

**WATER AT WORK MINISTRY**  
**Sustainability Report**  
**2023**







# WATER AT WORK MINISTRY Sustainability Report: 2023

## Sustainability Impacts in Three Areas: Water & Environment, Economic, and Social & Community

By: Dan Blevins, Executive Director, Water at Work Ministry, Inc.



In memory of Dr. Omar Keith Helferich,  
Dedicated Volunteer and the creator of our  
Sustainability Reporting Process.

**1935-2024**

### How Do We Assess Sustainability?

**SUSTAINABILITY:** A measure of how well an enterprise is able to ensure its continued operation in the future by generating sufficient support - economic, social, and environmental - in the present.

**IMPLEMENTATION OF A STANDARD METHOD:** The Global Reporting Initiative (GRI), The Hague, Netherlands, has developed a format and general guidelines for assessing the sustainability of any enterprise. The Water at Work Ministry Sustainability Report follows those general guidelines and format. Self-assessment is conducted on a variety of applicable criteria.

### **The Water at Work Ministry Model**

The mission of Water at Work is to transform the lives of over one million of the poorest people in the Dominican Republic through clean water distribution plants, business development and access to the gospel of Jesus Christ.

### **Key Elements**

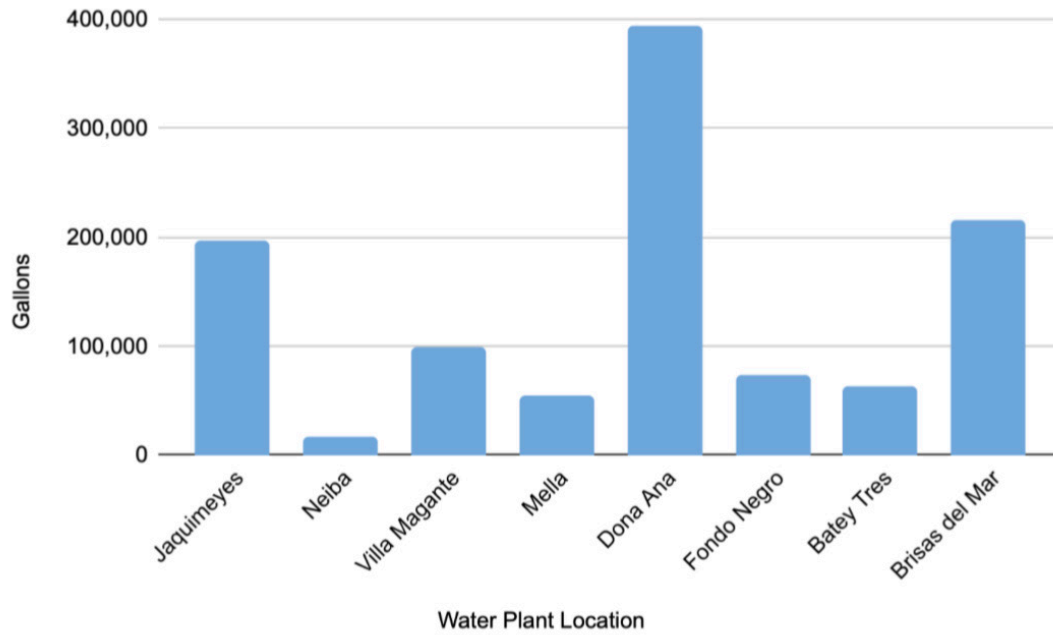
We build and equip complete water purification and distribution businesses in partnership with local churches, thus putting them in the business of reaching their own community with clean, safe water and the Gospel of Jesus Christ.

- All plants are certified for operation by the Ministry of Public Health.
- Selling below market pricing improves access to clean water for all people.
- In-country work is carried out by Fundacion Water Work, a Dominican non-profit formed and supported by Water at Work Ministry, Inc.
- Water process equipment and building materials are purchased locally in the Dominican Republic.
- Profits are devoted to sustaining the business, empowering the church in outreach and to economic development of the community.

### **Water Plant Names/Locations**

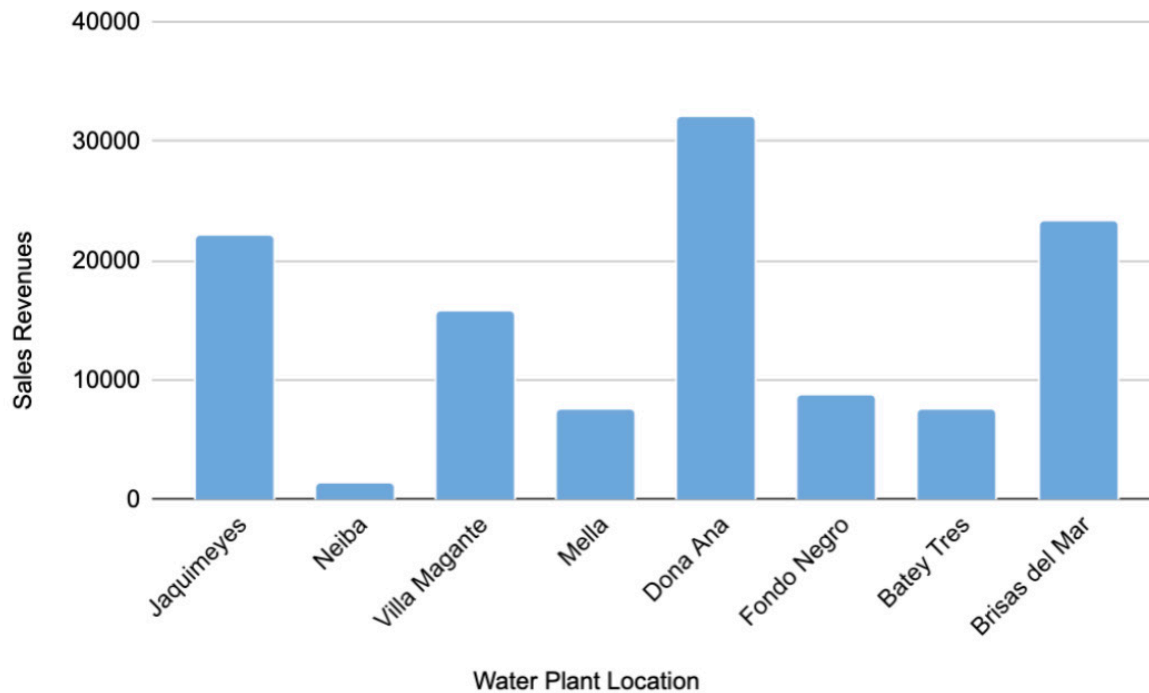
Eight water plants were operating in 2023. Each of the plants has its own business name and service logo. However, for simplicity, the village in which each plant is located is used as its reference name in this report.

## Quantity of Water Produced by Location (Gallons)



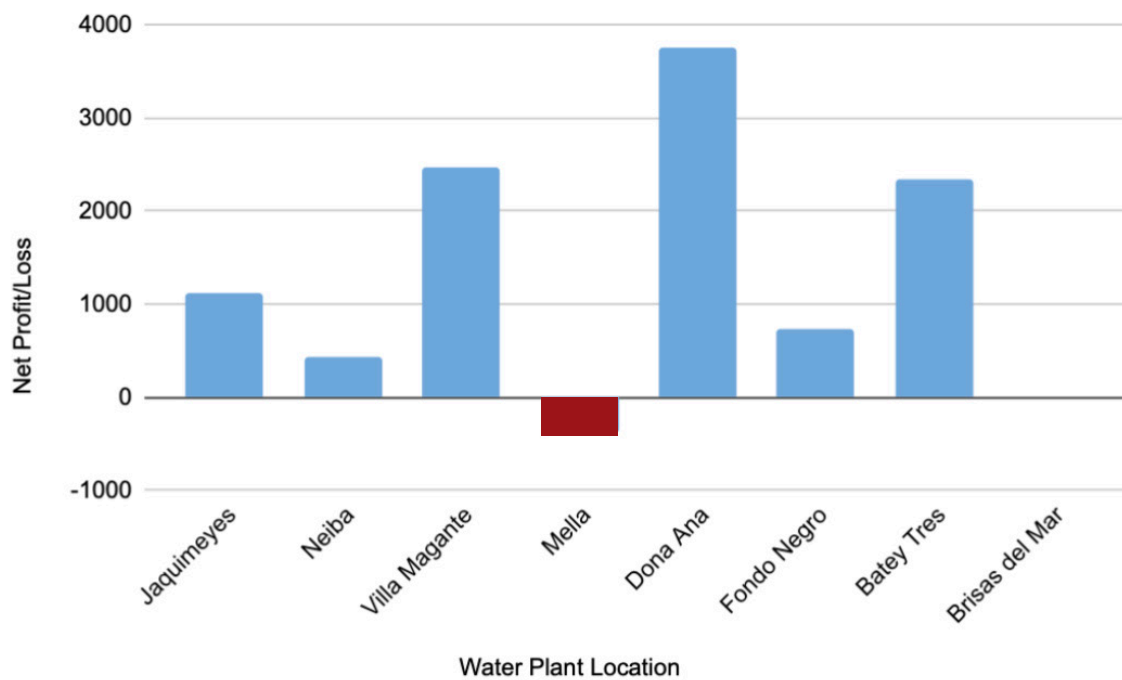
Total Production for 2023 was 1,101,390 Gallons

## Sales Revenues for Each Plant by Location (US\$)



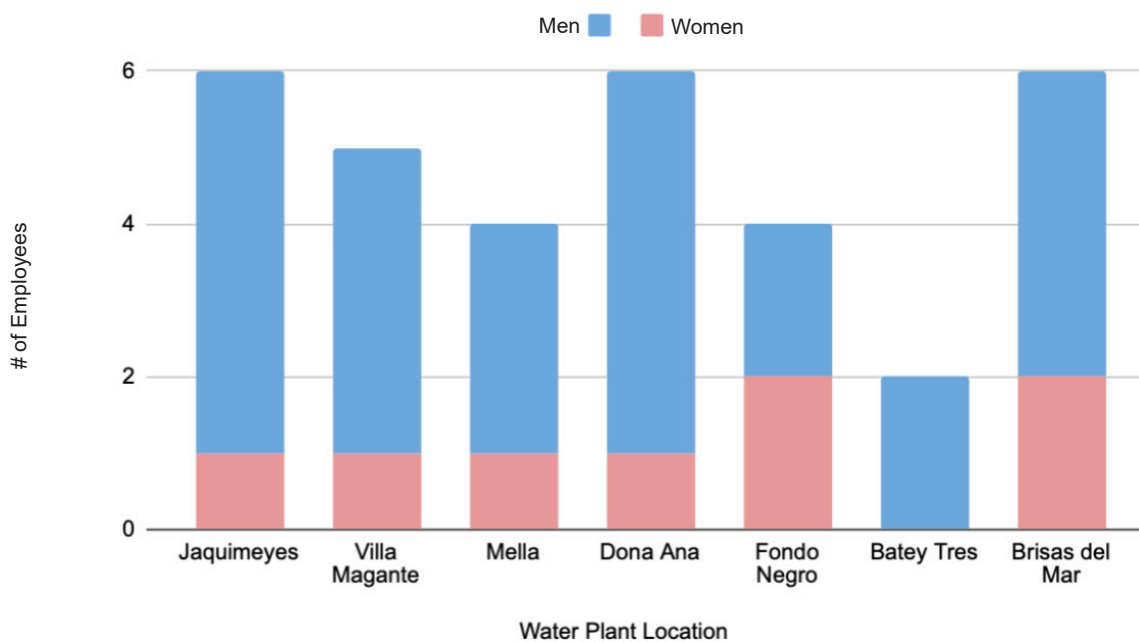
Total Sales Revenue for 2023 was \$138,720

## Profit/Loss for Each Plant by Location (US\$)



Net Profit generated by these seven water plants in 2023 was \$10,489

## Employment per Water Plant Total Number of Full-time Jobs Created



## **Discussion of 2023 Operating Results**

Water production for 2023 (1,101,390 gallons) was lower than in 2022 (1,445,720 gallons) due to extended downtime at some of the water plants. Overall, thirty-one months of water production was lost. This was due to unplanned downtime at three plants (Mella, Batey Tres, and Fondo Negro), the permanent shutdown of the Neiba plant in February, and temporary shutdowns at two plants (Villa Magante and Dona Ana) for rebuilding and reorganization. Despite this, sales revenues were down by only \$9,544 compared to 2022 due to price increases implemented at some water plants. The total net profit generated by seven water plants was \$10,489 which includes a loss of \$385 at Mella. A net profit could not be calculated for the Brisas del Mar plant because the expense data reported for most months of 2023 was incomplete and could not be reconstructed.

Employment at the water plants totaled 33 full-time positions in 2023. Eight of those jobs (24%) were filled by women. Neiba's job positions were not included in this count.

The Neiba water plant ceased operation in February and was permanently closed in August. After repeated incidents of operational errors over the past several years, and with the intransigence of Neiba management to address and remedy the issues we raised, we decided to repossess the water process equipment and the delivery truck and move them to Batey Tres.

## **Financial Support to Water Plants - 2023 Totals**

Financial assistance was provided to all eight of the water plants to some degree in 2023. Our goal is to develop sustainable, self-perpetuating water businesses. The degree to which financial support was provided in 2023 is an important consideration in determining when, and if, we have reached that goal. The table below shows the financial assistance received by each water plant in 2023. The Supplies program represents an extension of credit to the water plants by Fundacion Water at Work. Plants must pay back 70% of their outstanding bill to order more supplies from Fundacion. The Supplies program is not a financial grant to the water plants but does provide assistance through the extension of liberal credit terms.

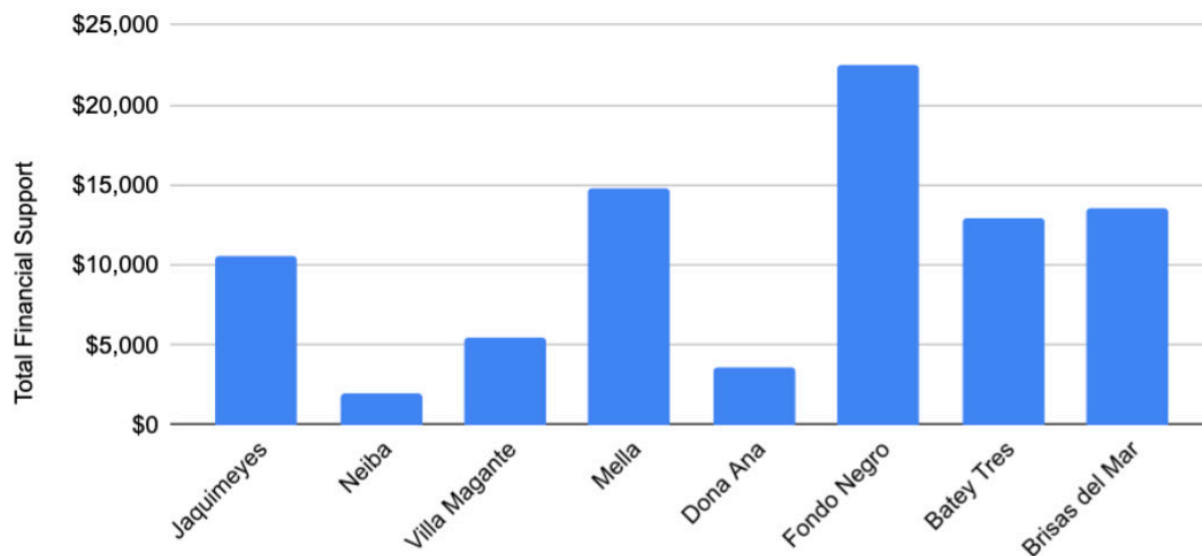


The same should be said of our loan program. The loans are unsecured and interest-free and, as such, are a financial benefit to the water plants. The Expenses Paid list does indeed show financial grants that were made in 2023 to address particular needs that arose where quick action was needed to keep the water plant(s) in operation. In reality, a sustainable business should make those payments without our assistance. That is our ultimate goal.

### Financial Support to Water Plants - 2023 Year End Balances (\$US)

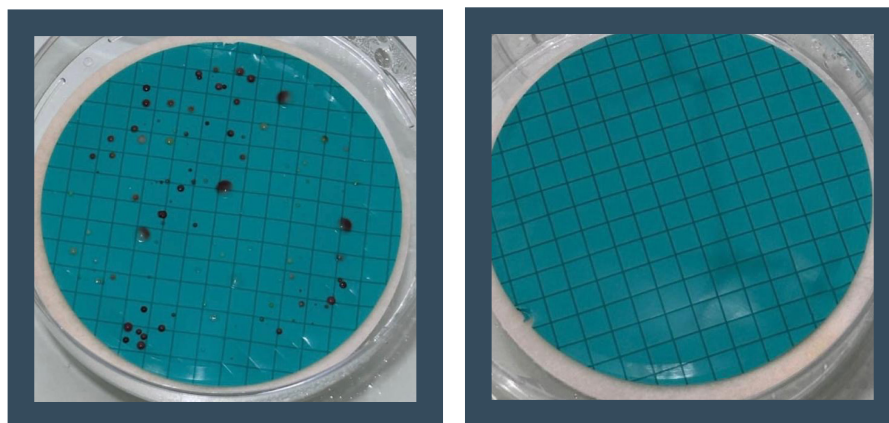
Water Plant Location	Owed for Supplies	Loan Balance	Expenses Paid	Total Financial Support
Jaquimeyes	\$2,513	\$371	\$7,640	\$10,524
Neiba	\$0	\$2,008	\$0	\$2,008
Villa Magante	\$416	\$3,335	\$1,675	\$5,426
Mella	\$1,298	\$6,763	\$6,717	\$14,778
Dona Ana	\$1,303	\$1,821	\$460	\$3,584
Fondo Negro	\$0	\$5,914	\$16,605	\$22,519
Batey Tres	\$1,061	\$0	\$11,810	\$12,871
Brisas del Mar	\$363	\$0	\$13,244	\$13,607
Totals	\$4,441	\$19,841	\$50,511	\$74,793

### Financial Support in 2023 by Water Plant



## Water Quality & Testing

- Biological testing is conducted for each water plant on a bi-weekly schedule with four sampling points per plant.
- Tests are conducted for E. Coli, Total Coliforms, Pseudomonas and aerobic bacteria.
- Contamination incidents in the Final Product sold for 2023: NONE



\*\*Left: Positive test for Aerobic Bacteria in the Villa Magante water plant's filling room.  
Right: Negative test for Aerobic Bacteria in water.\*\*

- Remedial actions were taken to clean out any unit operations where positive tests occurred.
- Downtime for remediation/cleaning of bacteria from the process was required in 2023 at the following water plant locations: Neiba, Fondo Negro, Villa Magante and Mella.

## Environmental Impacts

Water distribution is accomplished by the use of reusable, five-gallon plastic bottles. The bottles are washed, sanitized and refilled as many times as possible. Leaks and breakage eventually occur until the bottle has to be taken out of service. Faulty bottles are recycled to the bottle manufacturer and reformed once again into new bottles.

One of the primary methods for providing potable water for the villages and bateys in the Dominican Republic is open area fires for boiling. The use of water from the WateratWork Ministry plants reduces the emissions



of carbon dioxide by decreasing the practice of boiling water to purify it. Our plans include surveys to obtain an estimate of CO2 emission reduction from this change in practice.

## **Managerial Changes to Boost Productivity**

During 2023 it became clear that our Fundacion staff would need to take a more direct role in the management of the water plants. Despite frequent training provided by Fundacion and business guidance offered regularly, operational mistakes were repeated. Management failed to achieve the expected results at most water plants. Our support contract language was modified for all water plants giving Fundacion oversight of the managerial performance. Fundacion was also vested with the right to replace managers who did not perform satisfactorily and to dismiss and replace operational staff who were underperforming.

Management changes were made at Brisas del Mar, Fondo Negro and Villa Magante at the insistence of the Fundacion staff. Their conclusion in these three cases was that the productivity goals for the water plants could not be achieved under the current leaders. Despite the best efforts of the Fundacion staff to train and encourage the leaders at these three water plants the conclusion was reached to replace them. Laid-off employees were paid their severance in accordance with the Dominican labor laws.

The entire staff at the Fondo Negro water plant was terminated in October when it was discovered they had been secretly operating the water plant "off books" and keeping the revenue for themselves. Similarly, the entire staff at the Villa Magante water plant was dismissed and replaced in November for poor performance.

Fundacion did implement an innovation in training amid these problems. Ariel, a top-performing water plant operator at the Mella water plant, was hired as a contractor by Fundacion with the assignment of becoming a mobile expert trainer for the water plants. He was deployed to Villa Magante for three months in August after they had restarted operations following the rebuild of the water plant.

## Water Plant Managers Meeting



A key feature of our approaches is getting the water plant personnel together at least annually to review business operations, share ideas and best practices, and to encourage one another. The meeting of the water plant personnel is an important element of the continuous improvement process. The outputs from lessons learned contribute to the desired outcomes through the MERL process.

The managers of four of the water plants met together with the Fundacion Water at Work staff (dark blue shirts) for training and to review best practices on July 24, 2023. These are the managers we consider to have performed well.

### **MERL (Measure, Evaluate, Review and Learn) Activities**

We adopted the acronym MERL in 2022 to describe our internal process for continuous improvement. A MERL specialist, Madison Bearden, was contracted for the summer of 2023 to continue development of our Logic Framework, to develop MERL tools for our use, and to create a plan for MERL implementation.

From her work we now have Spanish and English versions of data collection tools that we will put into use with our first community survey in 2024.

## **Water Plant Productivity**

Productivity improvements that were implemented in 2023 are as follows:

1. The Villa Magante water plant was rebuilt and the water process was upgraded. In addition, our first automatic, four-position bottle filling system was completed and started up. The productive capacity of Villa Magante is now estimated at 1,500 bottles per day in a single shift. The challenge now will be to build sales volume to take up the capacity.
2. The expansion and rebuild of the Dona Ana water plant began in October. The project includes the same automatic bottle filling system as installed at Villa Magante. Water production ceased when the project began.
3. The move to replace water softeners in our water plant purification process with chemical injectors continued in 2023. All plants but one (Jaquimeyes) were converted from water softening by ion exchange resin to chemical injection in 2023. Problems created by the water softeners can now be avoided. In this innovative solution, the softeners are removed entirely from the process. In their place, two dosing pumps are added which inject antiscalant and caustic soda prior to the RO unit. These chemicals keep the RO membranes clean and let the hardness ions (calcium and magnesium) travel through in the waste water. The need for salt for regeneration of the softeners has been eliminated and the possibility of bacterial contamination in the softeners has been eliminated.
4. Conversion to bottled oxygen for ozone generation continued successfully in 2023 with all plants now running on bottled oxygen. We rely on simple ozone generators (the MP-3000 from A2ZOzone) at our water plants to provide ozone in the final purification step prior to bottling the water. The efficiency of these ozone generators is highest when they are supplied with dry air or oxygen. We had previously tried to provide dry air by drawing the local, humid air through a tube packed with a drying medium. This proved difficult and largely ineffective. In 2022 we began switching to bottled oxygen (150 pound cylinders) to feed the ozone generators. The bottled oxygen is very dry (dew point below 40 degrees C) and the efficiency of ozone generation is much higher with pure oxygen versus air. The results have been very good. The ozone generators run with greater efficiency and have fewer maintenance issues.



5. We began implementing a new strategy for water distribution in 2023. We have always relied upon large, Daihatsu trucks as our primary water delivery vehicles. These trucks are rugged but also feature a manual shift transmission and require the driver to have a commercial endorsement on his drivers license. We have had many situations in which the clutch wore out and had to be replaced due to the inexperience of the driver. There have also been times where a suitably documented driver could not be hired thereby leaving the truck idle. The solution implemented by Fundacion staff is to employ smaller trucks with an automatic transmission that any driver can operate. In addition, Fundacion has begun the use of cargo motorcycles for distribution of water bottles within a radius of a few miles of the water plant. These vehicles can be operated by any licensed driver, are nimble enough for poor roads, and can carry up to 60 bottles per trip. We began actively switching out the larger trucks for smaller trucks in 2023 and deploying cargo motorcycles to each water plant.

### **Water Resource Infrastructure**

Wells were successfully drilled at Fondo Negro and Dona Ana, thereby ensuring those two water plants will have sufficient water resources for their operations. A well planned for Mella was not drilled based on the advice of several well drilling experts that a quality water source would not be found in that area. The future of the Mella water plant is in question now that the water quantity supplied from the community well at Mella is decreasing and is unable to supply sufficient water to the water plant.



**WATER AT WORK MINISTRY**  
**P.O. Box 923053**  
**Peachtree Corners, GA 30010**  
**[www.wateratworkministry.org](http://www.wateratworkministry.org)**  
**EIN #45-4539743**