

April 2023

BL-L1045

# Belize Water and Sanitation Program for Rural Areas

Public Consultation Report



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## Acronyms

BSIF	Belize Social Investment Fund
E	Engineer
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
ESP	Specific Investment Loan
ESPS	Environmental and Social Performance Standard
FO	Field Officer
GOB	Government of Belize
IDB	Inter-American Development Bank
MRTCDLLG	Ministry of Rural Transformation, Community Development and Labour and Local Government
NEMO	National Emergency Management Organization
RCDO	Rural Community Development Officers
TO	Technical Officer

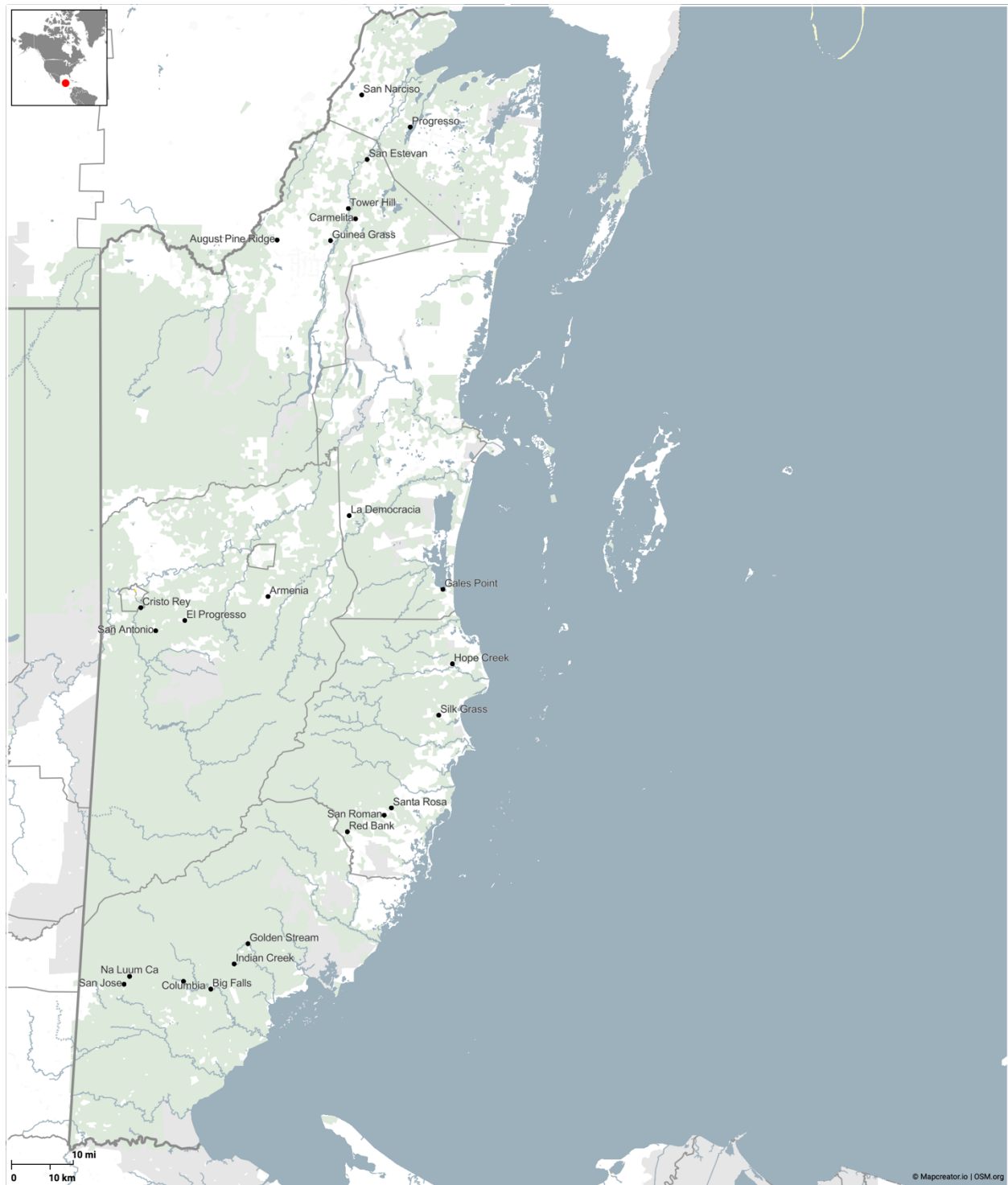


## Introduction

The report below presents findings from a series of sixteen public consultation events held in support of the Belize Water and Sanitation Program for Rural Areas (BL-L1045), a project financed through a Specific Investment Loan (ESP) of the Inter-American Development Bank (IDB) and implemented by the Belize Social Investment Fund (BSIF). The consultation process was conducted in accordance with the IDB's Environmental and Social Performance Standard (ESPS) 10, which mandates meaningful two-way consultations with stakeholders and project-affected people to improve the environmental and social sustainability of projects. The public consultations being analyzed in this report constitute the third stage of the project's stakeholder engagement process. This stage involves holding community-level consultations during the planning phase of the project. The focus at this stage is to consult with a wide cross-section of community leaders, such as those in governance, religious leaders, schools, women's groups, youth groups and community-based organizations, prior to engaging the broader community. These consultations provide community leaders with an opportunity to learn about the draft project design proposals and the potential impact on their community, and to provide initial feedback, that will be used to refine the project further.

The consultation process involved a total of 24 communities, including 1 Afro-descendant community and 10 Indigenous Maya communities (see Figure 1). Consulting with communities that are beneficiaries of a project is critical to ensure that their voices are heard, and their needs are addressed. In particular, it is essential to engage with vulnerable communities such as Afro-descendant and Indigenous Maya communities. These communities have historically been marginalized and excluded from decision-making processes that directly impact their lives, resulting in a legacy of unequal access to basic services such as water and sanitation. The consultation process provides an opportunity for these communities to express their concerns, preferences, and priorities related to the project. It allows them to actively participate in decision-making processes, promoting transparency, and accountability. By engaging with these communities, the project can ensure that their specific needs and cultural values are respected and incorporated into the project design. This can ultimately result in a more effective and sustainable project that benefits all members of the community.

Figure 1: Communities consulted in Public Consultation Event



Source: Elaborated using MapCreator.

## Objectives of the Consultation

The primary objectives of this round of consultations were to inform community leaders about the preliminary design of the program, including project components, budget, and timeline; present the results of an Environmental and Social Impact Assessment (ESIA) and proposed Environmental and Social Management Plan (ESMP); discuss environmental and social impacts and mitigation; and solicit questions and feedback to guide the progression of the program. The report provides a comprehensive analysis of the consultation process, including a summary of key themes, concerns, and feedback from stakeholders.

## Meaningful Consultation

The sixteen public consultations are part of a larger process of stakeholder engagement within a framework of meaningful consultation. For example, key informant consultations were conducted since the inception of the project, particularly to inform the practical design of the project and to advise on the inclusiveness of vulnerable populations such as indigenous peoples and afro-descendants. The concept of “meaningful” implies “respectful and good-faith dialogue” that is carried out “systematically and transparently” throughout the entire lifecycle of the project.<sup>1</sup>

Meaningful stakeholder engagement serves several purposes:<sup>2</sup>

- It is the basis for constructive relationships with local communities and other groups who may be affected by a project, or have an interest in it;
- It identifies and engages with individuals and groups who may be disproportionately affected by any adverse impacts a project may cause or contribute to;
- It identifies and engages with groups who may be more limited than others in their ability to benefit from project opportunities; and
- It is an essential source of information about local knowledge and perspectives that should be considered in project design and implementation.

A meaningful stakeholder engagement process has the following principles and elements in common:<sup>3</sup>

- It should be **ongoing and iterative**, and undertaken as a process both during project preparation and implementation, rather than one or a few isolated events.
- It should be based on a **disaggregated stakeholder analysis** and ensure that different categories of stakeholders are represented and involved.

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<sup>1</sup> IDB Invest. (2020). Implementation manual: *Environmental and social sustainability policy*. (p. 59).

<sup>2</sup> IDB Invest. (2020). Implementation manual: *Environmental and social sustainability policy*. (p. 59).

<sup>3</sup> IDB Invest. (2020). Implementation manual: *Environmental and social sustainability policy*. (p. 59-60).

- It should be **equitable and non-discriminatory**, and ensure that women, the poor, and vulnerable groups among stakeholders are given a voice and are not disproportionately impacted by the project.
- Stakeholders should have **prior information** about relevant aspects of the project, in a language, format, and manner that is appropriate, clear, and accessible.
- Consultation events and other means of engagement with stakeholders should be **tailored to the needs of different groups**, to ensure that all relevant perspectives are captured and considered.
- The engagement process should be **respectful and free of coercion or intimidation**. Participants, including those who voice opposition to the project, should be protected against reprisals.
- The process should be **transparent, with documentation and public disclosure** of how stakeholders are engaged, what their views and concerns are, and how stakeholder perspectives are considered and reflected in project design and implementation.
- Stakeholders should be able to **voice concerns and grievances**, and to seek remedy from the client if they feel the project may cause harm to them or the environment.

## Overview of Public Consultation Events

### Consultation Process

The sixteen public consultation events were all hosted by the BSIF with the support of the IDB and the Government of Belize through the Ministry of Rural Transformation, Community Development and Labour and Local Government (MRTCDLLG). All events targeted community leaders including village councils, water boards, Alcaldes, local cooperatives, community-based organizations, local NGOs, local women's groups, schools and religious leaders, as well as representatives from central government such as the Commissioner of Indigenous Peoples' Affairs. The BSIF sent letters of invitation, approximately two weeks in advance, to the village and waterboard chairpersons and Alcalde (where relevant) for each village (see Annex A: Sample Letter of Invitation to Stakeholders). Then, Rural Community Development Officers (RCDOs) of the MRTCDLLG, followed up with each chairperson and Alcalde to assist them in inviting other community leaders. This was done by word of mouth.

Each event was held at a convenient location, such as the community center, within each village. The MRTCDLLG facilitated the arrangements of venues. Where practical, several villages were paired (see Annex B: Public Consultation Calendar). All events followed the same format, that is, the meeting was opened by the BSIF, who introduced the project, outlined the agenda for the meeting, and briefly talked about the role of the various entities (GOB, IDB and BSIF). The RCDO for each corresponding community, then presented the background of the program, the scope and the eligibility criteria for village participation. Following the RCDO's presentation, an engineer from the BSIF presented the technical aspects of the intervention. Finally, a technical or social development officer of the BSIF presented the potential

environmental and social impacts, the mitigations and the BSIF's grievance redress mechanism. The BSIF complemented their talk with a PowerPoint slideshow to more easily convey the information, especially the technical aspects (see Annex C: PowerPoint Presentation).

## Participants

There was a total of 165 participants at the sixteen consultation events, of which 47 (28%) were women. Following is the breakdown of participants:

*Table 1: Breakdown of participants at public consultations*

No.	Event	Total Participants	Women Participants
1.	Gales Point	10	3
2.	La Democracia	15	4
3.	San Antonio	9	1
4.	Cristo Rey	12	4
5.	El Progreso	6	1
6.	Armenia	9	1
7.	Silk Grass	13	8
8.	San Roman	12	0
9.	Big Falls	11	1
10.	San Jose	14	4
11.	August Pine Ridge	14	6
12.	San Estevan	9	4
13.	Carmelita/Tower Hill	8	4
14.	Guinea Grass	10	3
15	San Narciso	9	2
16	Progreso	4	1
<b>Total</b>		<b>165</b>	<b>47</b>

## Stakeholder Engagement

### Consultation Event 1: Gales Point

This consultation event was held in the village of Gales Point, in the Belize district, on April 1, 2023. The meeting was attended by members of the village council, water board, principal of the primary school, and a number of residents.

Figure 2: Pictures of public consultation event in Gales Point



Source: C. Huise

Questions and comments from stakeholders are as follows:

No.	Question/Comments	Response from presenters
1.	The chairman indicated that the village has two active sources of water, a well and a nearby creek. The creek is used when the well is low. The chairman wanted to know if the disinfectant system could be installed so as to treat the reservoir, that way the water will always be treated regardless of the source being used.	The chairman was advised that his situation would be referred to the engineers of the IDB.
2.	Will this project include cleaning the dirt and grime that is already in the system?	Yes
3.	There is a big problem with the water pipes in the village (from the water reservoir to the end of the village at the lodge). The main pipe has deteriorated and is leaking heavily, so it needs replacement. Additionally, they will need to move the pipes to facilitate the proposed paving of the village main road.	n/a
4.	Can we use salt water from the nearby sea for this system?	No, the system requires a special salt. However, the salt is readily available in Belize.
5.	Can we make the salt using the abundant salt water in the lagoon? We are looking to create some industry to support our local economy.	The presenters advised that this question would be referred to the engineers of the IDB.



6.	Would the project consider training some of our young people as well, so that they can eventually manage the process?	The Village Council and Water Board can recommend individuals for training.
7.	We need this system without a doubt. What is the timespan?	The presenter stated that they could not give a specific time for implementation in the village but advised that the entire program has a lifecycle of 4 years and 2023 is year one.
8.	The chairman stated that they wanted to replace the diesel generator at the well with either solar or electricity. He needs both assistance making a decision and supporting the cost of the solar if that is a better alternative than the electricity. In regard to the electricity, the Belize Electricity Ltd. (BEL), is planning to install a mini-grid system for several developments a few miles north of the village.	n/a
9.	Will the project be making small contracts available to villagers for works such as painting or cleaning the compound?	This is a possibility.

### *Consultation Event 2: La Democracia*

The second consultation event was held in the village of La Democracia, in the Belize district, on April 1, 2023. The meeting was attended by members of the village council and water board, the community health worker, National Emergency Management Organization (NEMO) worker, and residents of the community.

*Figure 3: Pictures of public consultation event in La Democracia*



Source: C. Hulse

Questions and comments from stakeholders are as follows:

No.	Question/Comments	Response from presenters
1.	How will the hydrogen peroxide be applied? As a scuba instructor, I am concerned about the hydrogen gas being released.	The presented stated that training would be provided. He went on to ask the stakeholder if he doesn't use hydrogen peroxide at home and if he was afraid of the product. The man indicated that he used hydrogen peroxide to clean fish. However, it's uncertain if his concerns were alleviated.
2.	Will the system soften the water? If not, the villagers will still not drink the water, because they don't like "hard water." The water is hard because of high levels of calcium carbonate. For villagers to save by drinking the tap water instead of bottled water, the tap water needs to be soft. Will the project consider providing filters to soften the water?	Water softeners are not part of this project.
3.	We have been having trouble getting everyone metered, we need to change the mentality of our leaders and community.	n/a
4.	We cannot account for all our wasted water; we need to put a meter at the pump house and another one at the reservoir.	n/a

### *Consultation Event 3: San Antonio*

The third consultation event was held in the village of San Antonio, in the Cayo district, on April 3, 2023. The meeting was attended by members of the village council and water board, and residents of the community.

*Figure 4: Pictures of consultation event in San Antonio*



Source: BSIF

Questions and comments from stakeholders are as follows:

No.	Question/Comments	Response from presenters
1.	Water conservation is a priority for us.	Yes it should be especially with climate change, and for sustainability, for future generation use.
2.	Will we have to charge villagers more?	Maybe in the near future, first do a cost analysis. What is cost to run the system against how much money is been collected.
3.	How much will it cost us?	The government of Belize is getting a loan to finance this project. Initially, it won't cost the Water Board nothing.
4.	Will this kill our plants?	No, it won't as the disinfectant is added at a low concentration.
5.	Will this system clear up flood water?	No, it won't, the end user might have to add a filter to their pipe and that will help clear up the water.
6.	We need air release valve.	You might, the contractor that wins the contract for your village will have to do an assessment of your system and tailor the works to suit.

#### *Consultation Event 4: Cristo Rey*

The fourth consultation event was held in the village of Cristo Rey, in the Cayo district, on April 3, 2023. The meeting was attended by members of the village council and water board, a local church member and residents of the community.

*Figure 5: Pictures of consultation event in Cristo Rey*



Source: C. Hulse

Questions and comments from stakeholders are as follows:

No.	Question/Comments	Response from presenters
1.	Our well goes under water during floods.	n/a
2.	Will it affect our plants?	No.

3.	We need to get everyone metered so that people are more responsible and use the water sustainably. We have people who will fill their pools and only use it a few hours then throw away all the water.	n/a
4.	What about the high concentration of calcium in the water?	The technology will not soften the water, you would need to add your own filters.
5.	We need to upgrade our system for expansion, especially in the upper areas and especially in the dry season.	The RCDO indicated that the MRTCDLLG is conducting a needs assessment of all systems country-wide, looking at sources to address the issue.
6.	In terms of the rehabilitation component of the project, we have recently fenced and rehabilitated our pumphouse, so we would prefer assistance to buy the other half of the solar panels needed for our plan to go green. We are currently half done with the installation of solar panels on the top of our community center, to power our water supply. If we can get the remaining solar panel through the project, this would allow us to pump for longer times especially to supply the upper areas of our community.	The MRTCDLLG and IDB will be informed of this request.
7.	What is the timeline?	The presenter stated that they could not give a specific time for implementation in the village but advised that the entire program has a lifecycle of 4 years and 2023 is year one.

### *Consultation Event 5: El Progreso*

The fifth consultation event was held in the village of El Progreso, in the Cayo district, on April 4, 2023. The meeting was attended by members of the village council and water board.

*Figure 6: Pictures of consultation event in El Progreso*



Source: BSIF

Questions and comments from stakeholders are as follows:

No.	Question/Comments	Response from presenters
1.	In the past we used three Maya wells, however we upgraded our system. Due to the fact that one of the wells dried up and another is contaminated we had to find other sources. The main source is water from a spring using gravity feed system.	n/a
2.	Who comes to check water for the system?	The Ministry of Health through Sanitary Inspectors checks the source for micro-organisms as well as presence of iron manganese and other pollutants.
3.	When will the disinfectant be added?	The disinfectant will be added at a low concentration to water in the 20,000 gallon Tank, every time the tank is been filled, disinfectant will be added by the water Board trained personnel.
4.	Is this how it is done in Belize City?	This is a new technology been introduced, however, in Belize City we use the chlorine system where a chlorinator injects chlorine at a high concentration to the water.
5.	We have two main lines, how will it work?	No response provided.
6.	Our system is open source, will it remove that dirty water?	No response provided.
7.	Plants will be safe with this system?	No, they won't because the disinfectant will be added at a low concentration.
8.	Gravity fed system.	This system can be retro-fitted to apply to your system.

#### *Consultation Event 6: Armenia*

The sixth consultation event was held in the village of Armenia, in the Cayo district, on April 5, 2023. The meeting was attended by members of the village council and water board, the community library chairpersons, a tour guide, and other members of the community.



Figure 7: Pictures of consultation event in Armenia



Source: C Hulse

Questions and comments from stakeholders are as follows:

No.	Question/Comments	Response from presenters
1.	Will it go in the pump house?	Yes.
2.	Chairlady of the community library said she owned a similar system when she farmed in Sierra Nevada, California. She had it in her garage and told the community it worked wonderfully. She also said in the meeting that she thought it was a good idea because many of the villagers cannot afford to buy bottled water.	n/a
3.	How will we get the grime out of the pipes?	The grime will be flushed out. Contractors will assess the community's system and conduct the necessary cleaning and repairs.
4.	Will the price of water go up?	MRTCDLLG sets the price of water, this program has nothing to do with the price of water. This program is more focused on meeting the SDG of provide safe drinking water for everyone.
5.	The Village Council Chairman explained that Armenia has a water shortage problem. They have four wells and on the day of the meeting one was already dry. The village has outgrown their water source. The community has been wanting to use the water from the nearby Caves Branch River, but the MRTCDLLG has not allowed it because farm runoff. The community now has it sights set on an area of the same river that is higher up from the farms however they would need support to run the pipes some 1.5 miles to the village.	n/a
6.	Another issue in the village is that two of their wells run directly into the distribution line. The	n/a



	water doesn't go to a reservoir first, so there is no filtration or disinfection of those waters.	
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### *Consultation Event 7: Hope Creek and Silk Grass*

The seventh consultation event was held in the village of Silk Grass, in the Stann Creek district, on April 11, 2023. The meeting was attended by members of the village council and water board.

*Figure 8: Pictures of consultation event in Silk Grass*



Source: C Hulse

Questions and comments from stakeholders are as follows:

No.	Question/Comments	Response from presenters
1.	Will the entire water run through the system or will the disinfectant be injected into the water supply?	The engineer informed that the disinfectant will be pumped into the system.
2.	Will the disinfectant harm humans like the fluoride that they put in the water in the US?	No, the system is safe.
3.	Will this system assist with the grime in the pipes?	Yes, both the chlorine and the hydrogen peroxide will assist with that.
4.	How long is the process until installation?	The presenter stated that they could not give a specific time for implementation in the village but advised that the entire program has a lifecycle of 4 years and 2023 is year one.

### *Consultation Event 8: Santa Rosa, San Roman and Red Bank*

The eight consultation event was held in the village of San Roman, in the Stann Creek district, on April 11, 2023. The meeting was attended by members of the village council and water board.

Figure 9: Pictures of consultation event in San Roman



Source: C Hulse

Questions and comments from stakeholders are as follows:

No.	Question/Comments	Response from presenters
1.	Do we need a specific building apart from our existing pump house? What if the pump house is too small? What is the size of the tank? It looks like a small Rotoplast tank.	The presenter indicated that the tanks would be about the size of a 55-gallon drum which most people are familiar with. It turned out that some residents thought the tanks were going to be the size of a 200-gallon cistern because of the pictures on the powerpoint. This was clarified.
2.	Is this going to be the same as the 60% chlorine we are adding now?	No, it will be a less concentrated disinfectant.
3.	Is the hydrogen peroxide safe?	Yes, it is safe. This system is used in many parts of the world including the U.S.A.
4.	In terms of the GRM, who specifically will I be dealing with?	You will be dealing with Ms. Thalia Dawson, BSIF's Southern Region Field Coordinator.
5.	The communities of Santa Rosa and San Roman explained that they experience water shortage in the dry season. They have drilled 8 wells recently and all were dry, only one of those wells provided about three months of water. They also have the issue of excessive costs for running a diesel generator to power their system. There is no electricity where their pump is located some 1.5 miles away from the highway. One option they have been exploring for a new source of water is a water fall in the Maya Mountains. This fall is about 3.5 miles from the highway.	n/a
6.	Will the hydrogen gas being released contribute to deterioration of the pumphouse like the chlorine does?	No, that shouldn't happen. It is a less toxic process of disinfection.

7.	Some pumphouses are not ventilated, will that cause any harm with the hydrogen gas?	The gas will be vented outside of the building.
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### *Consultation Event 9: Golden Stream, Indian Creek, Big Falls and San Pedro Columbia*

The ninth consultation event was held in the village of Big Falls, in the Toledo district, on April 12, 2023. The meeting was attended by the Alcalde of Big Falls and members of the village councils and water boards of the four communities participating in this event.

*Figure 10: Pictures of consultation event in Big Falls*



Source: C Hulse

Questions and comments from stakeholders are as follows:

No.	Question/Comments	Response from presenters
1.	S. P. Columbia indicated that they use chlorine however it leaves a sediment in the reservoir, which they flush out quarterly, however the community is not enthused with the taste of the water during that time. Women complain that it alters the taste of their traditional dish the Caldo, as well as their traditional coffee.	n/a
2.	When will the project commence?	The presenter explained the lifecycle of projects and indicated that implementation will be within 4 years.
3.	Big Falls indicated that they have two wells and therefore two lines to the reservoir, how would this affect the new technology?	A final assessment will be made by the engineers prior to implementation.
4.	Big Falls indicated that their system needed rehabilitation, especially repairs to their underground pipes. Most of the valves on the underground pipes are gone (crystallized), particularly the pipe running also the Big Falls River bridge. Also, the first pipes laid some 20 years ago are about 3 feet underground and it	n/a



	takes the maintenance people hours to get to them.	
5.	S.P. Columbia said they don't have any sketch map of their lines, so this poses a problem when it is time to find them.	n/a
6.	Some people brought up the point that the water boards are not permanent and as often happens, shortly after they are trained, they leave, without transferring any of the information they learnt. The new people get no on boarding.	The MRTCDLLG's Regional Coordinator for RCDOs stated that during his time he has made sure that there is transfer of institutional knowledge. The BSIF also advise that other institutions would also be trained, for example member of the Ministry and BSIF.
7.	Big Falls indicated that their manual hand pumps also needed servicing as the community needs to use them during the dry season.	n/a

### *Consultation Event 10: San Jose and Na Luum Ca*

The tenth consultation event was held in the village of San Jose, in the Toledo district, on April 12, 2023. The meeting was attended by members of the village council and water board.

*Figure 11: Pictures of consultation event in San Jose*



Source: C Hulse

Questions and comments from stakeholders are as follows:

No.	Question/Comments	Response from presenters
1.	San Jose Water Board Chairman indicated that they do maintenance every two weeks, where they apply a little chlorine powder and wash the system.	n/a
2.	San Jose said they need the project and they think it's a very good plan but they need to improve their generator. They have an "ancient" generator. They need BZE\$8,000.00 to refurbish the generator. The road to the tank is also not	n/a

	accessible, it requires a ten-minute walk. They also complained that fuel is expensive and so they would like to go solar.	
3.	Na Luum Ca indicated that in the dry season they have a shortage of water, however most people have their own water catchment tanks.	n/a
4.	The Na Luum Ca community does not like the taste of the chlorine either.	n/a
5.	Some members of the community noted that when they boiled the water it leaves a stone like substance in their kettle, they were concerned if that was the same substance that causes kidney stones.	n/a

### *Consultation Event 11: August Pine Ridge*

The eleventh consultation event was held in the village of August Pine Ridge, in the Orange Walk district, on April 12, 2023. The meeting was attended by members of the village council and water board, school and church leadership, and other members of the community.

*Figure 12: Picture of consultation event in August Pine Ridge*



Source: BSIF

Questions and comments from stakeholders are as follows:

No.	Question/Comments	Response from presenters
1.	Will we be able to drink the water after the system is implemented?	Yes, the water is clean the disinfection system will help to kill bacteria and parasite that contaminate the water. But it's always a good idea to boil your drinking water.
2.	When will it start and finish?	We cannot give a specific date since we have 20 communities that meet the criteria.
3.	How safe will it be to use the water for cooking and different chores?	It's safe and clean water but boiling for drinking and cooking is a good option.

4.	What quality of system will it be, will it get rid of residue?	This water system is built around high-quality water infrastructure to eliminate pollutants.
5.	Clarify how the system works with the reservoir.	This system will include a water softener pump which will improve the overall water quality and help the natural clean-up process.

### *Consultation Event 12: San Estevan*

The twelfth consultation event was held in the village of San Estevan, in the Orange Walk district, on April 12, 2023. The meeting was attended by members of the village council and water board, church leadership, President of the Lion's Club and other members of the community.

*Figure 13: Picture of consultation event in San Estevan*



Source: BSIF

Questions and comments from stakeholders are as follows:

No.	Question/Comments	Response from presenters
1.	Will the water supply improve?	Yes, the supply should improve since the rehabilitation of the system will be conducted and pipes will be replaced.
2.	Are there any disadvantage in this disinfection system?	This water disinfection system is a new technology that has already been tested and there is no issue.
3.	What are the possibilities that this system be implemented in our community?	This community is one of the communities that already meet the criteria.

### *Consultation Event 13: Carmelita/Tower Hill*



The thirteenth consultation event was held in the village of Carmelita, in the Orange Walk district, on April 13, 2023. The meeting was attended by members of the village council, water board, and other members of the community.

*Figure 14: Picture of consultation event in Carmelita*



Source: BSIF

Questions and comments from stakeholders are as follows:

No.	Question/Comments	Response from presenters
1.	Will this loan affect the residents monthly tariff?	No, the loan covers the supervision and implementation of the water system.

#### *Consultation Event 14: Guinea Grass*

The fourteenth consultation event was held in the village of Guinea Grass, in the Orange Walk district, on April 13, 2023. The meeting was attended by members of the village council and water board, church leadership, school representatives, including from the feeding program initiative, representative from the community youth group and other members of the community.

Figure 15: Picture of consultation event in Guinea Grass



Source: BSIF

Questions and comments from stakeholders are as follows:

No.	Question/Comments	Response from presenters
1.	How does the grievance mechanism work? Do we have to go to the police?	The grievance mechanism is a form for complaints or concerns about any problem that arise due to the project.
2.	Duration of project start to finish?	Projects are normally implemented in a four-year cycle, but they can be completed sooner.
3.	Chairman – it's a good investment and it's a good project for us and we totally agree to it. The current water damage the materials at home.	n/a

### Consultation Event 15: San Narciso

The fifteenth consultation event was held in the village of San Narciso, in the Corozal district, on April 14, 2023. The meeting was attended by members of the village council and water board, a local women's group and other members of the community.

Figure 16: Picture of consultation event in San Narciso



Source: BSIF

Questions and comments from stakeholders are as follows:

No.	Question/Comments	Response from presenters
1.	How long does the system work? (Life of equipment?)	This system is a high-quality system once taken care of.
2.	Are the supplies available in Belize?	Yes, it can be purchased at <i>Prosser Fertilizer &amp; Agrotec Co Ltd</i> .
3.	There's a possibility that the pipes have high contamination (grime, etc), suggest flushing the pipelines prior to installation.	Yes, there will be the need to install flush out points to clean the pipes.
4.	The population is almost at 5,000.	n/a

### *Consultation Event 16: Progreso*

The sixteenth consultation event was held in the village of Progreso, in the Corozal district, on April 14, 2023. The meeting was attended by members of the village council and water board.

Figure 17: Picture of consultation event in Progresso



Source: BSIF

Questions and comments from stakeholders are as follows:

No.	Question/Comments	Response from presenters
1.	Does not have any disinfection system, water is straight from the source.	The water disinfection system will help to get rid of pollutants and make the water clean.
2.	Concern that because of no disinfection, the pipes may be full of algae and other micro-organisms.	Flush out points will be put in place to help clean the pipes of all these impurities.
3.	Suggest to flush out the pipes prior to implementation.	The Rural Development Officer suggested the flush out points.
4.	People consume the water as is, without disinfection. Direct from the pipe.	Reason people agree to the disinfection system.
5.	About 40% of the community pay for water service.	They suggested that meters be considered to encourage people to conserve the water and pay their fees.

## Results of Consultation

The public consultation process has provided valuable feedback from stakeholders, including concerns, questions, issues, and opinions, regarding the proposed water disinfection project (see Annex D: Stakeholders Feedback (Categorized)). One of the primary concerns raised was the functioning of the new system in relation to the existing infrastructure, especially in villages where some supply lines run directly to the customer without going through the reservoir first. Another major concern was the safety of the water and chemicals used in the process.

The stakeholders had several questions, including the availability of supplies in Belize for generating the disinfectant, the lifespan of the equipment, the possibility of using regular salt, and the impact of the equipment on the water supply, including the removal of dirt and high concentrations of calcium. Additionally, stakeholders wanted to know the project's timeframe, how the grievance mechanism would work, who would handle their concerns, and whether the project would hire local people.

Several issues with the existing water infrastructure were identified, including problems with the existing generator, insufficient water supply at some sources, and the need for rehabilitation of pipes and fittings, particularly lock gates. All villages noted that grime (biofilm) in their pipes needs to be flushed out before installing the system. Additionally, some water boards lack a map of existing lines, which makes it challenging to locate pipelines.

All villages indicated their support for the equipment, as they were currently not disinfecting their water and community members complained about the taste and smell of chlorine when it was used to flush out the lines. It was noted that many people were drinking the water directly from the pipe, including children at school and young people on the sports field, making the need for disinfected water even more important. The onsite generated disinfectant will be virtually odorless and tasteless, which is expected to satisfy people who have concerns about the taste and smell of traditional disinfectants like chlorine. Overall, the feedback from the public consultation showed that there was a strong need for the water disinfection equipment and that the community was supportive of the project.

## Culturally appropriate consultations

The consultation events were designed to be inclusive of the key and vulnerable stakeholders identified, and to be socioculturally appropriate for the indigenous communities. A wide cross-section of stakeholders from diverse backgrounds were consulted to get a sense of their initial support for the project. The events were conducted in several languages, including English, Spanish, and/or Creole, depending on the languages spoken by the participants. This ensured that all stakeholders could participate fully in the consultation process and share their concerns and opinions. Meetings were held locally and in person to maximize their accessibility and the engagement between local leaders and community members and the project team.

In addition, the consultations included visual presentations in the form of PowerPoint to augment all verbal presentations. This was done to ensure that the information presented was accessible and easy to understand for all participants. The use of PowerPoint presentations helped to explain complex technical information in a clear and concise manner. This approach was especially important since many of the participants were not technical experts and may have found it difficult to understand the technical aspects of the project.

Overall, the consultation and socioculturally appropriate consultation process provided an opportunity for all stakeholders to voice their concerns, opinions, and suggestions for the

project. This approach ensured that the community's perspectives and needs were taken into consideration throughout the project's planning and implementation. Moving forward, stakeholders can submit questions and concerns through the Grievance Redress Mechanism and as a part of ongoing stakeholder engagement to be done as the projects begin implementation.

## Conclusion

After thorough analysis of the feedback and concerns raised by the stakeholders during the public consultations, it can be concluded that the Water and Sanitation Program for Rural Areas is a much-needed project that will improve the quality and safety of the water supply for the communities in the project area. The fact that all villages indicated their support for the equipment underscores the importance of this project to the community.

It is noteworthy that while the stakeholders were supportive of the project, some raised concerns about the sustainability of the project given the infrastructure and water shortage issues they faced. These concerns will be taken into account during the ongoing refinement of the project, and appropriate measures will be put in place to address them.

Overall, the consultation process provided an opportunity for project proponents to engage with stakeholders from diverse backgrounds, including Indigenous communities, and to obtain their valuable feedback and input. The concerns and opinions of the stakeholders will be considered in the finalization of the project design to better address the needs of the communities. As such, the consultation process was an essential step in ensuring that the Water and Sanitation Program for Rural Areas is culturally appropriate, sustainable, and beneficial to the affected communities.



## Annex A: Sample Letter of Invitation to Stakeholders



Constitution Drive, P.O. Box 459, Belmopan, Belize C.A



24<sup>th</sup> March 2023

Dear Stakeholder,

The Social Investment Fund in collaboration with the Ministry of Rural Transformation Community Development Labour and Local Government is hereby inviting you to a stakeholders' meeting on a proposed Water disinfection project being funded by a loan through Inter-American Development Bank (IDB). This meeting will be held **on Thursday 13<sup>th</sup> April from 9:00am-11:00am at Carmelita Community Center.**

The objectives of this meeting are:

1. To provide an overview of the proposed water disinfection system and its impact on the community.
2. To inform community leaders on the ongoing process in preparation for the implementation of the project.
3. To answer any question or concerns regarding the proposed project.

The water disinfection project seeks to enhance the quality of life by improving access to potable water in your community. The project will invest in a water disinfection system and enhance the infrastructure needed to improve the quality and operation capacity of the rudimentary water systems. This new system will replace the current chlorinating system with a low-cost alternative that is safer to drink. It will also focus on reinforcing the water board's management of water services through training and capacity building to ensure its sustainability.

In this regard, we are encouraging you to attend this very important engagement as your input is necessary for the advancing of this project.

If you have any queries or concerns, please contact Carlos Tun, Executive Director at [carlos.tun@sifbelize.org](mailto:carlos.tun@sifbelize.org) or 822-0239.

A handwritten signature in blue ink, appearing to be 'Carlos Tun'.

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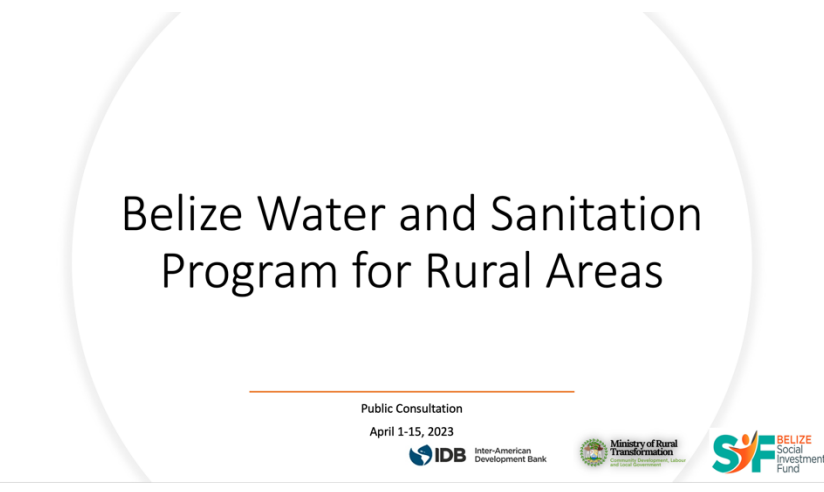

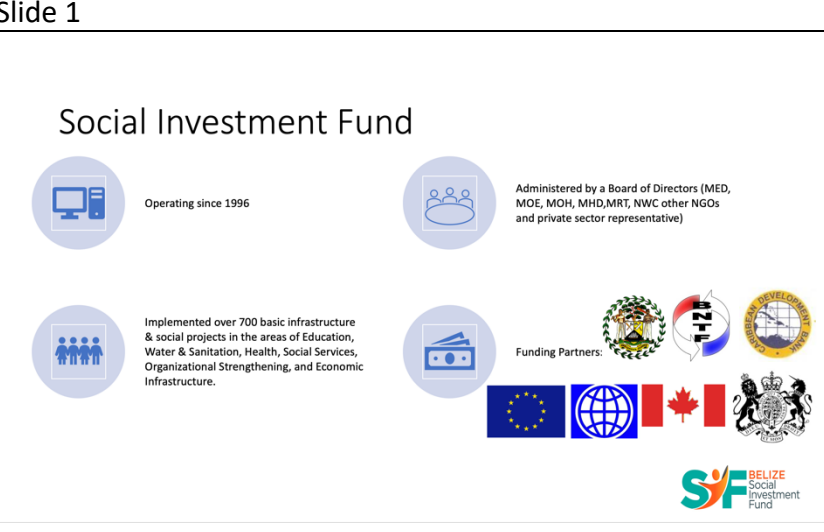
Carlos Tun

Executive Director  
Belize Social Investment Fund (BSIF)  
Constitution Drive, Belmopan City  
Cayo, Belize

## Annex B: Public Consultation Calendar

Date	Time	Location	Villages	SIF Team	RCDOs
Saturday 1 <sup>st</sup> April	10:00am-12:00pm	Gales point Community Center	Gales Point	Dorian Avilez- TO Sandra Grant-FO Marlon Brown-E	Nemencio Acosta 6724140
Saturday 1 <sup>st</sup> April	3:00pm-5:00pm	La Democracia School	La Democracia	Dorian Avilez- TO Sandra Grant-FO Marlon Brown-E	Nemencio Acosta 6724140
Monday 3 <sup>rd</sup> April	3:00pm-5:00pm	San Antonio Community Center	San Antonio	Dorian Avilez - TO Sandra Grant- FO Marlon Brown- E	Adrian Cus 6724144 Dominga Shack (El Progreso) 6724148
Monday 3 <sup>rd</sup> April	7:00pm-9:00pm	Cristo Rey Community Center	Cristo Rey	Dorian Avilez - TO Sandra Grant- FO Marlon Brown- E	Adrian Cus 6724144 Dominga Shack (El Progreso) 6724148
Tuesday 4 <sup>th</sup> April	10:00am-12:00pm	El Progreso Community Center	El Progreso	Dorian Avilez - TO Sandra Grant- FO Marlon Brown- E	Adrian Cus 6724144 Dominga Shack (El Progreso) 6724148
Wednesday 5 <sup>th</sup> April	3:00pm- 5:00pm	Armenia Library	Armenia	Dorian Avilez- TO Sandra Grant-FO Marlon Brown-E	Dominga Shack 6724148
Tuesday 11 <sup>th</sup> April	9:00am: 11:00am	Silk Grass Community Center	Hope Creek Silk Grass	Thalia Dawson-TO Austin Ramclam-FO Emily Hernandez-E	Germin Avila 6724138 Elmer Osorio 6724137
Tuesday 11 <sup>th</sup> April	2:00pm: 4:00pm	San Roman Community Center	Santa Rosa/ San Roman & Red Bank	Thalia Dawson-TO Austin Ramclam-FO Emily Hernandez-E	Germin Avila 6724138 Elmer Osorio 6724137
Wednesday 12 <sup>th</sup> April	9:00am: 11:00am	Big Falls Community Center	Indian Creek/Golden Stream, San Pedro Colombia & Big Falls	Thalia Dawson-TO Austin Ramclam-FO Emily Hernandez-E	Pedro Choc 6713173
Wednesday 12 <sup>th</sup> April	9:00am-11:00am	August Pine Ridge RC School	August Pine Ridge	Ranulfo Mendoza- E Ivor Mendez- FO	Kurt Gideon 6345878
Wednesday 12 <sup>th</sup> April	2:00pm-4:00pm	San Jose Community Center	San Jose/ Na Luum Ca	Thalia Dawson-TO Austin Ramclam-FO Emily Hernandez-E	Pedro Choc 6713173
Wednesday 12 <sup>th</sup> April	2:00pm-4:00pm	San Estevan Lions Club	San Estevan	Ranulfo Mendoza- E Ivor Mendez- FO	Kurt Gideon 6345878
Thursday 13 <sup>th</sup> April	9:00am-11:00am	Carmelita Community center	Carmelita/Tower Hill	Ranulfo Mendoza- E Ivor Mendez- FO	Kurt Gideon 6345878
Thursday 13 <sup>th</sup> April	2:00pm-4:00pm	Guinea Grass Community Center	Guinea Grass	Ranulfo Mendoza- E Ivor Mendez- FO	Kurt Gideon 6345878
Friday 14 <sup>th</sup> April	9:00am-11:00am	San Narciso RC School	San Narciso	Ranulfo Mendoza- E Ivor Mendez- FO	Christian Loza 6281769
Friday 14 <sup>th</sup> April	2:00pm-4:00pm	Progreso RC School	Progreso	Ranulfo Mendoza- E Ivor Mendez- FO	Christian Loza 6281769

## Annex C: PowerPoint Presentation

 <h1>Belize Water and Sanitation Program for Rural Areas</h1> <p>Public Consultation April 1-15, 2023</p> <p>IDB Inter-American Development Bank Ministry of Rural Transformation BELIZE Social Investment Fund</p>	 <h2>Content</h2> <ul style="list-style-type: none"> <li>➤ Introduction</li> <li>➤ Background</li> <li>➤ Programme Scope</li> <li>➤ Eligibility Criteria and Beneficiaries</li> <li>➤ Disinfection System Design</li> <li>➤ Environmental and Social Impact</li> <li>➤ Project Scope</li> <li>➤ Grievance Redress Mechanism</li> <li>➤ Q&amp;A</li> </ul> <p>IDB Inter-American Development Bank Ministry of Rural Transformation BELIZE Social Investment Fund</p>
<h3>Slide 1</h3> <h2>Social Investment Fund</h2>  <p>Operating since 1996</p> <p>Administered by a Board of Directors (MED, MOE, MOH, MHD, MRT, NWC other NGOs and private sector representative)</p> <p>Implemented over 700 basic infrastructure &amp; social projects in the areas of Education, Water &amp; Sanitation, Health, Social Services, Organizational Strengthening, and Economic Infrastructure.</p> <p>Funding Partners:</p> <p>European Union, United Nations, Canada, BELIZE Social Investment Fund</p>	<h3>Slide 2</h3> <h2>Background</h2> <p>In an assessment conducted by MRT and IDB it was found that water service provision in rural areas are faced with several challenge including:</p> <ol style="list-style-type: none"> <li>lack of water disinfection equipment and/or practices;</li> <li>low financial sustainability of VWB;</li> <li>inadequate staff capabilities</li> <li>lack of standard procedures to properly operate and maintain the systems</li> </ol> <p><i>Only 38% of VWB are actively disinfecting water -IDB, 2021</i></p> <p>All these challenges affect the capacity of VWB to maintain service quality among existing customers and contribute to the rapid and premature equipment and infrastructure deterioration.</p>
<h3>Slide 3</h3>	<h3>Slide 4</h3>

## Programme Scope

The Social Investment Fund in collaboration with the Ministry of Rural Transformation Community Development Labour and Local Government is implementing a programme that aims to contribute to improve the quality of water services in Belize's rural areas through the following specific objectives:

### 1. Improving the drinkability of water in rural areas by:

- Financing the installation of an innovative disinfection technology
- Financing the small rehabilitation of the water system including pipe replacement, electro-mechanical equipment and storage tanks.

### 2. Strengthening the institutional capacity of Belize's water sector.

- Training for Village Water Boards on the new technology, financial management and water sources' protection
- Development and deployment of a financial management system to address the issue of manual book-keeping.

The total cost of the Program is USD 4.64 million.



## Eligibility Criteria

Eligibility Criteria	Prioritization Criteria
1. Existence of a water system	1. Population size
2. No active disinfection taking place	2. OPEX covered
3. Existence of a waterboard	3. Geographical Balance
4. Request from community	

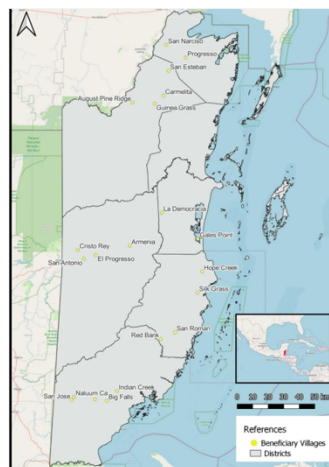
\*OPEX: Operational Expense. The water board can cover the operational cost of their water system.

\* Geographical balance Ensure that all districts benefit from the funding



## Slide 5

## Proposed Beneficiaries



## Slide 6

## Why an alternative for disinfection system in Belize

To identify the best alternative, several variables were factored in:

- Disinfection capacity and residual chlorine in distribution network.
- Influence on water quality and organoleptic properties (odor and taste).
- Cheaper and easy to source in Belize.
- Easy installation for the operator and no need to handle hazardous substances
- Robustness and reliability of the technology
- Initial Investment through IDB loan and Reduces Operation & Maintenance costs



## Slide 7

## Slide 8

PRE-SELECTION CONCEPTUAL TABLE					
	CHARACTERISTIC	GUARANTEES RESIDUAL CHLORINE	EASY FOR OPERATION AND ENVIRONMENTAL MANAGEMENT	NO HANDLING OF HAZARDOUS SUBSTANCES	EASY TO ACCESS IN BELIZE
PHYSICAL	UV	It would be necessary to use another disinfectant to have the presence of chlorine	NO	YES	YES
	SODIUM HYPOCHLORITE	With its application residual chlorine is obtained, using it frequently. Sometimes causes problems	YES	NO	NO
	CALCIUM HYPOCHLORITE	With its application residual chlorine is obtained, using it frequently	YES	YES	NO
	CHLORINE GAS	High cost of chlorine. High residual chlorine is obtained. Residual chlorine is obtained. It is not very dangerous system	YES	NO	NO
	CHLORINE DIOXIDE (CLO <sub>2</sub> )	It is a powerful disinfectant. Free by-product of disinfection. On-site generation system. Chlorine residual not normally detectable	YES	NO	NO
CHEMISTRY	HYPOCHLORITE / MIXED OXIDANTS, etc.	Hypochlorite and / or other. The low concentration of chlorine reduces the formation of by-products and also generates less danger. Non-material	YES	YES	YES
	OZONE	It is dangerous for the environment. You need another disinfectant to obtain residual chlorine. Expensive system and not simple high training	NO	NO	YES
	HYDROGEN PEROXIDE	It would be necessary to use another disinfectant to have the presence of chlorine	NO	YES	YES

## Comparison of the alternative for disinfection in Belize

CURRENT DISINFECTION SYSTEM

RECOMMENDED ALTERNATIVES



## Alternative for Disinfection in Belize

Based on this analysis, it was concluded that the most appropriate technology for Belize is the on-site generation (OSG) option, with two alternatives depending on water supply conditions:

- OSG Sodium hypochlorite ( $\text{NaClO}$ ): the use of this component is recommended when there are no quality problems detected in raw water, such as the presence of iron, manganese, organic matter, etc.
- OSG Mixed oxidants ( $\text{NaClO} + \text{H}_2\text{O}_2$ ): the use of this combination of disinfectants is recommended when water quality problems are detected in raw water, such as the presence of iron, manganese,



### Slide 9

#### Operational Expenses

	Calcium Hypochlorite	Hypochlorite
Annual Consumption Cost per annum	\$6500.00 BZ	\$3900.00 BZ
Quantity	13 buckets (65 gallons)	6 Bucket (30 gallons)



### Slide 11

### Slide 10

#### Rehabilitation

1. Upgrade and painting of existing pump house
2. Painting of water tank
3. Rehabilitating of existing wellheads
4. Rehabilitating and Landscaping of pumphouse area



### Slide 12



## Environmental & Social Risks and Impacts

An **Environmental and Social Analysis** was conducted to identify environmental and social impact and risks common to this project during construction and operation.

An **Environmental and Social Management Framework** was designed for the management of future projects to be financed under this program



Slide 13

## Environmental & Social Risks and Impacts

**Identified impacts** on the physical and biological environment include:

- Emissions and particulate matter from vehicles and machinery related to the works
- Impacts on vegetation in the areas adjacent to the water systems
- Risk of soil contamination due to accidental spills during construction, risk of soil erosion and sediment runoff
- Risk of contamination due to mismanagement of solid waste generated

**Mitigation measures:**

- Contractors will establish a Waste Management Plan, an Effluent Management Plan as well as other plans related to flora protection, establishment of work sites, and chemical substance management, as part of their **Environmental and Social Management Plan**



Slide 14

## Environmental & Social Risks and Impacts

**Identified impacts** on the socioeconomic environment include:

- Risk of occupational & road safety accidents during construction
- Noise and nuisances derived from construction vehicles, labour, works
- Risk of short (few hours) water service interruptions during installation and commissioning

**Mitigation measures:**

- Contractors will establish an Occupational and Community Health and Safety Plan as part of their **Environmental and Social Management Plan**
- Contractors will coordinate with Village Water Boards to minimize potential service interruptions.



Slide 15

## Environmental Benefits

- **Its Autonomous:** What is needed, when it is needed and where it is needed
- **Reduce chemical risk:** due to less exposure to dangerous substances such as calcium hypochlorite, chlorine gas, safety needs and operator responsibility
- **Increase the reliability of the disinfection system:** The dosing process and the low concentration of the disinfectant is stable and continuous, regardless of the operator or who is in charge of the operation.
- **Guarantees user safety:** By Avoid the use of dangerous chemicals: substituted by common salt and hypochlorite at less than 1%. (non-dangerous substance)
- **System can operate 24 hours a day 7 days a week**

Slide 16

## Con't

- **Ease of storage:** for infinite raw material (salt), it does not degrade
- **Greater durability:** Degradation of the solution due to storage, evaporation or instability in light is eliminated
- **Carbon footprint reduction:** green technologies.
- **Less dangerous for operators and population:** concentration of ~0.8% are generally used. A powerful and highly effective disinfectant - generated without creating or transporting hazardous chemicals, ensuring the safety of staff and the surrounding community
- **Proven technology:** teams in operation with more than 25 years of experience in the world.



## ENSURE AVAILABILITY AND SUSTAINABLE MANAGEMENT OF WATER AND SANITATION FOR ALL

### Social Benefits

- As a part of the Sustainable Development Goals (SDG) 6 communities will have improved access to affordable and potable water.
- Water is drinkable, odorless and tasteless
- Reduces microorganisms in the water
- Less chance of water-borne illness, especially for children
- Households can drink water from the tap

### Slide 17

## Grievance Redress Mechanism

- Allows for complaints, concerns or challenges to be received during the implementation of the project.
- Grievances pertaining to the project can be registered via this link:
- or submit a form to:  
Belize Social Investment Fund (BSIF)  
Constitution Drive, Belmopan City  
Cayo, Belize
- Call us at Tel: (501) 822 0239

### Slide 19

### Slide 18



## Questions

### Slide 20

## Annex D: Stakeholders Feedback (Categorized)

### CONCERNS:

- How the system will work in relation to the existing infrastructure – some villages have some of their supply lines running directly to the customer without going through the reservoir first.
- Safety of water
  - Will the water be safe for drinking?
    - Will the system remove mineral deposits in the water that can cause kidney stones?
    - Can the disinfectant cause health problems in the way that adding excessive fluoride to water can be dangerous?
  - Can the water be used for cooking and cleaning?
  - Will the water affect agricultural crops?
- Safety of the chemicals
  - Is the hydrogen peroxide safe?
  - Will the hydrogen gas cause deterioration of the pumphouse like chlorine does?
  - Will the hydrogen gas cause any harm since the pumphouses are not ventilated?
- Will this project necessitate additional charges to the community?

### QUESTIONS:

- Equipment
  - What is the lifespan of the equipment?
  - Are the supplies for generating the disinfectant available in Belize?
  - Will the equipment improve the water supply?
  - Will the equipment remove the dirt from the water, especially during flood time?
  - Will the equipment remove the high concentration of calcium from the water?
  - Can regular salt be used, or can we make our own salt?
- Project
  - What is the timeframe for implementation?
  - How does the grievance mechanism work, do we have to go to the police?
  - If we activate the grievance mechanism, who will be handling our concerns?
  - Will the project be hiring local people?
- Infrastructure
  - Will we need a new building for this equipment?

## ISSUES:

- Infrastructure
  - Problems with existing generator
  - Problems with water supply at the source
  - Need rehabilitation of pipes and fittings, especially lock gates. A couple villages have air release valves that are broken or not functioning.
  - Grime in the pipes need to be flushed out prior to installing the system
  - Some water boards cannot find their pipelines because they don't have a map of the existing lines.
- Most villages are only partially metered.

## OPINIONS:

- All villages indicated that they needed the equipment as they were currently not disinfecting their water and when they do use chlorine to flush out their lines, community members complain about the taste and smell of the chlorine.