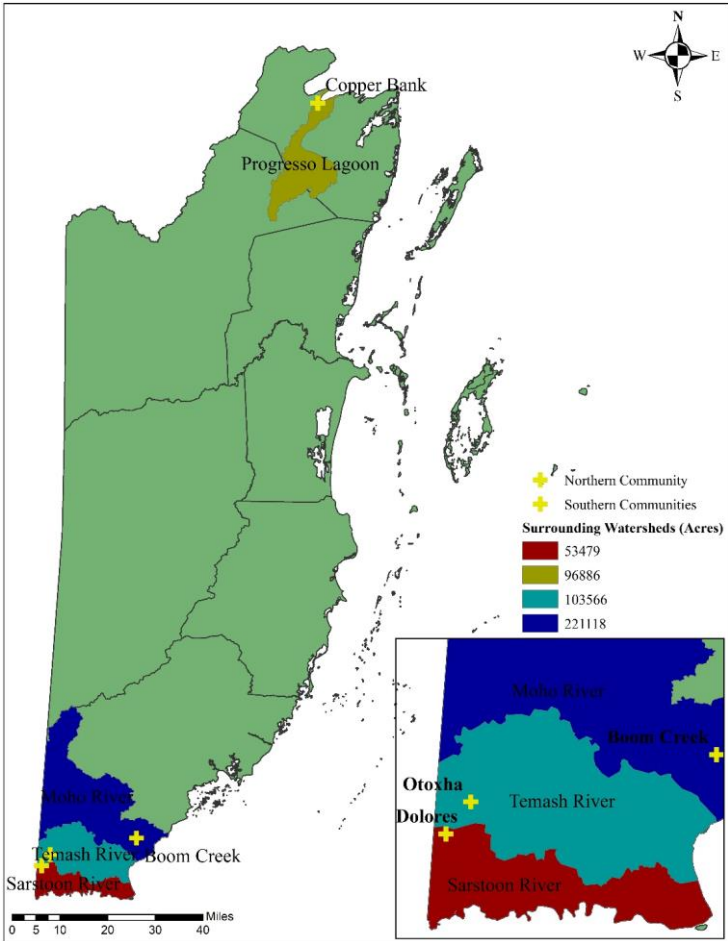


Figure 2: Map Displaying the Four Target Communities

Boom Creek

Boom Creek Village is a lowline area (swamp) located southwest of Punta Gorda Town, Toledo District along the Moho River. The village is approximately 9 km or 5.6 miles from Punta Gorda Town. The village land borders with San Felipe, Midway and John Bejerano Private land towards Punta Gorda Town. It is accessible by road, which was constructed in 1992. The road ends at the last house in the village. During the rainy season, the road to the village floods for extended periods of time. During these events the village is accessed via a 20-minute boat ride on the Moho River. The land in the village is mainly used for agricultural purposes (corn-matambre), and traditionally used on a rotational basis. Approximately, an average of 10 – 15 acres of land is being used for each seasonal crop. A small portion of private

land is cleared for farms (fruit trees etc...) and the harvesting of log or extraction of lumber during the logging season. The village has one primary school and is located within the Moho River Watershed (Figure 2Figure 2).

Formatted: Font: (Default) Arial



Figure 3: Inaccessible Road Boom Creek (Source: Ministry of Rural Transformation)

Figure 4: Government School in Boom Creek (Source: Ministry of Rural Transformation)



Figure 5: Creek in the Center of Boom Creek (Source: Ministry of Rural Transformation)

Otoxha

Otoxha is a tiny Mayan Indigenous community in south-eastern Belize within the Toledo District located near the Temash River. The community is two miles away from the community of Dolores and the nearest urban area is Punta Gorda. Most families in the community live in thatch houses and are subsistence farmers. The village has a multigrade primary school; however, students must travel 1-2 hours to attend secondary school. The main form of transportation to and from the village is by public transportation, buses. The road may become inaccessible during rainy season, because of flooding of the Blue Creek Bridge but there is a short cut that leads into Sunday Wood Village. There is a public health post that is serviced by mobile health clinics in the community approximately every six (6) weeks. The community is located in the Temash Watershed (Figure 2).

The community is situated on rolling slopes, surrounded by secondary vegetation, several small creeks, and swampy areas. The climate in Otoxha is basically humid.

Formatted: Normal

Formatted: Font: (Default) Arial, English (United Kingdom)

Dolores

Dolores Village is located in the south-eastern portion of Toledo District within the Adjacency Zone, which is approximately 6 miles from the Belize-Guatemala Border. It is 2 miles away from Otoxha Village or 50 miles from Punta Gorda Town and is accessible by vehicle on a gravel road constructed in 2003. The road ends at the end of the village. Most families build and dwell in thatch houses along the road leading up to the village. They are mostly subsistence farmers and community lands are mainly used for agricultural purposes, and traditionally is used on a rotational basis. On average of 8 – 10 acres of land is being used individually for each seasonal crop. Secondary vegetation is mainly used for clearing new area for housing, cattle rearing and corn (matambre) and beans. High (virgin) forest is mainly used for rice and corn. Dolores is located in the Sarstoon Watershed (Figure 2).

Formatted: Font: (Default) Arial

Copper Bank

Copper Bank is located along the west bank of Laguna Seca lagoon, which empties in the Corozal Bay in the Corozal District. The village can be accessed by various routes. The first is by road from Orange Walk Town through the villages of San Estevan and Progreso or through Corozal Town crossing the New River by ferry through Pueblo Nuevo. It can also be accessed through the village of Sarteneja by ferry across the mouth of the Laguna Seca Lagoon. The northern community is located within the Progression Lagoon Watershed (Figure 2).

Formatted: Font: (Default) Arial

Climate Change Impacts to Water Availability in communities

Locally there are two seasons namely the dry and rainy season. Floods are very common from June to September but October to January the rate of rainfall is undetermined, thereby limiting the communities access

Formatted: Font: 12 pt, Bold, Italic

Formatted: Footer, Left

Formatted: Font: 12 pt, Bold, Italic

to water in the area. Floods similarly threaten water supply, as flood waters contain a high level of debris and can be contaminated by faecal matter from nearby latrines and livestock. The country has over the past two years experienceed increased frequency and intensity of hurricanes due to climate change that have resulted in large scale flooding to communities, especially those in southern and central Belize. Flood waters in these areas took weeks to recede leaving large scale damage to communities and minimizing access to basic needs such as water and food. During that time the EE- expended a significant portion of its resources to aid communities to recover from the events.

On the opposite end, February to May is dry season and May is the peak of the dry season, where water resources are further limited. The latter presents a challenge for community members that are mainly subsistence farmers, and dependent on the rainfall to water their crops and provide drinking water to livestock. During these seasons water becomes a scarce commodity. In Northern Belize, the driest part of the country, in communities such as Copper Bank, water becomes a significantly limited resource. In previous years, water from lagoons and water bodies such as Sapote Lagoon and Honey Camp Lagoon, dried up completely. Sapote Lagoon and Honey Camp Lagoon. Livelihoods were also affected as these areas weare used for fishing.

This was particularly evident in 2019, when the country experienced a long and extremely hot period and drought. The lack of precipitation in the area for an extended period of time had drastic effects on athe country's agriculture, water supply and even on public health. The Standardized Precipitation Index (SPI) which is an index used to provide early warnings of extended droughts as well as assessing drought severity, was utilized and it determined that long term drought had evolved over most of the Cayo District as well as southern Orange Walk and Western Belize and Stann Creek. Climate Change thereby affects both ends of the spectrum in relation to water availability during Belize's wet and dry seasons.

Formatted: Font:

Social and Economic Status of Target Communities

Many of the target communities are located in remote rural areas of the country with limited access to modern day conveniences. Villages such as Boom Creek, Otoxha and Dolores have no access to electricity via the national grid. The economic and some social factors of the communities are presented below.

Boom Creek Village

In Boom Creek, twenty-fivetwo (225) households have access to solar power and three (3) households still utilize candles and homemade lamps. Current income earning activities include subsistence farming utilizing traditional methods which in many cases are not environmentally friendly. The rearing of domesticated animals is also common in the community, with excess crops and animal products being sold in the nearby Town of Punta Gorda. Communities such as Boom Creek also have small scale logging ventures that provide income to a few households that have access to private land.

Water Supply/Source

There are two functional hand pumps in the village and one production well; one is in a community member's property and the other in the school's compound. Rainwater is their main source of drinking water. Each household has water catchment tanks to harvest rainwater. A few households have access to hand dug wells. The community hand pumps are mostly utilized during dry season which is a burden for families that do not possess a vehicle to transport containers filled with water to their homes. Females do laundry at the creek which is located in the center of the village. The nearby river has salt content, so it is not used for consumption or washing, with the exception of just bathing.



Figure 6: Village Hand Pump for Water (Source: Ministry of Rural Transformation)

Otoxha Village

Otoxha, another rural community in the Toledo District, contains 58 households and approximately 357-302 persons. This Indigenous Community is home to both Mopan and Q'eqchi Mayan cultures and is governed by the traditional village Alcalde System and the Village Council system working at the local governance level. On average, households in the community earn less than BZD \$100.00 per month, approximately 57.4%, which is well below the poverty line. The main source of income being agriculture and livestock rearing at a small scale, which accounts for 63% of the population. The remaining community members earn wages from government employment (9.3%), social security benefits (9.3%), construction (5.6%), logging (1.9%) as well as arts and crafts (1.9%). The majority of households in the community do not have access to electricity (68.5%), with the remaining gaining access via solar energy and diesel generators. A total of 94.4% of the households do not have a telephone relying on the village community phone for communication purposes.

Water Supply/Source

The main source of the village's drinking water, 68.5%, is from a public hand pump, 9.3% obtain water from a local spring, 9.3% from wells, 3.7% from surface water and 1.9% have access to water piped into their yards (Saunders, 2009). In terms of water treatment, a total of 75.9% of villagers indicated that they treated their drinking water supply by boiling. The main source of water supply for other purposes including washing was surface water (85.2%).

Dolores Village

Dolores is a tiny village in the southern portion of the country that contains 1069 households and approximately 560-596 persons. The village is predominantly Q'echi Maya (64%) with Q'echi and some English and Spanish being spoken. The village is also occupied by East Indians (27%) and Mopan Maya (6.0%). The village is governed by the Village Alcalde System and the Village Council System. Similar to Otoxha, the average monthly income of most community members was less than BZD \$100.00 per month, with the income source being primarily agriculture and livestock production (95%). Most of the population is living below the poverty line. Most

of the homes in the village of Dolores are thatch houses (94%) and less than 40% of the community has access to electricity, with solar being the main source.

Water Supply/Source

The main source of the village's drinking water is from surface water. Another 30% utilize water from spring, and 19% use rainwater from individual collection systems. The vast majority of villagers treat their drinking water. In terms of water for other purposes including washing, the main source of water supply was from spring (47%) and the creek (27%) with 19% utilizing other sources such as piped water (Saunders, 2009).

Copper Bank Village

Copper Bank is located in the rural area of the Corozal District containing 150 household and approximately 550 persons. The ethnicity is mainly Mestizo, and the predominant language is Spanish with a majority being bilingual speakers. The community falls under the Quintile 2-Lower-Middle classification in accordance with the SIB Poverty Index. Income is generated from fishing (80%) construction (2%) and cane farming (18%), with an average income of BZD \$500-2000 per month. The majority of the community, 99%, have access to electricity via the national grid.

Water Supply/Source

The main source of drinking water in the village is rainwater collection. Households harvest rain water for drinking and utilize well water for other purposes. Through the use of water pumps, some households pipe well water into their homes for toilets, laundry and for other household use. There are a reported 85 water wells in the community. However, during the months of January to May eighty percent (80%) of the wells dry up resulting in households having to utilize the community water pumps. Additionally, only 20% of the wells have availability of water. Copper Bank has 3 hand pumps connected to 3 community water wells; only 1 pump is functional at this time. Most households harvest rainwater with approximately 60% of households pumping rain or well water into their homes for household use. Well water being utilized is not chlorinated prior to use. To address this issue, the Ministry of Health has been distributing chlorine tablets to households especially during outbreaks of gastroenteritis (diarrhoea and vomiting) and Hepatitis A.

Treatment of Water in Belize

In most communities across Belize, that are not connected to the national water supply system, water is not treated prior to use, which often results in the prevalence of diseases and health issues in the country. The Ministry of Health and Wellness (MOHW) in conjunction with the EE and other national bodies, have been working with communities to create awareness of the importance of water treatment. This has been a challenge in many communities as there is limited knowledge and awareness at the community level about the impacts of inadequate water treatment and human health. The MOHW in conjunction with the EE, Belize Water Services Limited (BWSL) and the Belize Social Investment Fund (BSIF) have developed an Operations and Maintenance Manual for Rural Water Systems, which aims to improve water treatment and minimize health impacts which also promotes the sustainable utilization-use of the resource. The MOHW also works with the EE to conduct

periodic water quality testing of water systems including wells to inform water management. Given the importance of water, the country is also aiming to develop a Water Safety Plan which also takes an integrated approach to water protection and use. This project aims to also address aspects of water quality and human health through its actions, while building on the other core actions already being implemented in country.

Table 1: Community Statistics

Community	Households	Population	Male	Female	Ethnicity	Language
Boom Creek²	<u>2225</u>	<u>94112</u>	<u>3752</u>	<u>5360</u>	Mestizo (53.8%) Q'eqchi (30.8%)	Spanish English Q'eqchi
Otoxha	<u>5854</u>	<u>282302</u>	<u>138145</u>	<u>144157</u>	Q'eqchi (85.2%) Mopan Maya (11.1%)	Q'eqchi Mopan Maya
Dolores	<u>400106</u>	<u>596560</u>	<u>205291</u>	<u>248305</u>	Q'eqchi (64%) East Indians (27%) Mopan Maya (6%)	Q'eqchi English and Spanish
Copper Bank	150	550	250	300	Mestizo (98%) Caucasian (2%)	English and Spanish

Problem Statement

The traditional means of supplying potable water to households from underground aquifers via wells has been increasingly challenging, resulting in some communities experiencing water scarcity. Water availability in rural communities located in the poorest regions of Belize will be further threatened by climate change and vulnerability; consequently, through this project potable water resources will be restored in the four identified target communities in Belize, via solar water extraction systems and an integrated approach to the long-term utilization and management of water resources facilitated by community lead action. The project also takes into consideration the ecological functioning of watershed and intends to involve communities in restoration of watersheds via nature-based agricultural techniques to restore the water catchment function of watersheds.

² Some of the statistics presented may be outdated and are estimates based on the last Census and rapid assessments

Project / Programme Objectives:

List the main objectives of the project/programme.

The core objective of the proposed project is to promote the advancement of rural communities by securing water resources in four communities located in the Northern and Southern regions of the country. This will be achieved via three interlinked project components:

1. Improved Potable Water Supply Systems
2. Community Based Watershed Protection and Management
3. Improved Governance and Enhanced Appreciation for Water Resources

This project aims to decrease the uncertainty of water availability in communities by providing climate innovative and adaptive mechanisms to address current and future climate change impacts on water resources. Under Component One, water supply and distribution systems powered by solar energy and fitted with climate adaptive fixtures will be installed in the four selected communities. This component provides communities that traditionally relied on wells for water resources, with a viable long-term source of potable water.

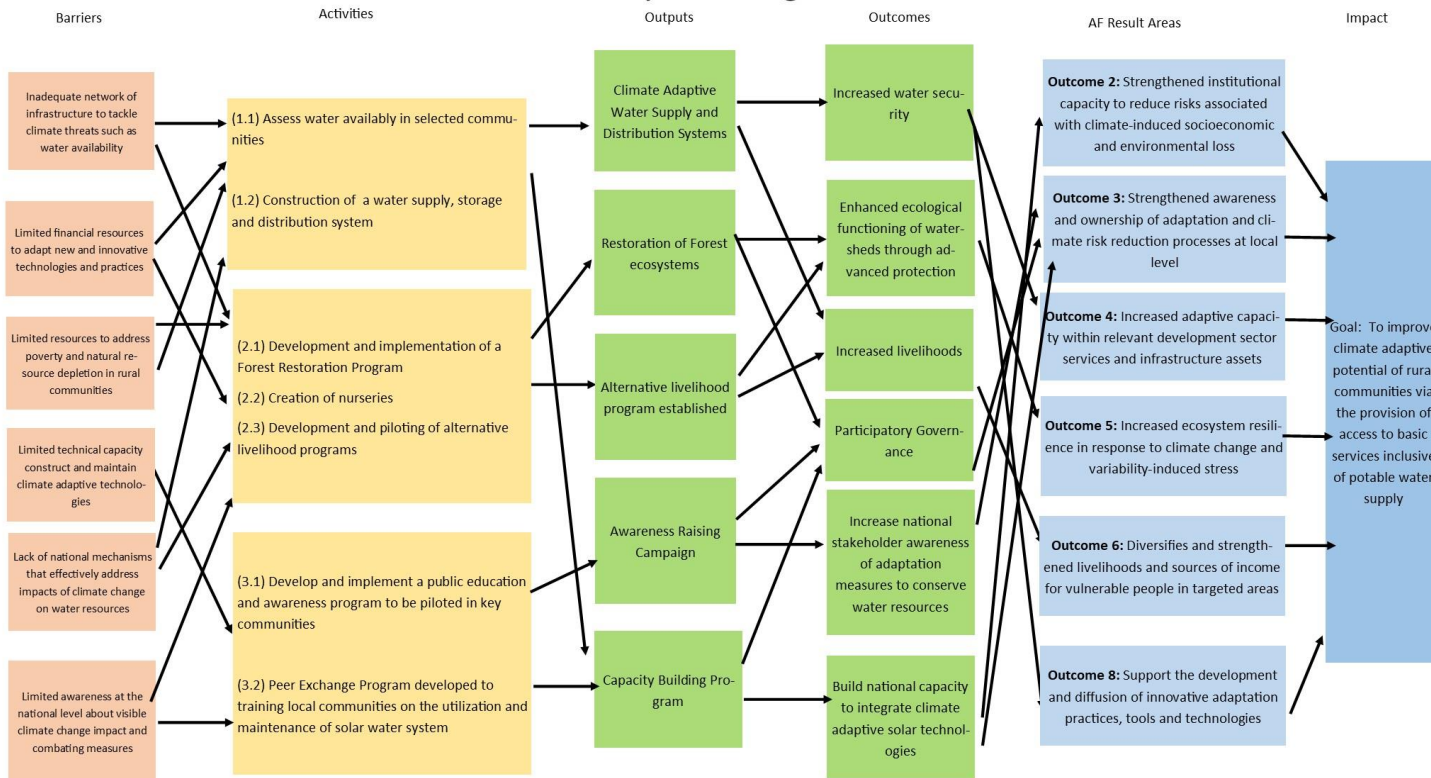
Component Two takes into consideration the securing of water resources via the protection and sustainable utilization of the watershed resources. Under this component, the Executing Entity will work with communities that traditionally unsustainably extract and utilize resources within the watershed, to adapt climate friendly and sustainable alternative livelihood projects that benefit the ecological functioning of the watershed as a water catchment. This Component also includes actions for restoring the ecological functionality of the watersheds.

Component Three, Improved Governance and Enhanced Appreciation for Water Resources, aims to increase the knowledge of local communities on the importance of water resources and ways to secure resources in a future of climate uncertainty linked to climate change and vulnerability. As water is a vital resource for the survival of all communities it is important that communities become aware and become actively involved in the conservation, protection and sustainable utilization of water resources. Continuous education and outreach are necessary to garner public support for the project and to ensure the long-term sustainability of the project interventions. Campaigns and trainings with local municipalities and communities will allow for the integration of best practices for Belize. Under this component actions will also be instituted to improve the management of the new integrated system by local counterparts with the aid of the EE. This includes the digitization of water board systems to be compatible with modern technology, which promotes the efficient use of water resources by minimizing waste and monitoring use in communities. To improve local governance, the EE also aims to develop a program to monitor and assess ground water levels in target communities, with the possibility of scaling up the program in other communities in the future.

The objectives of this project are strategically aligned with the Adaptation Fund Strategic Results Framework in its overall aim of building the adaptive capacity of four local communities via the provision of secure water resources. Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level will be achieved via the implementation of Component 3 of the project for enhancing awareness. In all actions of the project, the Executing Entity will aim to provide communities and national stakeholders with the skills and knowledge necessary to increase their adaptive capacity. The project is built entirely on providing communities with the tools to address and combat climate change impacts, which will require communities to understand the context of climate change and the adaptation solutions. This component also contributes to improved national governance and promotes the integration of communities in the decision-making process. Outcome 4: Increased adaptive capacity within relevant development sector services and

infrastructure assets is evident under Component One, via the installation of climate adaptive water extraction, supply and distribution systems that can withstand climate change impacts, thereby securing water resources for four water deprived communities. Outcome 5, Increased ecosystem resilience in response to climate change and variability-induced stress, will be realized through the implementation of restoration programs for watersheds, which target the riparian forests to improve [its-their](#) functionality. Alternative livelihood programs based on the uniqueness of target communities will be identified and implemented. These programs will be in alignment with the goal of maintaining the ecological functionality of the watershed and hence will contribute to its protection. The Project will also contribute to Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas of the AF. The main goal of the project is to provide rural communities with innovative technologies and practices that would better enable them to secure water resources in a future of climate variability. The latter contributes to the Fund's Outcome 8 via the adaption of these new methods in traditional communities. Further information can be found within Annex 1.

Theory of Change



Project / Programme Components and Financing:

Fill in the table presenting the relationships among project components, outcomes, outputs, and countries in which activities would be executed, and the corresponding budgets.

Project/Programme Components	Expected Outcomes	Expected Outputs	Countries	Amount (US\$)
1. Improved Water Supply Systems	1.1. Increased water security in for four rural communities in the poorest regions of Belize	1.1.1. Four water extraction and storage facilities 1.1.2. Four community distribution systems for water supply	Belize	3,439,375 3,454,401
2. Community Based Watershed Protection and Management	2.1. Enhanced ecological functioning of watersheds through advanced protection	2.1.1. Riparian Restoration Program 2.1.2. Alternative Livelihood Program	Belize	300,000 315,025
3. Improved Governance and Enhanced Appreciation for Water Resources	3.1. Increase national stakeholder awareness of climate change impact on the water resources 3.2 Build national capacity to integrate climate adaptive solar technologies 3.3 Increase capacity of local water boards to effectively manage water systems	3.1.1. Awareness Raising Campaign 3.1.2. Capacity Building Program 3.1.3. Integrated Training Program for the management water systems 3.1.4. Digitization of water system 3.1.5. Ground Water Monitoring Program	Belize	376,108

6. Project/Programme Execution cost	<u>432,017,435,166</u>
7. Total Project/Programme Cost	<u>4,547,5004,580,700</u>
8. Project/Programme Cycle Management Fee charged by the Implementing Entity (if applicable)	<u>422,450,389,300</u>
Amount of Financing Requested	4,970,000

Projected Calendar:

Indicate the dates of the following milestones for the proposed project/programme

Milestones	Expected Dates
Start of Project/Programme Implementation	<u>November 2022</u>
Mid-term Review (if planned)	<u>2023</u>
Project/Programme Closing	<u>April 2027</u>
Terminal Evaluation	<u>July 2027</u>

Formatted: Font: 11 pt

Formatted: Font: 11 pt

Formatted: Font: 11 pt

Formatted: Font: 11 pt

PART II: PROJECT / PROGRAMME JUSTIFICATION

A. Describe the project / programme components, particularly focusing on the concrete adaptation activities, how these activities would contribute to climate resilience. For regional projects describe also how they would build added value through the regional approach, compared to implementing similar activities in each country individually. For the case of a programme, show how the combination of individual projects would contribute to the overall increase in resilience.

Component One, Improved Water Supply Systems, aims to provide an alternative and reliable water production system to the four target communities of Dolores, Boom Creek, Copper Bank and Otoxha, which are in the poorest and remote areas of the country. These communities were traditionally utilizing Rudimentary Water Systems, that supplied water via wells constructed for extraction from underground aquifers. Some communities contain numerous wells, some supplying water resources to individual households. Other sources of water include rain fed collection systems and the manual extraction of water from local streams and springs. The target communities lack access to potable water for drinking and household use, which is further inaccessible during Belize's dry season. During the dry season, some communities are only able to access water from water trucks that transport water from other municipalities. The unavailability of potable water and improper wastewater management further prevails the prominence of disease outbreaks in the communities, leading to long-term health impacts. Additionally, recent efforts to access water from new water wells dug in communities have been futile. The EE exhausted materials and resources in the past 6 months to locate new water sources to supply water to communities where existing wells can no longer provide water. During 2020-2021 the EE has dug wells beyond the maximum depth of previous systems and have only been able to access approximately 3 feet of water, which is insufficient to provide water resources to the community.

The success of this component also requires the completion of a requisite hydrological investigation to ensure that the water systems can provide the volume of water and recharge rate needed. The latter, tied to actions under Component 3, will avoid the over-abstraction of water that damage the aquifer and results in negative impacts (salinization of coastal aquifers) for all. Where required, saline intrusion zone studies may be conducted to determine the zone of influence. It is the aim of this project to provide four rural remote communities, with secure access to potable water resources thereby increasing the ability of the community to adapt to changes in the climate that would further threaten the availability of water resources during periods of drought, inclusive of hydrological droughts. The project also contributes to Belize's mitigation potential by minimizing the utilization of fossil fuels tied to the use of traditional systems for the extraction, treatment, and supply of water resources in communities.

Key actions under the project include:

- i. The construction of new adaptive hybrid power photovoltaic water extraction systems that utilizes readily available water from nearby water sources such as streams, tributaries and/or springs.
- ii. The installation of a treatment facility-facilities to ensure the provision of potable water, that meet national standards, as well as the construction of a water storage and distribution systems which enable communities to improved access to water resources.

Component Two, **Community Based Watershed Protection and Management**, aims to improve and safeguard the ecological functionality of the watersheds via the adaption-adoption of climate friendly restoration action and alternative livelihoods that contribute to the long-term protection of the watershed and resources

within. Restoration actions will enable the watershed to continuously provide water resources to local communities through its natural processes. It will also enable a holistic approach to the management and utilization of water resources. As riparian forests provide key filtration and stabilization functions in watersheds, it is important that they be restored and protected to ensure ecological functionality and the stable supply of water resources. Alternatively, the action also contributes to the sequestration of carbon dioxide, thereby contributing to Belize's climate mitigation targets as well. This will be done via the cultivation of nitrogen fixing trees species in and along the watershed corridor to maintain and enhance forest cover, supporting environmental protection, climate resilient agriculture and alternative livelihoods.

Actions to be completed under this component include:

- i. The identification and piloting of alternative livelihood programs in communities, minimizing the prominence of poverty
- ii. Identification and restoration of forested areas via replanting and adaptive management
- iii. Establishment of seed banks and nurseries for restoration actions

Component Three, **Improved Governance and Enhanced Appreciation for Water Resources**, aims to create an enabling environment that would support the large-scale adoption of innovative practices and technologies in communities across the country. The EE has recognised the need to create sustainable structures and avenues for the enhanced understanding of climate change impacts and adaptive measures to minimize impact and increase resilience. As public acceptance and support are key to the success of the proposed initiatives, actions to integrate community members and provide them with the resources and skills necessary to effectively contribute to the successful implementation of the project is vital. This will be achieved via [the](#):

- i. The implementation of a national stakeholder awareness campaign
- ii. The implementation of a capacity building, peer exchange program, to increase knowledge of adaptive approaches to water resources management and utilization
- iii. The development of a long-term integrated training program to enhance the successive capacity of local water boards to manage the water systems
- iv. Digitization of water system
- v. Program for assessing and monitoring ground water

These initiatives and innovative systems will transform the ability of the communities to mitigate and adapt to the impending threats of climate change. There are barriers to be overcome for the seamless achievement of Belize's resilience. Barriers to the implementation of climate adaptive strategies range from the lack of technical expertise to the large gap that exists within the country to finance climate change adaptation.

Technical Barriers

The EE and the Local Water Boards lack the technical resources to construct and manage new water systems in target communities. Currently, actions for the provision of water in communities require remedial technologies and expertise for the extraction and management of water resources. The adoption of climate adaptive technologies for the long-term extraction, treatment and distribution of water in target communities will require the technical expertise of numerous engineers and technical skills, which do not currently exist within the EE. The acquisition, installation, and training of personnel on the utilization of the new technologies will enable EE to see the integrated adoption of new water systems in various areas of the country.

Financial Barriers

Local Water Boards and the EE lack the financial resources to transform local water systems to secure water resources. Approximately 148 communities in the country are under the management of Local Water Boards in rural areas, with the communities gaining access to water from groundwater sources. Decreased water availability from local underground water sources, linked to climate impacts such as decrease [in](#) rainfall and shorter, more intense rainfall, poses a particular challenge to those communities not connected to the national water system and are unable to upgrade infrastructure to supply potable water to communities. Currently all major municipalities and 44 villages are connected to the water systems managed by Belize Water Services Limited (BWSL), which contain large scale infrastructure for water supply and distribution. The initial investment, inclusive of assessments, and financing for the construction and maintenance of systems are limited and, in most cases, non-existent at the national level. Financial resources of the EE are restricted by national budgets, which inhibit the upgrading of water systems to modern climate adaptive systems, that provide secure water resources to communities.

Institutional Barriers

Currently, the Ministry lacks the formal structures necessary for the long-term sustainable management of newly built adaptive systems by the local Water Boards. To depart from the business-as-usual management of water systems, which have been deemed unsustainable, there is the need to advance management strategies that would better enable the longevity of the system through effective management. The creation of a progressive initiative within the Ministry that functions as a succession program for the management of the water systems, will enable communities to maintain fully functional water systems and secure water resources in communities already impacted by climate change and variability.

Participatory Governance

The proposed project is designed with participatory governance principles which allows the communities to actively engage in the decision-making process. The project will adopt participatory planning, budgeting, action and M&E systems. The participatory governance approach will positively contribute towards beneficiary ownership, local capacity enhancement, accountability and transparency. The project will ensure appropriate local engagement platforms are in place for all the local stakeholders to actively engage in the decision-making process. A strong community and local stakeholder mobilization process will be carried out from the inception of the project to ensure all local stakeholders including the target communities are brought in within the overall participatory governance model. The below diagram depicts the overall participatory governance model that will be adopted by the project.

Participatory Planning: The planning of access to water and watershed management practices will be done using participatory processes. The identification of problems, analysis, generation of options, etc. will be carried out in a community-centric manner.

Participatory budgeting: The budgeting of the local development interventions including community drinking water supply initiatives will be done using participatory budgeting processes. This will enable a higher level of financial transparency and accountability while promoting higher community contributions (in-kind).

Participatory Action: The implementation of the climate change adaptation initiatives will also be done in a participatory manner where men and women in the target community groups along with the other stakeholders will take responsibility for the implementation. The participatory planning process will identify the roles and responsibilities of different community groups, including women and youth, during the implementation process.

Participatory M&E: Participatory actions will be embedded into the monitoring and evaluation processes as well. The overall monitoring framework will be designed to provide main responsibility to the community groups.

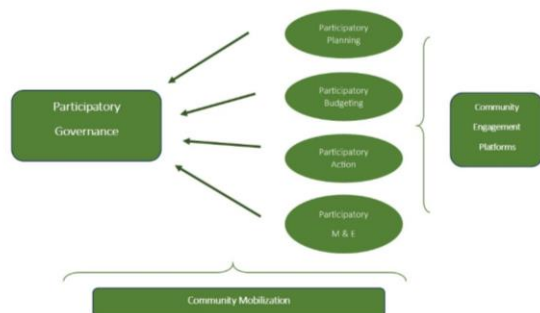


Figure 7: Diagram of Participatory Governance

B. Describe how the project /programme would promote new and innovative solutions to climate change adaptation, such as new approaches, technologies, and mechanisms.

The proposed project enables the adoption of an integrated and innovative approach to water supply and management based on a holistic understanding of the functionality of watershed and the institution of mechanisms to sustainably utilize and protect water resources. The adoption of sustainable climate resilient water systems in remote rural communities in the country will enable communities to build their climate resiliency and address the impacts of climate change that are already affecting the supply of water resources. Similar Hybrid Power Photovoltaic Systems have been piloted in other areas of the country, within larger communities and have proved effective in the reliable supply of water to communities such as Conejo Creek and Pueblo Viejo villages in the Toledo District. These two communities, located in remote rural areas, have been provided with Rudimentary Water Systems that gravity feed water to the communities consisting of a well, pump house with a submersible water pump and chlorinator, water tanks, solar powered electrical systems and water meters. The communities were also provided with WASH (Water, Sanitization and Hygiene) Training by the MOHW. These communities faced similar instances of inadequate water supply from traditional sources and have similar characteristics. Under this project the innovation process will involve the rolling out of the Rudimentary Water Systems and adaptive management practices provided to the other communities, with a focus on the community's unique characteristics and needs. This project will undergo a process of examining, selecting and adapting the best suited technologies, systems and practices for the area to ensure the long-term sustainability of the system to meet climate adaptive needs and access to safe water. The focus will be on the benefits to the communities and to make investments in technologies and practices that have a higher beneficial outcome. The project will also utilize the technical expertise of various experts from government and private sector entities to devise these solutions and select suitable technologies. The lessons learnt from similar projects will be used as a benchmark for this one. Where possible, the traditional tools and practices of the local and Indigenous communities will be integrated, captured and disseminated for the eventual scaling-up of the process.

The actions under this project aim to build on the success of the other water supply systems by integrating activities for the long-term protection of the water resources by improving community practices in the watershed, that benefit the functionality of the watersheds. This approach will require the comprehensive assessment of current practices, to determine those that are detrimental to the longevity of the watershed. Following the assessment, actions will be developed in close consultation with community leaders and community members. These actions will be prescribed environmental and climate friendly best practices that positively impact the ecosystem while enabling communities to attain value added economic and social benefits. The integration of these best practices will see the protection of the resources and ecosystem services on which the community depend, thereby securing water and in some cases food production systems. The technical and social approach to holistic water management has been identified by the EE as a necessary shift to the traditional water production systems that are currently threatened. Component 2 contributes to the social and economic innovation of the project, by working with communities to identify and implement a new approach to natural resource utilization and the creation of an alternative source of income that can progress despite changing climatic factors. The project will also introduce to the communities, new methodologies and practices for the supply of food supporting vulnerable communities.

Formatted: Centered

C. Describe how the project/programme aims to roll out successful innovative adaptation practices, tools, and technologies and/or describe how the project aims to scale up viable innovative adaptation practices, tools, and technologies.

The innovative adaptation practice, which the project intends to roll out, extends to the integrated technological and social approach to the supply of potable water and the safeguarding of water resources. Actions included in the project that will enable the successful roll out are evident in Components Two and Three. Contrary to traditional practices of installing water systems and relying on the EE, Water Boards and Regulatory Agencies to ensure the long-term functionality of the system; through the improved management framework for the water systems and the livelihood actions, the interventions should be self-sustained decreasing the need for large scale financing from the EE and Government of Belize for the supply of water in communities. The traditional practice of obtaining water from rivers or central water pumps will be replaced by systems powered by solar energy, thereby modifying the process of providing communities with water and adopting new tools that enable them to build climate resiliency. Although these systems are not new, they are far from the traditional way of life of some target communities, such as those in the southern portion of the country. This project also intends to involve community members in complementary actions that would enable the maintenance of the system; via the implementation of forest restoration actions and the minimization of negative anthropogenic impacts via the identification of environmentally friendly alternative livelihood actions to secure water resources. These actions can be replicated in other communities thereby promoting the protection of water resources and decreasing the stress to water resources that would be compounded by climate change. Previous water system projects have only focused on physical infrastructure. Although communities are provided with a basic need, they are unable to sustain the operation of the system due to other harmful practices. Under this project, innovation extends to the complementary natural resource management practices that the community will adopt for the protection of the ecosystem and its services – reforestation and alternative livelihood options. Community involvement for the protection of the water and forest resources will change the business—as-usual approach to water management.

Component Three functions as the knowledge capturing component of the Project, enabling the project interventions to function as a pilot for eventual scaling up in other communities with water supply challenges. The mechanisms for building institutional capacity to manage the water systems, restoration and livelihood support actions enable the EE and regulatory agencies to monitor and evaluate the dynamics of an integrated system in a rapidly changing system impacted by climatic factors. The latter enables entities to devise a proactive approach to addressing water supply issues that may arise in similar systems. By increasing the community's knowledge and understanding of climate change impacts and promoting the integrated management of the water resources through ecological protection and sustainable utilization, the chances of project success in target and other communities is increased. The Component also facilitates the long-term monitoring of these systems under controlled circumstances which enables prompt adaptation to new challenges and impacts as they arise. The EE periodically monitors systems and communities through a network of Rural Community Development Officers (RCDO) within each district. These officers will work with communities and local water boards to ensure the effective management of the water supply in the communities, among other things. Under this project that monitoring will be extended to the other proposed interventions. The Monitoring and Evaluation System in place adds value to the project's knowledge capturing elements. Peer Exchanges similarly enable the capturing and dissemination of knowledge for the adoption of interventions in other communities in the country. Overall, the actions of Component Three contribute to the evidence basis for the future scaling up of the project interventions.

Roll Out Methodology

The community's direct involvement in the design and management of the system, restoration actions and livelihood set the stage for the institutionalization of a new pathway to project design and management within the EE and target communities. In contrast to traditional practice of constructing water supply systems, the fit-for-all approach, will not be utilized to supply water to these communities. Assessment of a community's needs and the best suited technologies and practices will be devised in conjunction with the community members to foster ownership and greater appreciation for the project. The participatory governance approach is key to the innovation focus of this project; communities will be both the creators and recipients of the innovative tools and approaches. As there is the possibility of lack of support from target communities and reluctance to minimize the utilization of harmful/destructive practices, the project will seek to operate within the participatory governance approach to involve communities in all phases of the project. There have been previous challenges of miscommunication under other projects. To address this issue the proposed project will ensure the effective inclusion of community leaders and members. There will be a process of addressing project challenges and barriers, involving the input of communities. The technical expert group will likewise be consulted to obtain information on best practices and reasonable solutions for the adoption of the technologies and practices under the project this will ensure that the needs of communities are met.

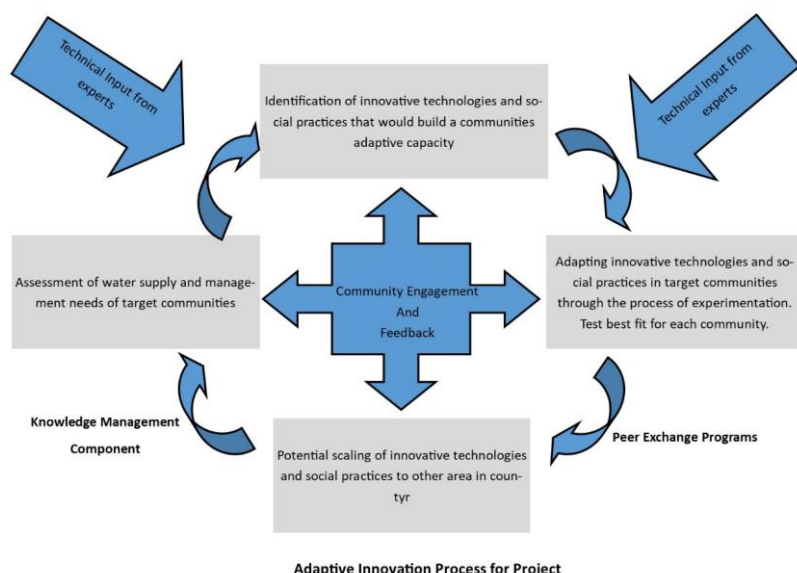


Figure 8: Adaptive Innovation Process of the Project

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

Water is a key resource for the survival of communities. In rural communities with minimal financing to transform to adaptive water supply systems that can provide a sustainable source of water, new approaches are required to ensure the survival of communities. The proposed project has numerous benefits to the four target communities and the innovative approach is welcomed by community leaders as it provides a ~~of~~ sense of security. Most of the communities are low-income with majority of the households earning less than BZD \$100 per month, equivalent to USD \$50. Most women in the communities are domestics and tasked with the day-to-day management of the households. Most of the population in the target communities are involved in agriculture and livestock production at a small scale. Other sources of community income range from government employment, construction, logging, arts and craft, fishing and cane farming among others (See PART I – Social and Economic Status of Target Communities and Annex 2 for further information). These low-income, small-scale jobs hinder the population in the target communities from moving above the poverty line. The economic benefits of the project are high as viable alternative livelihood options will be developed for each community, allowing members to meet household needs. Further assessment of the socio-economic characteristics of the communities will be examined during the project development phase, as disaggregated data is limited at this time.

Economic

The alternative livelihood actions within the project, provide the poor rural communities with a new source of income to reduce the instances of poverty within the community. Drawing on the unique characteristics of the community and the findings of the social assessment to be conducted, sustainable alternative livelihood activities will be proposed for each of the target communities. Within Indigenous communities, this assessment and social interaction with village leaders and members is key to the success of the intervention and the improvement of the economic status of individual households. The assessment will also take into consideration the gender differences and cultural roles of men and women within the target communities, some of which are Indigenous. Therefore, proposed activities will take into consideration and be mindful of the social and cultural practices of the communities. As many of the communities contain households that earn an average of BZD \$100.00 per month, interventions to provide a stable source of income and food within the individual households is vital. Most women in communities are care providers and are traditionally tasked with domestic work. Through the alternative livelihood actions, women can participate in income earning activities supporting the needs of their households. Activities targeted under this component will be in alignment with the cultural and traditional practices of the Indigenous community to ensure that women can actively partake in the project. The rights and cultural norms of all members will be carefully considered to ensure inclusion. The latter process might present other opportunities for the communities to devise innovative solutions to current practices that bear negative impacts on the natural environment and further benefit the communities. It may also present opportunities for new financial markets thereby enabling communities to thrive independently and survive in a changing climate. These financial challenges were further amplified during the Covid-19 pandemic, with community leaders indicating the need to provide many households with food and water provisions due to the corresponding economic crisis faced by the country. As an added benefit, actions to increase income from other sources also decrease the community's dependence on natural resources thereby adding to the protection of the natural environment.

The interventions under Component One and Three work in conjunction to decrease the financial resources required by the Government of Belize and the EE to source water in communities that have experienced water shortage issues, anticipated to be compounded by climate change. The climate adaptive water systems will decrease the annual fuel consumption cost to the GOB and Local Water Boards for the extraction of water from wells using diesel generators. The new supply and distribution system will also provide a source of income to the Boards for the maintenance of the system via the water consumption payment system to be instituted for each community. The new systems will also enable individual households to access water from a stable supply, thereby in some cases decreasing the need for water to be transported from outside villages at a higher cost as is the case for Copper Bank.

To ensure the project's success, the training and capacity building provided under Component 3 will ensure that technical barriers of managing the new water systems are addressed. The necessary vocational training will be provided to the community members tasked with the management of the systems. Additionally, formal agreements will be made with certified technicians in each district to support the work of the community members such as the pump operators. Thus, ensuring the proper maintenance of the system and extending the timeframe for it to provide water to the community.

Social

The social benefits of the project are tied to the long-term solutions the project intends to cultivate. The integration of community leaders and community members in all project actions creates a sense of ownership in the communities adding to the social advancement of the community and the effectiveness of project interventions. This is key to the success of the project and the increased social benefit to community members. The provision of a stable potable water supply to the communities enables households to carry out basic functions such as cooking and the maintenance of hygiene, thereby improving health of communities. Currently, most women do laundry in nearby streams and creeks and carry water from the creeks, pumps or backyard water catchments to meet daily needs. This can be extremely tiring, unhygienic and detrimental to the water supply via the introduction of untreated chemicals. Current utilization of untreated water from streams and wells have resulted in the prevalence of diseases and health complications in some communities. The steady supply of water is particularly crucial to women, children, the elderly, sick and disabled that have varying water supply needs.

The alternative livelihood actions foster men and women as entrepreneurs in communities traditionally stricken by poverty; having an added benefit of food security, dependent on the solutions identified in conjunction with community members. Water and food security are key issues threatened by the changing climate; therefore, the project intends to simultaneously address both issues to enable the resiliency of the target communities and its members. Alternative livelihood activities provide a new revenue stream for the communities minimizing their social dependence on financing from unreliable sources. These actions will be selected during project implementation in conjunction with the communities and can cover a broad range of actions. As the characteristics of each community differs, the alternative livelihood actions will be dependent on the location of the community, traditional practices, materials readily available and the traditional skills of the men and women in the community. Further assessment of the alternative livelihood options will be examined during the project development phases under the Social Assessment through consultations with community members.

Restoration actions further protect the communities by minimizing erosion, thereby reducing the need to relocate in instances where homes are near eroded riverbanks. Restoration actions also enhance local biodiversity. This in turn provides communities with building materials for traditional homes and firewood as well as secure sources of game meat, harvested from the surrounding forest. The above enables the community to maintain their traditional cultural practices.

To ensure social inclusion, both men and women will be given equal opportunity to participate in all training and capacity building activities under Component 3. In Indigenous communities, with permission from the Alcalde, the project will ensure that if needed, men and women will be engaged separately, in accordance with traditional norms, to ensure that women can fully participate in the training and capacity building activities. The project will ensure that the proper protocols for engagement are adhered to. At the national level, both men and women will be provided with information from the knowledge dissemination campaigns.

Social Barrier

Members of communities prefer to communicate in their native language, Mayan (Mopan and Q'eqchi) and Spanish. The EE has been working in these communities and have point persons to aid in this process. These persons, employed by the EE will continue to provide support to bridge the language barrier in the target communities. The RDOCs will also support this action as well as the CEO within the EE. Additionally, the EE will

also work closely with the Ministry of Human Development, Families and Indigenous Peoples' Affairs, Mayan Leaders Alliance, Belize National Indigenous Council, and Toledo Alcalde Association.

Environmental

The proposed actions under Component One and Two have direct and indirect environmental benefits. The water extraction, supply and distribution systems have an added benefit of climate change mitigation. The Project also minimizes the risk posed to ground water resources that have not been properly assessed to determine extraction and recharge rates, as well as the possibility of saline intrusion for those communities in close proximity to coastal waters. The issue of water protection, conservation and sustainable utilization is of key importance to the longevity of Belize's water resources. As is evident in coastal communities such as Copper Bank, the supply of water is threatened by SLR, natural saline intrusion as well as anthropogenic induced saline intrusion via over abstraction. Additionally, only 20% of the 85 wells in the communities supply water. The project hopes to minimize the negative impacts to underground water sources.

Component Two focuses on the protection of ecosystem services through the restoration actions and by minimizing the anthropogenic impacts to watershed systems. This component centres on the need to maintain and protect the system in order to ensure the supply of water resources for the future by employing a holistic functionality approach. Restoration actions included here will enable the watershed to revitalize its provisional and protective ecosystem services, such as the catchment and filtration of water, the minimization of erosion, the provision of habitat, the maintenance of flora and fauna biodiversity for utilization by communities and flood protection, which all have social benefits to communities. The alternative livelihood actions minimize the negative impacts caused by communities during the traditional utilization and extraction of resources as an income source. The project intends to propose socially accepted alternatives that benefit the environment, thereby ensuring the sustainable utilization of natural resources by communities. As these communities are heavily dependent on the surrounding natural resources for food, building materials and firewood for cooking, it is important that the resources be protected and used in a manner that promotes sustainability. The project can potentially enable communities to discover new methodologies for the cultivation and harvesting of crops that have been piloted in other areas of Belize or in other countries. This will enable the communities to garner a new source of income and seek new practices/methods that are intrinsically aligned to their traditional norms.

E. Describe or provide an analysis of the cost-effectiveness of the proposed project / programme and explain how the regional approach would support cost-effectiveness.

Beyond the lifespan of the project the interventions are anticipated to continue providing benefits to target communities and create an avenue for the adoption of the technical and social paradigm shift that is needed for the effective management of Belize's water resources. The project will also improve existing operational structures of the EE to ensure sustainability and cost effectiveness. The project will also take into full consideration the multisectoral and multilevel approach necessary for the successful implementation of project actions.

Under Component One, cost effectiveness is evident in the adaptive Hybrid Power Photovoltaic Water extraction, treatment, storage and distribution systems that decrease the community's dependence on fossil fuels. These

Formatted: Normal

systems will also provide communities with a stable supply of water that minimizes the need for the EE to identify and construct wells for new sources of water from underground sources periodically. The design of these systems will take into consideration the low-lying characteristic of Belize as well as the natural disasters that the country experiences. In the design of the systems, prior to its construction, the engineers will take into consideration building requirements to withstand a hurricane, location of systems to avoid placement in areas prone to flood, the construction requirements to avoid the building of facilities that are below standards and avoid the contamination of water systems (elevated housing) and the traditional practices of the community that could potentially be hindered by the location of water systems. The human and financial resources required to identify and access new water sources will be decreased, thereby enabling the EE to channel resources to other priority areas. The recent actions to source water in the traditional manner have been futile and resulted in the loss of significant financial resources. Systems such as the proposed are more sustainable for the local water boards and EE to manage as they reduced cost for maintenance, and such as reduced fossil fuel utilization, which is a challenge to access in remote areas. However, there are costs associated with the maintenance of the solar panel system. Solar systems will require regular maintenance to ensure solar panel system is they are, operating safely, correctly and efficiently. Over time dust and debris can build up on the solar panels, which may compromise the performance of the system. Hence the system requires a monthly maintenance including the batteries that require regular cleaning. One of the challenges is the scheduled maintenance that will be required by the supplier of the system with the aid of the maintenance personnel in the village. As there is limited capacity in most villages for the maintenance of the systems, training will need to be provided under the project to ensure that persons are equipped with the skills to manage and maintain the systems. This training can be guided by the Indigenous Female Solar Engineers Project. The project has taken into consideration the cost for such operation, which will be the responsibility of the EE and communityies, beyond the project's lifespan. The cost of this Component is USD \$3,439,375.

The cost effectiveness of Component Two is evident in the paradigm shift potential of project actions. The protection of water resources is the mandate of regulatory agencies within the Government structure, with significant human and financial resources being required to manage these resources. However, the approach proposed by the project will see the involvement of communities in the daily management and protection of water resources through actions that minimize anthropogenic impacts to the water systems. The shifting of traditional practices and increased understanding of the value of water resources and mechanisms to secure the resource for future use at the community level, will decrease the financial and human resources needed to promote sustainable water resource utilization by regulatory agencies. Actions to restore forest resources will also improve the functionality of the watershed, thereby providing the requisite ecosystem services which will secure the water resources. These actions also provide communities with additional provisiona and protection of ecosystem services. The minimization of anthropogenic impacts will also result in decreased stress to the water resources, natural resources and improved management championed by community members. The latter should secure the supply of water resources in the community. The cost of this Component is USD \$300,000.

The integration of a new governance Approach and training programs will enable the EE and Local Water Boards to manage systems and project interventions; success in the long-term. The latter contributes to the cost effectiveness of Component Three. By building formal structures and national capacity to integrate and manage the new systems and ecosystem-based actions, the proposed actions within the project will be beneficial to the country, beyond the one-off investment. Training on the day-to-day management will ensure that the systems are maintained to function at optimal capacity. The peer exchange programme will enable the adaptation of

Formatted: Font: (Default) Arial, Font color: Auto, English (United Kingdom)

Formatted: Font: (Default) Arial, Font color: Auto, English (United Kingdom)

Formatted: Font: (Default) Arial, Font color: Auto, English (United Kingdom), Pattern: Clear

Formatted: Font: (Default) Arial, Font color: Auto, English (United Kingdom), Pattern: Clear

Formatted: Font: (Default) Arial, Font color: Auto, English (United Kingdom), Pattern: Clear

Formatted: Font: (Default) Arial, Font color: Auto, English (United Kingdom), Pattern: Clear

modified systems in other communities in Belize that are experiencing similar water availability issues to be exacerbated by climate change. Programs such as this one can be easily replicated in country. The cost of this Component is USD \$376,108.

F. Describe how the project / programme is consistent with national or sub-national sustainable development strategies, including, where appropriate, national or sub-national development plans, poverty reduction strategies, national communications, or national adaptation programs of action, or other relevant instruments, where they exist. If applicable, please refer to relevant regional plans and strategies where they exist.

The proposed project was developed for strategic alignment with national and sectoral development strategies as well as obligations under international conventions to which the country is a Party. The Project has been aligned to the **Growth and Sustainable Development Strategy (GSDS) 2016 – 2019**, which is the overarching strategy aimed to comprehensively guide national development. The project contributes to achievement of Critical Success Factor 2 and 3 of the GSDS via the development of livelihood programs, the protection of ecosystems via effective ecosystem management and building national resilience to climate change.

Actions are also linked to **Belize's National Climate Change Policy, Strategy and Action Plan (NCCPSAP)** via the actions to increase the resilience of water resources, which is a key sector of the NCCPSAP. The **Nationally Determined Contribution** of Belize has similarly prioritized actions to protect and manage water resources. Other national policies include the Forest Policy, National Adaptation Strategy and Action Plan for the Water Sector, [and](#) the Integrated Water Resources Management Policy which call for a holistic approach to water management via the protection of the corresponding forested areas. The project is aligned with **Belize's National Gender Policy (2013)** and will fully integrate and ensure that the needs of women, men and children are addressed effectively in the project.

The Project also contributes to the achievement of Sustainable Development Goals (SDGs) 5- Gender Equality, 6 -Clean Water and Sanitation, 7 – Affordable Clean Energy, 11 – Sustainable Cities and Communities, 13 – Climate Action and 15 – Life on Land.

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

The project will ensure compliance with relevant technical standards such as building and construction codes for the development of the water supply, storage and distribution systems. Including potable water standards being adhered to in country, which have been established by the World Health Organization (WHO) Guidelines on Drinking Water. All materials will be examined by the Belize Bureau of Standards to ensure compliance with technical standards of materials and equipment. [The management of the water systems will be guided by the standards and provisions of the Operation and Maintenance Manual for Rural Water Systems that was developed by the MOHW.](#)

The project will adhere to the Environmental and Social Policy and devise mechanisms to be in full compliance with all human rights including those of marginalized and vulnerable groups and indigenous peoples. The project will ensure that the activities contained within are properly assessed to determine the necessity for an EIA or a limited level study as per the EIA Regulations of the Subsidiary Laws of Belize (2003), which contains a list of

activities for which an EIA is required. If required all stipulated conditions will be met to ensure the Project activities are in full compliance with its requirements.

Table 2: Relevant Standards and Corresponding Project Actions

<u>Component</u>	<u>Relevant National Technical Standard</u>	<u>Action</u>
<u>Component 1: Construction of Water System</u>	<u>World Health Organization (WHO) Guidelines on Drinking Water</u>	<u>Compliance with standards to ensure that water is within safe recognized standards.</u>
	<u>Operation and Maintenance Manual for Rural Water Systems</u>	<u>Compliance with protocols set out for the basic system requirements, chlorination, regular testing, flushing and scheduled maintenance of water in the system and maintenance protocols to ensure the supply of safe portable water.</u>
	<u>Environmental Protection Act Cap 328</u>	<u>Determine if project activities are likely to significantly affect the environment and will result in the need for an environmental impact assessment (EIA).</u>

Formatted: Caption, Keep with next

Formatted: Centered

Formatted Table

Formatted: Left

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

Actions included within the proposed project will complement the series of ongoing and planned projects in country. There are no known duplications of project actions within the target communities. Other pipeline projects funded by other entities focus solely on the electrification of villages that currently have no access to electricity. One such project, the European Union Electrification Project valued approximately 3 million Euros aims to install mini grids in 6-7 villages, in the first instance, that currently have no access to electricity. The project is in the information gathering phases, that will result in the development of community profiles for 36 communities without electricity across Belize. One of the main outcomes of the project is the creation of a National Sustainable Energy Road Map for Belize that provides a framework for the supply of electricity, water and telecommunication services to all local communities. The project is being implemented by the Ministry of Public Utilities, Energy and Logistics via the Energy Department.

Other Projects, such as those being implemented by the Belize Social Investment Fund (BSIF), aim to rehabilitate existing water systems that are in dire need of an upgrade. The BSIF has three water system rehabilitation projects ongoing, each with a potential financing capacity of BZD 1.4 million with financing provided by the Caribbean Development Bank (CDB). The first project is within the southern community of Crique Jute in the Toledo District. The project endeavours to construct a new water extraction, treatment, transmission, and distribution system for the community. The BSIF is working in conjunction with the EE to construct the system,

which will be managed by a Local Water Board following its construction. The second project aims to upgrade the water supply system within Sarawee, a community located on the outskirts of Dangriga Town in southern Belize. The project, being completed in conjunction with BWSL, will upgrade the transmission and distribution network of the water system as well as improve the treatment of water. The water system will be managed by the BWSL upon completion. The third project targeting the villages of San Jose and San Pablo in the Orange Walk District, will conclude with the upgrading of the rudimentary water system serving both communities. The project will include the construction of new tanks, upgrading of equipment for the extraction of water and a pump house as well as a chlorinator to treat water prior to distribution. The upgrading of the system also expands the network and utilizes water [meters as](#) monitoring [devises](#)~~devices~~[-water meters](#). There is one other water system project in the pipeline for another community in the northern part of the country.

The Indigenous Female Solar Engineers Scaling Up Solar Energy to Machakil Ha and Graham Creek Villages Project which was implemented in conjunction with the EE provided two rural communities in the southern portion of the country with access to solar energy (electricity) and a small-scale solar water pumping system. Three Mayan ladies, a local NGO, the EE and other local participants were [at](#) the forefront of the venture in the Toledo District. This proposed project will utilize the methodologies and gender focus used by [theat](#) project to engage communities and further embrace the participatory governance approach. Like the Machakil Ha and Graham Creek Project, this project ventures to work within Indigenous Communities and provide rural development benefits such as access to electricity and water.

A similar energy project is also under implementation in Belize, the emPOWERing Rural Electrification Project (emPOWER) currently being financed by the UAE-Caribbean Renewable Energy Fund (UAE-CREF) aims to [provided](#) renewable energy solution to three villages in southern Belize. These villages, Indian Creek, Medina Bank and Golden Stream will be supplied with energy via [a](#)-microgrids powered by 335kW of solar PV and battery storage. The total cost of the project is approximately USD 2.6 million, and provides a least-cost feasible solution from both [a financial and technical perspective](#). The 2018 project is being implemented by the Ministry of the Public Service, Energy and Public Utilities-ENERGY UNIT. Like the emPOWER project, this proposed project intends to allow for the adoption of innovative approaches and varied technological solutions to provide [basic needs to target communities](#). This project will consider the design of emPOWER's microgrid for the design of the water systems being proposed. The Energy Unit will also be consulted during the process for their technical expertise.

The proposed project will also complement the proposed Adaptation Fund Enhanced Direct Access (EDA) Project, under development by the Protected Areas Conservation Trust (PACT). The EDA Project will provide further context to the riparian forest management practices in other parts of the country. It is the aim of this project to devise suitable management practices and learn from the actions being implemented in other parts of the country.

I. Describe the learning and knowledge management component to capture and disseminate lessons learned.

Component 3 will enable the EE to share knowledge and disseminate lessons learnt for the scaling up and modification of similar actions in different communities. The capturing of lessons learnt will better enable the EE and communities to address the impact of climate change and water security via the utilization of innovative technologies and the construction of climate adaptive infrastructure. The multistakeholder approach to management will further improve collaborative action across departments. Agencies such as the NHS, BWS, MOHW, Forest Department, National Climate Change Office (NCCO) and Ministry of Natural Resources have

Formatted: Font: (Default) Arial

Formatted: Normal, Justified, No bullets or

Formatted: Font: (Default) Arial, Font color: Auto

Formatted: Font: (Default) Arial, Font color: Auto

Formatted: Font: (Default) Arial, Font color: Auto

Formatted: Font: (Default) Arial, 11 pt, Font color: Auto, English (United Kingdom)

Formatted: Justified, Indent: Left: 0", First line: 0"

operated under this approach recognizing the need for various skills and expertise to be utilized for the formulation, construction, and maintenance of water systems and for addressing the climate adaptive needs of communities. The technical committee will take note of project success and necessary adjustments required for the useful scale up of the innovation. Given the varied characteristic of each community, the committee will ensure that community dynamics are taken into consideration for the potential scale up. This project will strengthen that collaboration for a unified action and serve as the baseline for future actions. As the EE works closely with all communities across Belize, with water supply systems under their management, the EE can utilize the success of this project to garner support to advance its work with other communities that have similar characteristics to begin the process of assessing their water supply needs and potentially adopting similar innovative practices. The peer exchanges is an excellent way to will support the long-term provision of knowledge dissemination beyond the lifespan of the project across other communities in country and in neighbouring countries.

Empowering communities with knowledge of climate change impacts on water resources and adaptive methodologies better enable communities to adapt by promoting a shift in traditional utilization practices towards conservation and protection. This will be done through educational campaigns and public awareness sessions to enhance knowledge and learning of climate change. The project will also utilize multimedia platforms to increase awareness across the country and promote the innovative and sustainable technologies being utilized. As actions will target Indigenous Communities, an Indigenous Expert is key to the success of the actions. Within most communities, members prefer to converse in their language, Mayan (Mopan and Q'eqchi) and Spanish. The EE has been working in these communities and have point persons to aid in this process. These persons, employed by the EE will continue to provide support to bridge the language barrier in the target communities. The RDOCs will also support this action. Additionally, the EE will therefore also work closely with the Ministry of Human Development, Families and Indigenous Peoples' Affairs, Mayan Leaders Alliance, Belize National Indigenous Council and Toledo Alcalde Association. Awareness raising initiatives are important to build the resilience of local communities to adapt to imminent threats and promote ownership on initiatives. These will be conducted in various languages as specified by the communities.

The digitization of the Local Water Boards will follow the process that has been piloted in other communities with Rudimentary Water Systems. The digitization of the system allows for five key information needs to be addressed: the monitoring of physical infrastructure of rural water services; provision of a direct reporting mechanism from citizens on the functionality of water systems; a mechanism to check on the performance of water boards; a mechanism to include citizens' experiences and perspectives in the management of services; and finally, a way to track progress over time at the outcome and impact levels. A database will be developed using Postgres SQL in order for it to be compatible with what is being used in other government ministries, housed within the EE. The RCDODOC will serve as the point source for the process along with the Local Water Boards via monthly monitoring and reporting, and necessary training will be provided. As required the water system will be provided with the facilities to facilitate the digitization including access to electricity. All necessary equipment, software and training will be provided under the project. Further information on the digitization will be examined during the project development phase.

J. Describe the consultative process, including the list of stakeholders consulted, undertaken during project / programme preparation, with particular reference to vulnerable groups, including gender considerations, in compliance with the Environmental and Social Policy of the Adaptation Fund.

- Formatted: Font: (Default) Arial
- Formatted: Font: Font color: Auto
- Formatted: Justified, Line spacing: Multiple 1.15 li
- Formatted: Font: Font color: Auto
- Formatted: Font: Font color: Auto
- Formatted: Font: Font color: Auto
- Formatted: Font: (Default) Arial, 11 pt, Font color: Auto, English (United Kingdom)
- Formatted: Font: (Default) Arial, 11 pt, Font color: Auto, English (United Kingdom)
- Formatted: Font: (Default) Arial, 11 pt, Font color: Auto, English (United Kingdom)
- Formatted: Font: (Default) Arial, 11 pt, Font color: Auto, English (United Kingdom)
- Formatted: Font: (Default) Arial, 11 pt, Font color: Auto, English (United Kingdom)
- Formatted: Font: (Default) Arial, 11 pt, Font color: Auto, English (United Kingdom)
- Formatted: Font: (Default) Arial, 11 pt, Font color: Auto, English (United Kingdom)
- Formatted: Justified

As the project is multifaceted, its development involved the engagement of numerous entities and communities that will contribute to or will benefit from the project interventions. The EE conducted initial assessments of the target communities and engaged the community leaders on the proposed interventions from the four target communities of: Dolores, Boom Creek, Copper Bank and Otoxha. Discussion with entities that play a pivotal role such as the National Hydrological Service (NHS), Protected Areas Conservation Trust (PACT), Caribbean Community Climate Change Centre (CCCCC), Ministry of Health and Wellness (MOHW), Local Government (Community Leaders and Water Board Members) and local NGOs were consulted for input into the design of the project and its activities. Please See Annex 2 for the consultation reports with target villages (Dolores, Otoxha and Boom Creek).

A committee has been formed within the Ministry of Rural Transformation, Community Development, Labour and Local Government to guide the process of concept development. A Technical committee will be established, which will be comprised of technical experts from various sectors. The technical committee provided their knowledge from working on the ground with their stakeholders, sharing stakeholder needs, gaps and priorities and any relevant information that they possessed.

At the local level, during the project development phase and project implementation the EE will continue to work closely with integral departments, ministries, and communities to design a technically sound project. During project development phases the EE will further liaise with community leaders and conduct social assessments to inform the gender and social considerations for the project's design. The aim of the project is to have communities involved in the decision-making process to foster ownership and to garner knowledge that enables the selection of potential alternative actions under Component 2 that are in line with the traditional norms and practices of the target communities. Hence the communities will be involved in the formulation of the innovative adaptation, functioning as both recipients of innovation and innovators. As recipients the communities will benefit from the integration of new adaptive practices that minimize their risk to climatic changes such as change in rainfall patterns that threaten water usage or instances of torrential rains that result in flooding. As innovators the community will work closely with the EE to devise these new adaptive technologies and practices that will not only provide them with a water system, but a new way of life that is compatible with their traditional practices and needs in the face of climate change. As allowed, the project will ensure that women, youth, Indigenous Peoples, the marginalized and vulnerable groups are included within the consultation process and are continuously engaged in the project's actions. The training and capacity building component of the project, Component 3, will also ensure that communities are continuously involved in the process. Under that same knowledge management component national campaigns for raising awareness will ensure that community members are provided with the requisite information that will enable them to function as the long-term benefactors and implementors of the innovative practices.

K. Describe how the project/programme draws on multiple perspectives on innovation from e.g., communities that are vulnerable to climate change, research organizations, or other partners in the innovation space, in the context in which the project/programme would take place.

The proposed project's success is built on the collaborative efforts of key entities and target communities. The project's actions were identified via observation and information gathering by Rural Development Officers in the districts within the EE as well as through consultations with community leaders and members. Other government ministries such as the MOHW have also noted the need for immediate interventions in communities, to safeguard human health and wellbeing. The National Hydrological Service (NHS) has continuously highlighted

the need to assess, monitor and properly utilize water resources for future access to the commodity. The project builds on those needs and collaborative actions that have been clearly signalled by parties.

The EE, MOHW and NHS have traditionally worked closely with communities across Belize to improve standards of living and access to basic needs. Through this project the relationships established will be further strengthened by further integrating communities and their climate adaptive needs into the proposed interventions. The community leaders as well as the local Water Boards will be pivotal in the action of construction and maintenance of the water systems being proposed. Similarly, community leaders and community members will work closely with the EE to devise suitable livelihood options that take into consideration the traditional and cultural practices of the communities to not infringe on their rights or threaten their way of life. The restoration actions will also seek the assistance of communities in the immediate and long-term monitoring and maintenance of the action.

Monitoring of the water system by the local water boards will require their inclusion in the design of a system and the provision of technical training for maintenance, participatory governance. The members of the Water Boards, who are also members of the communities, can provide local knowledge of potential sites for the water extraction and the design of the system to avoid negative environmental impacts or the poor design of the system. Community members will also be integral to the Ground Water Assessment and Monitoring Program, as they again, have local knowledge of all water extraction points in the village and can indicate areas where wells exist. It will also be beneficial for them to work along with the EE, via the District Coordinators, to monitor the well systems and provide timely updates that require immediate actions by the regulatory agency. Research will be done extensively by the EE, MOHW and NHS, to assess all aspects of water availability and health in the communities. Currently information obtained from the NHS and MOHW are used to guide the action of the EE. For this reason, there is the need to strengthen collaborative efforts and for national mandates to be recognized for seamless integration to build a better informed and functioning water management system which takes into consideration the ecological and human health aspects.

The strengthening of collaborative actions across all levels and the knowledge capturing aspects of the project, will prove useful to the scaling up of modified actions in other communities.

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

Component One of the project aims to construct water extraction, treatment, supply and distribution systems in each community. The initial phase of the project will result in the assessment of water supply sources and the construction of water extraction areas, via pump house and chlorinator, as well the construction of water storage facilities that serve as a point source for the distribution of water in the community. The actions included in the project would enable communities to adapt to the impacts of climate change that have altered water resources from traditional sources such as wells and backyard catchment systems. With rainfall becoming increasingly sporadic given climate change, communities are unable to attain water through traditional methods. Water can be obtained from nearby creeks and tributaries; however, this water is not safe for human consumption and is often contaminated with faecal matter from livestock. Additionally, these communities are not in areas that can be supplied with potable water by the national supply company. Water, in most cases, have been extracted from underground aquifers via wells but are experiencing insufficient water supplies to meet the very basic human right of access to water. Recent efforts to supply water to the communities from traditional sources have been futile with wells not being able to provide water to communities and new wells being unsuccessful. In the absence of funding from the AF, the communities will continue to experience water supply issues as current national

budgets are severely restricted and make no provision for the installation of new adaptive water systems in country. The current national supply company focuses on larger populated areas of the country. Target communities of the innovation action are outside of the realm of the national supply company, therefore require funding from alternative sources such as the AF tofor meet their basic needs. The installation of new water extraction, supply and distribution systems, which extract water from nearby water sources such as rivers and tributaries provides the opportunity~~ies~~ for communities to have restored access to water. In the absence of such interventions the vulnerable member of the communities such as the elderly and disabled are excluded from the provision of a basic need. As a climate adaptive measure, communities must also learn to source water from other sources that are readily available. The cost of activities under this component is estimated at USD \$3,439,375 over the lifespan of the project.

In order to protect the water resources and ensure its availability for the long term, project actions must take into consideration the maintenance and restoration of forests that function as water catchments. The restoration of watersheds enables the viability of water resources, and thus enable communities with increased access to potable water. A recent in-country assessment determined the need to restore degraded ecosystems, specifically functioning riparian forests, to ensure the future supply of water and resources anticipated to be severely impacted by climate change due to an increase in temperature and extended periods of drought. Without proposed interventions under this project, the destructive practices of target communities would continue to degrade the natural ecosystem leading to further negative impacts that can affect the availability of traditional resources that these communities depend on. Further removal of riparian forest could lead to the erosion of waterways and the further reduction in water quality. The proposed Restoration of forest ecosystems under the project serves a dual purpose of increasing carbon sequestration, thereby mitigating climate change impacts. Alternative Livelihood actions will likewise promote the sustainable utilization of forest resources and the protection of water resources via climate-friendly practices within agriculture that contribute to water security. Changing traditional agricultural farming methods, which may be destructive and reduce forest cover, and Belize's ability to mitigate and adapt to the impacts of climate change is a key transformative action to be employed. The transformative change to varied alternative livelihoods provided communities with the skills and tools to survive and adapt. These alternatives also allow communities to identify long term solutions to provide for themselves financially. Withiaout funding from sources such as from the AF, communities such as these are often overlooked at the national level as financing is directed to the larger municipalities, where large scale communities require greater attention. National budgets are limited for actions that are not focused on country development. Therefore, financing is often unavailable at the scale needed to implement projects and activities that have an environmental focus, with water often being considered a commodity of abundance. Although this may be the case at the macro level in country, the water supply needs of remote rural communities are a daily reality of water security issues affected by changes in weather and rainfall patterns because of climate change. In the absence of measures such as this, communities may be further infected by contaminated water, lose the ability to protect the waters on which they depend and/or be forced to relocate to other areas where water supply needs can be met. The cost of actions under this Component is estimated at USD \$300,000.

Financing from the AF will also enable the EE to carry out extensive awareness raising and capacity building actions in these communities and at the national level. In the rural communities of Belize, climate change impacts are visible but not clearly understood. Without the proposed interventions communities may continue to misuse the water and lose their ability to meet water supply needs. It is the aim of the project to educate the communities on the impacts of climate change on water supply, forest ecosystems and demonstrate how unsustainable practices amplify the impacts. The project will also support the future scaling up of actions via the provision of

skill building and training in local municipalities and regulatory agencies for the replication and scale-up of similar systems in other vulnerable communities. The cost of actions under this component is estimated at USD \$376,108.

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

The project and intended goals are intrinsically linked to the operational mandate of the EE. As such, it is the aims of the EE to replicate and promote the adoption of similar technologies in other communities. The introduction of new technologies/methodologies and the participatory governance approach to watershed management for the supply of potable water in rural communities will be beneficial to the country well beyond the lifespan of the project. The technologies and practices selected during the implementation of the project can be scaled up and modified to provide access to water in other communities that are still relying on traditional well and pump systems for the provision of water. Given the varied characteristics of each community, the project will undergo a period of assessment and selection to ensure that the appropriate technologies and practices are identified under its participatory governance process. The selection and design of appropriate technologies, materials and water extraction sources for the proposed water systems will require preliminary assessments by experts including hydrologists and engineers. Prior to the selection of an appropriate system the NHS, EE and the MOHW will conduct a joint hydrological investigation/assessment to determine water extraction points, volumen and the recharge rate of water sources to be used to determine the community and system needs. These assessments will vary by community given their location, population, water availability and atmospheric characteristics. Given the communities first-hand knowledge of water sources and unknown locations, the knowledge of community members will be integral to the selection process.

Following the construction of the systems, ~~t~~The EE will continuously work with the target communities to manage and maintain the water systems and monitor ~~its~~ their success within the communities. The Local Water Boards will be tasked with the day-to-day management of the systems. As is the mandate of the EE, the EE will work with the local Water Boards via its RDCOs for the long-term maintenance of the systems. Each water system will be supplied with a trained pump operator and each district will have an on-call licensed technician. Under Component -3 the pump operators will obtain certified training for the operation of the systems. The Ministry of Health and Wellness will also support the operation of the systems through its periodic assessment of water quality. All systems will be operated in line with the Operation and Maintenance Manual for Rural Water Systems to ensure that communities are provided with safe potable water. The EE will utilize its budget allocation to assist the water boards to maintain the systems. Additionally, the payments from community members for water utilization will be reinvested back into the maintenance of the systems. The latter will be the responsibility of a Billing Clerk, who will similarly receive the necessary training under the project. Under the project an assessment will be conducted to determine water payment rates for the community. The assessment will take into consideration the communities social and financial characteristics; therefore, rates will not be standard across target communities. Formal maintenance Memorandum of Understanding (MOU) will be established during project implementation.

The project includes peer exchanges which would enable other local municipalities to garner knowledge on the construction and operation of similar water systems in their communities. In conjunction with the EE, the country can invest in the installation of similar systems in other water deprived areas of the country. The engagement of the communities and their members in the process will also ensure the success of the project. The need for

alternative water supply services has been highlighted as a need in the communities, hence support for the actions has been obtained from regulatory agencies and community leaders.

Restoration actions will enable the long-term protection of water resources, by maintaining the ecological functionality of the watersheds to catch, filter and store water for human utilization. This action will ensure that water resources are more readily available despite the changing climate. Restoration activities will also contribute to the maintenance of water quality. Component 3 -Alternative Livelihood activities are also sustainable as they provide members of the communities with a source of income taking into consideration their cultural and traditional practices. Following the Covid-19 pandemic, the communities in the poorest region of the country were severely impacted by the economic implications of the pandemic. This project aims to provide the communities with an alternative source of income and supply of food, that would enable them to recover from the impacts of the pandemic. By creating an alternative source of food and livelihood for the communities the actions of the project will enable communities to become independent and better provide for themselves beyond the one-off investment.

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

The proposed project is categorized as a Category C project given the low to minimal risk posed to the communities and natural environment in which the project interventions are proposed. During the development of the full project proposal, a comprehensive assessment of environmental, social and gender risk will be conducted, analysed, and appropriate mitigation measures will be developed to be executed during project implementation. Additionally, during the project development phases the risks will be examined thoroughly and appropriate risk mitigation measures will be developed and plan formulated.

Table 3: Risk Assessment

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
Compliance with the Law	X	Low to No Risk <u>There are no risks posed to the provisions of national and international legislation. The proposed project will ensure compliance with all relevant national legislations and international laws.</u>
Access and Equity	X	Low to No Risk <u>Potential Risk – given budget restrictions, not all households within the community will may be provided with clean water voiding Principle 2 of the AF. This risk has been taken into consideration during the initial design and budgeting process. The project will provide</u>

Formatted: Not Small caps

Formatted: Not Small caps

Formatted: Font: 11 pt, Not Bold

Formatted: Justified

Formatted: Caption, Keep with next

		<p>communities with access to potable water thereby providing a basic human service. The project will not compromise the target community's access to health services, clean water and sanitation, energy, education, housing, safe and decent working conditions, and land rights.</p> <p><u>Potential Risk – only a few members of the community will benefit from the livelihood ventures to be adopted. The project will ensure that all members of the community are engaged for the selection and implementation of all livelihood ventures to ensure equitable inclusion via a participatory process.</u></p> <p><u>This will be further substantiated during the assessments of the Project's Feasibility.</u></p>
Marginalized and Vulnerable Groups	X	<p>Low to No Risk</p> <p><u>Potential Risk – the special needs of marginalized and vulnerable groups are not considered, thereby disenfranchising selected community members. Through the EE's continuous work with the target communities, the needs of marginalized and vulnerable groups have been integrated during the design and risk management solutions will be executed during the implementation of the project. The needs of marginalized and vulnerable groups will be taken into consideration for the development of the project proposal. The project's actions have been formulated with the above in mind, thereby minimizing unequal access to a basic need to provide the vulnerable members of the communities with increase access to a basic need to ensure public health and safety.</u></p> <p><u>Furthermore, the project will not impose any disproportionate adverse impacts on marginalized and vulnerable groups including children, women and girls, the elderly, indigenous people, tribal groups, displaced</u></p>

		<p>people, refugees, people living with disabilities, and people living with HIV/AIDS.</p> <p><u>Potential Impact to Indigenous communities are further examined under Principle 7.</u></p>
Human Rights	X	<p>Low to No Risk</p> <p>The proposed project will respect and adhere to all relevant national legislation and international conventions on human rights <u>and will not violate any pillar of human rights.</u></p>
Gender Equity and Women's Empowerment	X	<p>Low to Moderate<u>minimal</u> Risk</p> <p><u>Potential Risk – women from the target communities are not engage effectively throughout the project. The project will respect the rights of women and indigenous women, thereby contributing to the gender equality and women's empowerment. The unique characteristics of Indigenous women will be taken into consideration from the project design phase. The EE will work with the village Alcaldes and Community Leaders to further engage women in the project implementation. Targeted consultation with indigenous women will be held to ensure that gender considerations for participation in the project activities are integrated. The project will promote the equal participation of men and women, leading to inclusive participation. All actions will respect the rights of Indigenous Women.</u></p> <p>Further assessment required during the full proposal development phase under the Gender/Social Assessment.</p>
Core Labour Rights	X	<p>Low to No Risk</p> <p>The proposed project will adhere to core <u>national and international</u> labour laws and rights of all parties.</p>

Indigenous Peoples		<p>Low to Moderate inimal Risk</p> <p>Potential Risk – Shift in traditional norms linked to introduction of new practices and technologies to Indigenous communities. The project will respect the right of the Indigenous communities in line with national and international legislations and convention. As many of the The project actions target communities are Indigenous, the EE has established and will continue to maintain a beneficial working relationship with the communities in Belize. <u>These communities have been engaged by the EE resulting in the identification of potable water needs in the selected communities and an assessment of current water utilization.</u> Through its work with these communities, the EE <u>will ensure that the rights and cultural norms/values of the communities are respected during the design and implementation of the project.</u> have identified and will continue to provide the communities with their basic needs such as access to water and food. These communities have been engaged by the EE. This engagement has resulted in the identification of potable water needs in the selected communities and an assessment of current water utilization. <u>Community Leaders, Alcaldes and Community members will be continuously engaged in the design and implementation of the project. The participatory governance approach to project implementation will ensure that the communities are involved in the decision-making process and that their priorities and needs are fully considered. The project will ensure that Free, Prior and Informed Consent is obtained from the Alcalde's and members of Indigenous communities. The latter will also be aligned with the protocols established under PACT's Indigenous Peoples Policy.</u></p> <p><u>Furthermore, the EE and AE will utilize the existing communications protocols and structures established to consult with Indigenous communities for the design and implementation of the project. The Belize</u></p>
--------------------	--	--

		<p><u>National Indigenous Council (BENIC), the Maya Leader's Alliance, Toledo Alcaldes Association, Norther Maya Association of Belize National Association of Village Councils (NAVCO) and District Association of Village Councils (DAVCO) will also be engaged throughout the process.</u></p> <p>Further engagement and <u>a Social Assessment – Indigenous People</u> will be carried out during the project proposal development phase.</p>
<i>Involuntary Resettlement</i>	X	<p>Low to No Risk</p> <p>No project actions will involve <u>any voluntary or involuntary</u> -the resettlement of communities.</p>
<i>Protection of Natural Habitats</i>	X	<p>Low to Moderate No Risk</p> <p><u>The project will respect the rights of habitats that are recognized as protected by traditional or Indigenous local communities. Through consultations critical habitats will be identified with the help of community leaders and members.</u> The project activities have been formulated based on the ecological functionality of watersheds. Therefore Hence the actions for restoration and alternative livelihoods <u>will be designed to avoid any negative risk to natural habitats. PACT's Policy on Natural Habitats and Biodiversity as well as national legislation for the protection of the natural environment will be adhered to.</u> have been devised to enhance the functionality and thus the protection of natural habitats within watersheds.</p> <p><u>During the implementation of the proposed project, prior to the selection of water extraction point, the Department of Hydrology in conjunction with the EE and the Ministry of Health and Wellness will conduct assessments of potential water sources to determine appropriate water extraction points and determine the volume of water that can be safely extracted to meet community supply needs.</u></p> <p><u>The feasibility of water extraction methodologies will be examined during the</u></p>

		<u>project development phase and further determined during project implementation phase.</u>
<i>Conservation of Biological Diversity</i>	X	Low to Moderate No Risk <u>Potential Risk – Introduction of non-native species during reforestation activities. The project will avoid the introduction of non-native and invasive species to target reforestation areas. An assessment of local biodiversity will be used to guide the selection of species for the restoration activities. PACT's Policy on Natural Habitats and Biodiversity as well as national legislation and international conventional to which Belize is a Party will be adhered to. The actions will promote the protection and maintenance of forest and riparian ecosystem via the reforestation program; enabling the conservation and protection of biodiversity in the key ecosystems</u>
<i>Climate Change</i>	X	Low to No Risk <u>The activities included within the project will not contribute to negative climate impacts nor will it contribute any significant emission of greenhouse gases. The proposed project activities will enhance the ability of the target communities to adapt to are anticipated to minimize the impacts of climate change impacts on water ecosystems in country and promote the sequestration of carbon dioxide via the restoration of degraded riparian forests.</u>
<i>Pollution Prevention and Resource Efficiency</i>	X	Low to No Risk The project will produce minimal waste via the construction of water systems. The waste produced will be disposed as mandate by the laws of Belize including those included in the Environmental Protection Act. <u>The project will also not release pollutants.</u> The project will also promote the utilization of <u>a renewable source of energy</u> , solar energy, thereby promoting energy efficiency. The latter will be done in consultation with the Energy Department.
<i>Public Health</i>	X	Low to No Risk

		<p>The project will pose no risk to public to the health in theof target communities. <u>Relevant national standards and protocols will be adhered to in an effort to avoid the distribution of water that is deemed unsafe. Communities and local Water Boards will also be sensitized on protocols included in the Operations and Maintenance Manual of Rural Water Systems developed in conjunction with the Ministry of Health and Wellness of Belize. The actions included are intended to supply communities with safe potable drinking water, thereby improve public health.</u></p>
Physical and Cultural Heritage	X	<p>Low to No Risk</p> <p>The project will pose no risk to physical and cultural heritage. <u>Consultations will be held with community leaders and members to identify physical and cultural heritage present in the project site. The project will be designed to avoid any potential impacts to heritage in the area. Protocols established by the National Institute of Culture and History (NICH) will be adhered to as well as the principles of PACT's Policy on Physical and Cultural Resources.</u></p>
Lands and Soil Conservation	X	<p>Low to No Risk</p> <p><u>Potential Risk – Selected alternative livelihood actions can pose potential negative impacts on land and soil conservation. The project will ensure that selected alternative livelihood options selected do not result in any negative impacts to lands and soils. Any livelihood actions involving agricultural actions will be sure to adhere to the principles of sustainable agriculture with a climate change focus. The activities under component 2 for reforestation will be sure to avoid any further potential damage to the ecological functionality of the system. The actions of the project are aimed at increasing the ecological functionality of forest and riparian landscape thereby preserving soils and decreasing erosion.</u></p>

Formatted: Justified

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

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

A. Record of endorsement on behalf of the government⁹ *Provide the name and position of the government official and indicate date of endorsement for each country participating in the proposed project / programme. Add more lines as necessary. The endorsement letters should be attached as an annex to the project/programme proposal. Please attach the endorsement letters with this template; add as many participating governments if a regional project/programme:*

  <p>Mr. Joseph Waigh Financial Secretary Ministry of Finance, Economic Development and Investment</p>	<p>Date:</p> <p>19/7/2021</p>
---	-------------------------------

⁹ Each Party shall designate and communicate to the secretariat the authority that will endorse on behalf of the national government the projects and programmes proposed by the implementing entities.

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

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



Nayari Diaz Perez
Executive Director
Protected Areas Conservation Trust (PACT)

Implementing Entity Coordinator

Date: 15 July 2021

Tel. and email:
(501) 822-3637
ed@pactbelize.org

Project Contact Person: Denaie Swasey
Climate Change Technical Officer

Tel. And Email: (501) 822-3637
cc.techofficer@pactbelize.org



GOVERNMENT OF BELIZE
Ministry of Finance
Belmopan, Belize

C/GEN/120/01/21(8) VOL I

July 19, 2021

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

Dear Sir/Madam

Endorsement Request for Adaptation Fund Innovation Grant and Enhanced Direct Access (EDA) Grant

In my capacity as designated authority for the Adaptation Fund in Belize, I confirm that the national projects detailed below are in accordance with the government's national priorities in implementing adaptation activities to improve resiliency to climate change and disaster risk management.

Accordingly, I am pleased to endorse the following projects under the Adaptation Fund.

- o "Securing Water Resources through Solar energy and Innovative Adaptive Management" under the Innovation Grant; and
- o "Building Community Resilience via Transformative Adaptation" under the Enhanced Direct Access Grant.

Sincerely


JOSEPH WAIGHT
Financial Secretary



- c. Chief Executive Officer, Ministry of Sustainable Development, Climate Change and Disaster Risk Management
Executive Director, Protected Areas Conservation Trust (PACT)

Tel: 822-2152, 2158, 2362, 2169

Annex 1: Alignment of Proposed Project Objectives/Outcomes with Adaptation Fund Results Framework

Project Objective(s) ³	Project Objective Indicator(s)	Fund Outcome	Fund Outcome Indicator	Grant Amount (USD)
1. Improved Potable Water Supply Systems	Number of communities with functional water supply and distribution systems supplied by solar energy	Outcome 4: Increased adaptive capacity within relevant development sector services and infrastructure assets	4.1. Responsiveness of development sector services to evolving needs from changing and variable climate	<u>\$3,439,375</u>
			4.2. Physical infrastructure improved to withstand climate change and variability-induced stress	
		Outcome 8: Support the development and diffusion of innovative adaptation practices, tools and technologies	8. Innovative adaptation practices are rolled out, scaled up, encouraged and/or accelerated at regional, national and/or subnational level.	
2. Community Based Watershed Protection and Management	Percentage of watershed restored in communities	Outcome 5: Increased ecosystem resilience in response to climate change and variability induced stress	5. Ecosystem services and natural assets maintained or improved under climate change and variability-induced stress	<u>\$300,000</u>
	Number of communities with successful alternative livelihoods projects	Outcome 6: Diversified and strengthened livelihoods and sources	6.1 Percentage of households and communities having more	

³ The AF utilized OECD/DAC terminology for its results framework. Project proponents may use different terminology but the overall principle should still apply

	Percentage of communities engaged in alternative livelihoods projects	of income for vulnerable people in targeted areas	secure access to livelihood assets	
			6.2. Percentage of targeted population with sustained climate-resilient alternative livelihoods	
3. Improved Governance and Enhanced Appreciation for Water Resources	Percentage of communities with increased appreciation for climate interventions Percentage of Communities with increased knowledge of climate change impacts	Outcome 2: Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses	2.1. Capacity of staff to respond to, and mitigate impacts of, climate-related events from targeted institutions increased	<u>\$376,108</u>
		Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level	3.1. Percentage of targeted population aware of predicted adverse impacts of climate change, and of appropriate responses	
			3.2. Percentage of targeted population applying appropriate adaptation responses	
		Outcome 4: Increased adaptive capacity within relevant development sector services and infrastructure assets	4.1. Responsiveness of development sector services to evolving needs from changing and variable climate	
			4.2. Physical infrastructure improved to withstand climate change and variability-induced stress	

Project Outcome(s)	Project Outcome Indicator(s)	Fund Output	Fund Output Indicator	Grant Amount (USD)
1.1 Installation of Water extraction, treatment and storage facility utilizing solar energy	Number of water systems constructed and functional	Output 4: Vulnerable development sector services and infrastructure assets strengthened in response to climate change impacts, including variability	4.1.2. No. of physical assets strengthened or constructed to withstand conditions resulting from climate variability and change (by sector and scale)	<u>\$3,435,375</u>
		Output 8: Viable innovations are rolled out, scaled up, encouraged and/or accelerated.	8.1. No. of innovative adaptation practices, tools and technologies accelerated, scaled-up and/or replicated	
			8.2. No. of key findings on effective, efficient adaptation practices, products and technologies generated	
1.2 Construction of distribution system	Number of distributions systems constructed	Output 4: Vulnerable development sector services and infrastructure assets strengthened in response to climate change impacts, including variability	4.1.2. No. of physical assets strengthened or constructed to withstand conditions resulting from climate variability and change (by sector and scale)	
		Output 8: Viable innovations are rolled out, scaled up,	8.1. No. of innovative adaptation practices, tools and technologies	

Formatted Table

		encouraged and/or accelerated.	accelerated, scaled-up and/or replicated	
			8.2. No. of key findings on effective, efficient adaptation practices, products and technologies generated	
2.1. Restoration of Riparian Forests	Acres of riparian forests restored	Output 5: Vulnerable physical, natural, and social assets strengthened in response to climate change impacts, including variability	5.1. No. and type of natural resource assets created, maintained or improved to withstand conditions resulting from climate variability and change (by type of assets)	<u>\$300,000</u>
2.2. Develop and implement alternative livelihood programs in target communities	Number of livelihood program functional (male and female participation)	Output 6: Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability	6.1.1.No. and type of adaptation assets (tangible and intangible) created or strengthened in support of individual or community livelihood strategies	
3.1. Develop and implement a awareness raising campaign	Number of communities with enhanced awareness of climate change	Output 3.1: Targeted population groups participating in adaptation and risk reduction awareness activities	3.1 No. of news outlets in the local press and media that have covered the topic	<u>\$376,108</u>
3.2 Develop training program for the maintenance of solar technologies and	Number of communities trained on the utilization of solar technology systems	Output 3.2: Strengthened capacity of national and subnational	3.2.1 No. of technical committees/associations formed to ensure transfer of knowledge	

scale up in other communities		stakeholders and entities to capture and disseminate knowledge and learning	3.2.2 No. of tools and guidelines developed (thematic, sectoral, institutional) and shared with relevant stakeholders	
3.3 Develop an integrated training programs for the management of the water systems	Number of water board members trained under the program (male and female)	Output 2.1: Strengthened capacity of national and sub-national centers and networks to respond rapidly to extreme weather events	2.1.1. No. of staff trained to respond to, and mitigate impacts of, climate-related events (by gender)	
			2.1.2 No. of targeted institutions with increased capacity to minimize exposure to climate variability risks (by type, sector and scale)	
3.4 Digitization of water system	Number of water system digitized to reduce wastage	Output 4: Vulnerable development sector services and infrastructure assets strengthened in response to climate change impacts, including variability	4.1.2. No. of physical assets strengthened or constructed to withstand conditions resulting from climate variability and change (by sector and scale)	
3.5 Ground Water Monitoring Program	Number of ground water systems assessed for long term monitoring	Output 3.2: Strengthened capacity of national and subnational stakeholders and	3.2.1 No. of technical committees/associations formed to ensure transfer of knowledge	

		entities to capture and disseminate knowledge and learning	3.2.2 No. of tools and guidelines developed (thematic, sectoral, institutional) and shared with relevant stakeholders	
--	--	--	---	--

Annex 2 Consultation Reports

Dolores Village Field Report

On Friday, March 18, 2021, Toledo East RCDO visited Dolores Village in the Toledo District to meet with village leaders at the Cabildo (community center) to review and update key sections of the Dolores Community Profile of 2004.

Participants :

Adrian Cus - RCDO

Julian Pop – Village Council Chairman

Village Council Members

Esteban Coc – Alcalde

Maximo Pan – Deputy

Economic Activities

Majority of community members do subsistence farming. Main crops they grow are corn, beans, rice, ground food, cardamom, and cocoa. They also do the rearing of domesticated animals: pigs, chickens, and turkeys. Excess of their crops and animals are sold at the nearest Guatemalan Market/Villages approximately 6 miles from Dolores Village.

In Dolores Village only two teachers, very few Belize Defense Force (BDF), some young people employed in the Tourism Industry outside of the District and few construction workers and common laborers that leave the village to earn income for their livelihood.

Interviews were conducted with the Village Council and Alcaldes of the village.

CHECKLIST FOR FIELD ASSESSMENT OF GRAVITY FED WATER SYSTEM, SANITATION, MANAGEMENT & HYGIENE

<u>Date of Visit:</u>	<u>March 18, 2021</u>
<u>Names of RCDO, Toledo East</u>	<u>Adrian Cus</u>
<u>Village Name</u>	<u>Dolores, Toledo District</u>
<u>Community Population (M,F)</u>	<u>Presently, the total population is 596, which 291 are males and 305 are females.</u>
<u>Number of households</u>	<u>106 households</u>
<u>Number of Families</u>	<u>139 families</u>
<u>Number Primary School Students</u>	<u>156 students</u>

<u>Number of Teachers</u>	<u>7 teachers (Preschool to STD 6)</u>
<u>Number of Secondary School Students</u>	<u>58 students attending Corazon Creek Technical High School.</u>
<u>Distance from town</u>	<u>This village is 50 miles away from Punta Gorda Town, Toledo District.</u>
<u>Surrounding Villages/Communities served by Rural Water Systems.</u>	<u>Otoxha is 2 miles away from Dolores but solely depend on hand pumps while Machakilha is 5 miles away also use a hand pump to get their drinking water.</u>
<u>Basic description of community</u>	<u>Majority of the homes are thatch structures, very few zinc roofs with lumber flooring. The Cabildo has zinc roof, lumber walling, and flooring. The school is concrete but have crack in the walling and roof. Three churches are concrete buildings and two are made of lumber with zinc roof. The village seems to be stable and does not have boarder issues, violence, and domestic problems nor drugs.</u>
<u>Water Source</u>	
<u>Basic history & description of the Mini Gravity Fed Water System.</u>	<u>This GRW system construction date is unknown however it is said to be around 2003 and funding Agency is unknown. In 2018, US Missionary funded 4 reservoirs, 10 ft. x 10 ft. x 5 ft concrete structures at the springs. From the tanks, 2" pvc pipes are connected and runs downhill and branch off to homes in the village. One is use by the school only, for drinking, washing, and flushing of toilets. During the dry season, two out of three sources (excluding the one that feeds the school) have water and maintain the water level in the tank. The second source usually run very low. Very little amount of water enters the tank. It would get full overnight however as soon as villagers collect their supply early morning, it run out of water. Not all households are connected to this system especially families living far at the end of the village. They have access to water from neighbors that are connected to the system as the service is free.</u>
<u>Description of well/source</u>	<u>Four small shallow tiny springs (open source) are the main source of water located on the hills within the village. The</u>

	<u>springs are dam and enters through a pipe into the tank. The sources usually run low/dry during the peak of the dry season.</u>
<u>Capacity of reservoir</u>	<u>Each tank holds approximately 1,000 gallons of water</u>
<u>Other Water Sources</u>	<u>Department of Rural Development in November 2014 drilled for a hand pump well and installed a hand pump located in the center of the village. This hand pump serves most of the villagers during the dry season.</u>
<u>How much water is consumed by the community?</u>	<u>The average amount of water consumed daily is unknown as the tanks are design with overflow pipes. The system is not metered.</u>
<u>Is the current water supply chlorinated (is it seasonal, dependent on external factors or predictable)</u>	<u>The water from the system is not chlorinated, people boil their water mostly in the morning to make their tea.</u>
<u>Condition of water source</u>	<u>Villagers fence spring surrounding with sticks to keep roaming pigs from contaminating the water source.</u>
<u>Condition of water pipes</u>	<u>Pipes are old and have not been replace since. Some ¾ inch pvc connections are fasten with rubber and some extend pipelines with thin PVC pipes.</u>
<u>Management</u>	<u>No board exists. Villagers agreed to maintain/repair their pipes individually.</u>
<u>Sanitation & Waste Disposal</u>	
<u>Types of toilet facilities in community</u>	<u>1 outdoor pit latrine exist, villagers use the bushes.</u>
<u>Does the current defecation practice threaten to contaminate water supplies?</u>	<u>Yes, there are breakages on the main lines of the water system, community members spraying chemicals in the surrounding areas and the roaming of pigs which can cause contamination of the water supply for the village.</u>
<u>How do people dispose of their solid waste?</u>	<u>Every family is responsible for their garbage. Most would burn, bury, or dump it in their backyard or in the nearby bushes.</u>
<u>How do people dispose of their wastewater?</u>	<u>Flows out in drains in their backyard where pigs dug their ponds.</u>
<u>Is the water source contaminated or at risk of contamination (microbiological, chemical, or radiological)?</u>	<u>Yes, the water supply is exposed to contamination due to breakages of main and herbicides near the water supply lines. There are some community members that also have hand dug wells which can be</u>

	<u>contaminated due to flooding, spraying and pit latrines seepages.</u>
<u>Water test results from the Min of Health.</u>	<u>Only the hand pump water tested quarterly but there are no recent reports of contamination.</u>
<u>Is there a drainage problem (e.g. flooding of dwellings or toilets, vector breeding sites, polluted water contaminating living areas or water supplies)?</u>	<u>There is no drainage problem in the village. The springs on the hills are highly possible to be contaminated during rainy season as water flows from all over from the hilltop entering the sources. Two sources are located alongside the creek so those are at risk as well.</u>
<u>Use of Water</u>	
<u>Uses of the GFS water:</u>	<u>Cooking, drinking, bathing, laundry, animals.</u>
<u>No & % of community households connected to the GFS</u>	<u>79 or 75% of the total households are connected to the GF system.</u>
<u>No of potential households for connection to the RWS</u>	<u>30 households that do not have access to water pipes can directly benefit from an improved water system.</u>
<u>How reliable is the GFS (how many hours per day do they have water?)</u>	<u>Approximately 12 hours daily during rainy season and 4 to 5 hours during dry season. During dry season, the springs water level draws down to six inches deep.</u>
<u>Who has and doesn't have access to water (e.g. schools, expanded areas of community)</u>	<u>Expanded areas around the village or the ones that settle far outside the village.</u>
<u>Are there alternative sources of water nearby?</u>	<u>Hand pump well located in the center of the village can be a possible source. Based of observation when water was found, the well yield is approximately 60 GPM.</u>
<u>Is rainwater harvesting practiced? If yes, how?</u>	<u>No, people depend on the GFS services.</u>
<u>Is there any discussion in village meetings to improve the system?</u>	<u>Yes, in recent discussion villagers ask village council to seek funding to improve the existing sources or apply for Rudimentary Water System for the village.</u>
<u>Governance & Management</u>	
<u>Is there a Village Water Board for the village?</u>	<u>There is no appointed water board, the people take responsibility to maintain their standpipe.</u>
<u>If a water board is established in this village, will they have the capacity to manage a RWS</u>	<u>Yes, there young high school graduates that can assist with management of the system.</u>
<u>What agencies work in the community on water related issues?</u>	<u>Rural Development, Public Health and Missionaries.</u>
<u>Hygiene Promotion</u>	
<u>Do people have access to water and soap for washing hands after defecation</u>	<u>Yes, it has become a practice during this present pandemic (COVID-19)</u>

<u>What needs to be improved?</u>	<u>Water sources, reservoirs, expansion to areas that do not have water, upgrading of transmission and distribution lines (increase pipe sizes), installation of cut off valves, standpipes, water meters and establishment of a water board.</u>
<u>Overall Risk Profile</u>	
<u>What are major risks to the Gravity Fed Water Supply in the village?</u>	<u>Major risks are the contamination of the water supply sources and breakages of distribution mains. Villagers do not use toilets. When it rains, water comes from all over the place which enters the springs. Human waste washed by rainwater from the bushes and settles in the low line areas/drains. If there are leaks, it can seep into broken lines. Land clearing around the sources can cause it dry out completely. Also, too much water wastage can cause the springs to dry out. Approximately 60% of the villagers practice water conservation. The is no proper management of the system. Presently, the system pipelines and standpipes are in poor condition.</u>

Otoxha Field Report

Otoxha labour compilation of male and female

<u>Type of Occupation</u>	<u>Men</u>	<u>Women</u>
<u>Domestic</u>	<u>0</u>	<u>All</u>
<u>Agriculture/Farmer</u>	<u>All</u>	<u>0</u>
<u>Seamstress</u>	<u>0</u>	<u>5</u>
<u>Fishermen</u>	<u>0</u>	<u>0</u>
<u>Butcher</u>	<u>0</u>	<u>0</u>
<u>Hunter</u>	<u>All</u>	<u>0</u>
<u>Construction (traditional homes)</u>	<u>All</u>	<u>0</u>
<u>Tour guides</u>	<u>0</u>	<u>0</u>
<u>Handicraft producers</u>	<u>0</u>	<u>30</u>
<u>Shop keepers</u>	<u>4</u>	<u>4</u>
<u>Soldiers (BDF)</u>	<u>2</u>	<u>0</u>
<u>Police officers</u>	<u>0</u>	<u>0</u>
<u>Primary school teachers</u>	<u>3 (1 retired)</u>	<u>0</u>
<u>Drivers (licensed)</u>	<u>2</u>	<u>0</u>
<u>Professional Skills</u>		
<u>Plumber</u>	<u>0</u>	<u>0</u>

<u>Mechanics</u>	<u>0</u>	<u>0</u>
<u>electrician</u>	<u>0</u>	<u>0</u>

Skills in the community

<u>Skills in the community by men and women</u>			
<u>Skills</u>	<u>Men</u>	<u>Women</u>	<u>Comments</u>
<u>Embroidery</u>	<u>0</u>	<u>25</u>	<u>Is not practiced regularly since no market exist</u>
<u>Pottery</u>	<u>0</u>	<u>8</u>	<u>For household use only</u>
<u>Basket weaving</u>	<u>3</u>	<u>10</u>	<u>For household use only</u>
<u>Hammock weaving</u>	<u>3</u>	<u>0</u>	<u>For household use only</u>
<u>Cuxtal weaving</u>	<u>0</u>	<u>30</u>	<u>Home use and sold locally</u>
<u>Playing guitar</u>	<u>8</u>	<u>0</u>	<u>Only at the churches</u>
<u>Violin</u>	<u>3</u>	<u>0</u>	<u>Played during special events</u>
<u>Harp</u>	<u>3</u>	<u>0</u>	<u>Played during special events</u>
<u>Playing marimba</u>	<u>5</u>	<u>0</u>	<u>Played during deer dance and special events</u>
<u>Traditional healers</u>	<u>5</u>	<u>0</u>	<u>Whenever they are called</u>
<u>Dory making</u>	<u>5</u>	<u>0</u>	<u>Not on a regular basis</u>
<u>Cooking</u>	<u>0</u>	<u>All women</u>	<u>All housewives can cook traditional food</u>

Boom Creek Field Report

<u>Interviews were conducted with the Village Council and elders of the village.</u>	
<u>CHECKLIST FOR FIELD ASSESSMENT OF THE VILLAGE NEEDS.</u>	
<u>Date of Visit:</u>	<u>July 06, 2021</u>
<u>Names of RCDO and RWEC</u>	<u>Adrian Cus and Manuel Hernandez</u>
<u>Village Name</u>	<u>Boom Creek, Toledo District</u>
<u>Community Population (M,F)</u>	<u>Total population is 112, which 52 are males and 60 are females.</u>
<u>Number of households</u>	<u>25 HHs and 5 houses under construction and 1 not occupied as the owner lives in town.</u>
<u>Number of Families</u>	<u>11 families, Sanchez family is the largest.</u>
<u>Ethnicity</u>	<u>16 Mestizo, 8 Maya, 1 Mennonite</u>
<u>Number of Primary School Students</u>	<u>28 students attending Living Word Government School. Was once a private school managed by church missionary. 12-M and 16-F. No preschoolers.</u>
<u>Number of Teachers</u>	<u>2 teachers</u>
<u>Number of Secondary School Students</u>	<u>5 students attending Toledo Community College in Punta Gorda Town.</u>

<u>Number of students enrolled at Tertiary level institution</u>	<u>5 are enrolled at University of Belize.</u>
<u>Distance from town</u>	<u>This village is 5.6 miles/9km away from Punta Gorda Town.</u>
<u>Surrounding Villages/Communities served by Rural Water Systems.</u>	<u>Boom Creek is an isolated village southwest of Punta Gorda town. No neighboring villages.</u>
<u>Basic description of community</u>	<u>Low line area, 2 km stretch where homes are built along the roadside, except two families live about 600 ft away from the roadside. Distance from their border to the end of the road is 3.5 km. there are 5 concrete buildings, 11 board/zinc roof and others are thatch, 1 concrete school building, 1 elevated board/zinc church building, 2 shops and 1 corn mill.</u>
<u>Means of Transportation</u>	<u>12 Private Vehicles, 21 motorcycles and 6 boats.</u>
<u>Water Source</u>	
<u>Water Supply/source.</u>	<u>There are 2 HPs, 1 production well.</u>
<u>Description of well/source</u>	<u>HPs are upgraded to Indian Mark III; Production well bore done 2011 by RWSSU but water is not recommended for drinking (Brackish). Two families living near the production installed solar pump in well which pumps water to their homes for washing and bathing.</u>
<u>Other Water Sources</u>	<u>Few hand dug wells, 1 creek and 1 river.</u>
<u>Is the current water chlorinated (is it seasonal, dependent on external factors or predictable)</u>	<u>The water from the well and hand pumps are not chlorinated; people boil their water mostly in the morning to make their tea.</u>
<u>Uses of Water</u>	
<u>Uses of the water:</u>	<u>Cooking, drinking, bathing, laundry, animals.</u>
<u>Is there any discussion in village meetings to request for a rudimentary water system?</u>	<u>Yes, in recent discussion villagers ask village council to seek assistance and apply for Rudimentary Water System.</u>
<u>Number of potential households that can be connected to a water system.</u>	<u>25 HHs, school and church, cornmill and shops.</u>
<u>Governance & Management</u>	
<u>Do you think villagers can accept appointment of a Water Board for the village?</u>	<u>Yes, they can accept as long as they are consulted.</u>
<u>If a water board is established in this village, will they have the capacity to manage a RWS</u>	<u>Yes, there are responsible people in the village who are serious in developing the village especially young high school</u>

	<u>graduates that can assist with management of the system.</u>
<u>What agencies work in the community on water related issues?</u>	<u>Rural Development, Public Health and HOPE SPRINGS WATER.</u>
<u>Sanitation & Waste Disposal</u>	
<u>Types of toilet facilities in community</u>	<u>3 flush toilets and others are outdoor pit latrines.</u>
<u>Do the current facilities threaten to contaminate water supplies?</u>	<u>Yes, the area is lowline and prone to flooding especially for hand dug wells.</u>
<u>How do people dispose of their solid waste?</u>	<u>Every family is responsible for their garbage. Most would burn, bury, or dump it in their backyard or in the nearby bushes.</u>
<u>How do people dispose of their wastewater?</u>	<u>Flows out in drains in their backyard.</u>
<u>Water test results from the Min of Health.</u>	<u>Only the hand pump water tested quarterly but there are no recent reports of contamination.</u>
<u>Is there a drainage problem (e.g. flooding of dwellings or toilets, vector breeding sites, polluted water contaminating living areas)?</u>	<u>There is drainage problem in the village. Swamp water raise during rainy season and are breathing grounds for mosquitoes. Pit latrine can also overflow.</u>
<u>Village Priority Needs</u>	<u>Water, Light, Community Center/Hurricane Shelter, Better Road, Health Post.</u>
<u>Overall risk</u>	
<u>What are major risks to the Water Source in the village?</u>	<u>Major risks are contamination of the open water sources, (hand dug wells). When it rains, water comes from all over the place which enters the wells. Human waste from overflowing pit latrines can settles in the low line areas/drains which can seep into hand pump wells. Creeks are not safe as well.</u>

Consultation Session – Presentation of Draft Concept Note
July 9th 2021 - Zoom

Attendees:

Christian Loza

Ismer Ortega

Adrian Cus

Elsa Cardinez

Valentino Shal

Joyce Tun

Denaie Swasey

Ary Sosa (MOHW)

Tennielle Hendy (NHS)

Meeting Outcomes:

- Presentation of the Concept Note by the EE
- Discussion of water challenge in communities including those that relate to human health and the outbreak of diseases
 - o In order to address human health, periodic testing of water sources must be performed.
- Discussion of current water supply sources in target communities. Some communities such as Cooper Bank are currently purchasing water from other communities at a high cost to meet needs
- Members highlighted the importance of treating water and the necessary campaigns that should be held to garner community support. The inaction of the Operation and Maintenance Manual for Rural Water Systems being key to the project.
- Water governance is a key aspect of the project that needs to be highlighted.
 - o Water Board and personnel need to be trained
 - o Operations Manual implemented
 - o Digitization of the system to minimize wastage and promote sustainable water usage. The latter contributes to efficiency of water use for adaptation.
- The need for a national program to monitor and assess ground water levels in country as wells are collapsing at a high rate. The National Hydrological Service can assist in this venture.
- Importance of developing and implementing a water safety plan for Belize

All members are willing to partake in the implementation of the project and support the actions of the EE. Further consultations will be held during project development phase.

Formatted: Right: 0.03"

Formatted: Right: 0.03"

Formatted: Font: (Default) Arial, 12 pt

Formatted: Right: 0.03"

Formatted: Right: 0.03"

Formatted: Right: 0.03"

Formatted: Right: 0.03"

Annex 3 – Initial Gender Assessment

Population Breakdown by community

<u>Community</u>	<u>Households</u>	<u>Population</u>	<u>Male</u>	<u>Female</u>
<u>Boom Creek⁴</u>	<u>25</u>	<u>112</u>	<u>52</u>	<u>60</u>
<u>Otoxha</u>	<u>54</u>	<u>302</u>	<u>145</u>	<u>157</u>
<u>Dolores</u>	<u>106</u>	<u>596</u>	<u>291</u>	<u>305</u>
<u>Copper Bank</u>	<u>150</u>	<u>550</u>	<u>250</u>	<u>300</u>

Formatted Table

The EE is currently in the process of completing community profiles for each community in the country. In the absence of the updated National Census data, the community provides were utilized for the initial gender assessment. Assessments were completed for Copper Bank and Otoxha during the 2020-2021. Data included within for Boom Creek and Dolores villages are outdated and will be updated during the project development phase.

Educational Demographics

	<u>School Enrollment</u>			
	<u>Classes</u>	<u>Males</u>	<u>Females</u>	<u>Total enrollment</u>
<u>Otoxha Village</u>	<u>Primary School</u>	<u>36</u>	<u>33</u>	<u>69</u>
	<u>Secondary</u>	<u>9</u>	<u>13</u>	<u>22</u>
	<u>Tertiary</u>	<u>1</u>	<u>0</u>	<u>1</u>
<u>Copper Bank</u>	<u>Classes</u>	<u>Males</u>	<u>Females</u>	<u>Total enrollment</u>
	<u>Pre-School</u>	<u>5</u>	<u>8</u>	<u>13</u>
	<u>Primary School</u>	<u>48</u>	<u>44</u>	<u>92</u>
	<u>Secondary</u>	<u>20</u>	<u>34</u>	<u>54</u>
<u>Boom Creek</u>	<u>Classes</u>	<u>Males</u>	<u>Females</u>	<u>Total enrollment</u>
	<u>Pre-School</u>			<u>2</u>
	<u>Primary School</u>	<u>10</u>	<u>20</u>	<u>30</u>
	<u>Secondary</u>	<u>1</u>	<u>7</u>	<u>8</u>

⁴ Some of the statistics presented may be outdated and are estimates based on the last Census and rapid assessments

	<u>Classes</u>	<u>Males</u>	<u>Females</u>	<u>Total enrollment</u>
<u>Dolores</u>	<u>Pre-School</u>			<u>0</u>
	<u>Primary School</u>	<u>92</u>	<u>100</u>	<u>192</u>
	<u>Secondary</u>	<u>10</u>	<u>10</u>	<u>20</u>

Occupation

	<u>Type of Occupation</u>	<u>Men</u>	<u>Women</u>
<u>Otoxha Village</u>	<u>Domestic</u>	<u>0</u>	<u>All</u>
	<u>Agriculture/Farmer</u>	<u>All</u>	<u>0</u>
	<u>Seamstress</u>	<u>0</u>	<u>5</u>
	<u>Fishermen</u>	<u>0</u>	<u>0</u>
	<u>Butcher</u>	<u>0</u>	<u>0</u>
	<u>Hunter</u>	<u>All</u>	<u>0</u>
	<u>Construction (traditional homes)</u>	<u>All</u>	<u>0</u>
	<u>Tour guides</u>	<u>0</u>	<u>0</u>
	<u>Handicraft producers</u>	<u>0</u>	<u>30</u>
	<u>Shop keepers</u>	<u>4</u>	<u>4</u>
	<u>Soldiers (BDF)</u>	<u>2</u>	<u>0</u>
	<u>Police officers</u>	<u>0</u>	<u>0</u>
	<u>Primary school teachers</u>	<u>3 (1 retired)</u>	<u>0</u>
	<u>Drivers (licensed)</u>	<u>2</u>	<u>0</u>
	<u>Professional Skills</u>		
	<u>Plumber</u>	<u>0</u>	<u>0</u>
	<u>Mechanics</u>	<u>0</u>	<u>0</u>
	<u>electrician</u>	<u>0</u>	<u>0</u>

Copper Bank

Village leaders reported fishing as the number one source of income (80%). The other sources of income were: 18% cane farming and construction 2%.

Boom Creek

Agriculture and livestock remained the number one source of income where 46.2% of the villagers indicated that it was their main source of income. Other sources of income high on the list were: construction 15.4%, logging 15.4%, and fishing, hunting, Social Security payments each 7.7%.

Dolores

Agriculture and Livestock was the number one source of income (95%).

Skills in Community

	Skills in the community by men and women			
	Skills	Men	Women	Comments
<u>Otoxha Village</u>	<u>Embroidery</u>	<u>0</u>	<u>25</u>	<u>Is not practiced regularly since no market exist</u>
	<u>Pottery</u>	<u>0</u>	<u>8</u>	<u>For household use only</u>
	<u>Basket weaving</u>	<u>3</u>	<u>10</u>	<u>For household use only</u>
	<u>Hammock weaving</u>	<u>3</u>	<u>0</u>	<u>For household use only</u>
	<u>Cuxtal weaving</u>	<u>0</u>	<u>30</u>	<u>Home use and sold locally</u>
	<u>Playing guitar</u>	<u>8</u>	<u>0</u>	<u>Only at the churches</u>
	<u>Violin</u>	<u>3</u>	<u>0</u>	<u>Played during special events</u>
	<u>Harp</u>	<u>3</u>	<u>0</u>	<u>Played during special events</u>
	<u>Playing marimba</u>	<u>5</u>	<u>0</u>	<u>Played during deer dance and special events</u>
	<u>Traditional healers</u>	<u>5</u>	<u>0</u>	<u>Whenever they are called</u>
	<u>Dory making</u>	<u>5</u>	<u>0</u>	<u>Not on a regular basis</u>
	<u>Cooking</u>	<u>0</u>	<u>All women</u>	<u>All housewives can cook traditional food</u>

Age Groups

The age data was disaggregated into categories as shown below in Table B:

<u>Age range/group</u>	<u>Category Title</u>
<u>0-4</u>	<u>Infants</u>
<u>5-9</u>	<u>Toddlers</u>
<u>10-14</u>	<u>Pre-teens</u>
<u>15-19</u>	<u>Teens</u>
<u>20-24</u>	<u>Youth</u>
<u>25-49</u>	<u>Young Adults</u>
<u>50-64</u>	<u>Adults</u>
<u>65 +</u>	<u>Seniors</u>

Copper Bank

The population structure for 550 residents based on the above five quinquennial and 2 other classes is as follows: 11.6% youths, 16.3% young adults, 8.1% preteens, 18.6% teens, 20.9% infants, 18.6% adults and 5.9% seniors.

Boom Creek

As per Table B (Appendix II), the population structure based on the above five quinquennial and 2 other classes is as follows: young adults 28.5%, pre-teens 28.6%, infants 28.6% and toddlers 14.3%.

Dolores

As per Table B, the population structure for 124 residents based on the above five quinquennial and 2 other classes is as follows: largest concentration of young adults (25.8%), 23.4% toddlers, 19.4% pre-teens, 15.3% infants, 7.3% teens, 2.4% adults and .8% seniors. This represents a very young population.

Formatted: Font: (Default) Arial, 12 pt

Formatted: Right: 0.03"



ADAPTATION FUND

Project Formulation Grant (PFG)

Submission Date: 4th August 2021

Adaptation Fund Project ID:

Country/ies: **Belize**Title of Project/Programme: **Securing Water Resources through Solar Energy and Innovative Adaptive Management**Type of IE (NIE/MIE): **National Implementing Entity**Implementing Entity: **Protected Areas Conservation Trust**Executing Entity/ies: **Ministry of Rural Transformation, Community Development, Labour and Local Government****A. Project Preparation Timeframe**

Start date of PFG	March 2022
Completion date of PFG	December 2022


B. Proposed Project Preparation Activities (\$)

Describe the PFG activities and justifications:

List of Proposed Project Preparation Activities	Output of the PFG Activities	USD Amount
Development of Project Proposal	Project Proposal in alignment with AF criteria	19,750
Stakeholder Consultations	Stakeholder Consultation Report	8,000
Management Fee		2,250
Total Project Formulation Grant		30,000



C. Implementing Entity

This request has been prepared in accordance with the Adaptation Fund Board's procedures and meets the Adaptation Fund's criteria for project identification and formulation

Implementing Entity Coordinator, IE Name	Signature	Date (Month, day, year)	Project Contact Person	Telephone	Email Address
Mrs. Nayari Diaz-Perez		07/15/21	Denaie Swasey	(501) 822-3637	cc.techofficer@pactbelize.org

D. Record of endorsement on behalf of the government

Provide the name and position of the government official, Designated Authority of the Adaptation Fund, and indicate date of endorsement. The endorsement letter must be attached as an annex to the request.

  Mr. Joseph Waight Financial Secretary Ministry of Finance Development and Investment	Date: 19/7/2021
--	--------------------



ADAPTATION FUND

Request for Project Formulation Assistance to undertake special technical assessments

Submission Date: 4th August 2021

Adaptation Fund Grant ID:

Country: **Belize**Title of Project/Programme: **Securing Water Resources through Solar Energy and Innovative Adaptive Management**Implementing Entity: **Protected Areas Conservation Trust**Executing Entity/ies: **Ministry of Rural Transformation, Community Development, Labour and Local Government**

A. Timeframe of Activity

Expected start date of activity	March 2022
Completion date of activity	December 2022

B. Type of support requested

Describe the technical assessment(s) the implementing entity will undertake to support the design and development of adaptation projects and programmes


Type of Technical Assessment requested*	Duration (months)	Type/name of provider for the requested support ¹	Requested budget (USD)
Gender Assessment	5	Consulting Firm	9,000
Social Assessment - Indigenous Peoples	5	Consulting Firm	9,500
Management Fee			\$1,500
Total Grant Requested (USD)			\$20,000

***Footnote: Technical assistance could include EIA, VA, technical studies, gender assessment etc.**

¹ Specify if it is an institution, consulting firm or individual consultant. When possible, provide the name of the institution, firm or individual identified or selected.



C. Implementing Entity

This request has been prepared in accordance with the Adaptation Fund Board's procedures

Head of Implementing Entity	Signature	Date (Month, day, year)	Implementing Entity Contact Person	Telephone	Email Address
Mrs. Nayari Diaz-Perez		07/15/21	Denaie Swasey	(501) 822-3637	cc.techofficer@pactbelize.org

D. Record of endorsement on behalf of the government

Provide the name and position of the government official, Designated Authority of the Adaptation Fund, and indicate date of endorsement. The endorsement letter must be attached as an annex to the request.

  Mr. Joseph Waight Financial Secretary Ministry of Finance, Economic Development and Investment	Date: 19/7/2021
---	--------------------