LOS PLANES, COSTA RICA
2019 Impact Report

liveglobally gravity water


In August of 2019, Gravity Water partnered with Live Globally to bring safe drinking water access to Escuela Los Planes, located in Drake, Costa Rica.

DEMONSTRATED NEED

WATER QUALITY

In Los Planes and most rural regions of Costa Rica, access to safe drinking water and freshwater resources that lack contamination of dangerous pollutants are not commonplace. Due to the lack of proper and advanced infrastructure, pollutants, such as human waste, commonly enter groundwater sources through faulty septic systems; this is the number one cause of water-borne illness amongst children globally. In addition to human waste, other pollutants, such as chemicals and animal waste from agriculture, water-based parasites, and common bacteria are largely prevalent in most coastal community groundwater sources, since they are usually the lowest point in the watershed.

Using an alternative water source, such as rainwater, that doesn't come from groundwater (shallow wells) or surface water (rivers and springs) prevents the risk of water contamination significantly.

WATER ACCESS

Though manny communities throughout Costa Rica have access to large amounts of fresh water year-round, accessing water can be challenging. This is due to the dependency of electricity-based pumping and infrastructure to move water from the source to the place of need. Power outages are common in southern Costa Rica, and with Los Planes' remote location, repairing electrical grids can leave communities without electricity for long periods.

Without electricity, these communities also lose their water source, since most water storage requires pumping.

ESCUELA LOS PLANES - WATER FOR LIVING PROJECT

PROJECT OVERVIEW

The primary objectives of the Escuela Los Planes Living For Water Project were to create a localized, reliable, on-site energy-free safe drinking water station the community could have year-round access to, especially in times of power outages and water shortages.

The entire project encompassed 3,300 liters of rainwater storage, with a 250 liter safe drinking water storage tank. In addition, Gravity Water installed a connection to the school's pre-existing water system, allowing the school to use the safe drinking water system during the dry season.

PROJECT APPROACH

The Escuela Los Planes Living for Water Project was developed through support of Living Globally, who was the primary funding partner and on-the-ground contact for the project, and through the assistance of local community members in Los Planes, Costa Rica.

Through the organization and coordination of Mr. Wright and Ms. Goforth, professional assistance from Mr. Heck, and the support of countless community members, the entire project was able to be completed within a 5-day period.

RAINWATER HARVESTING SYSTEM

The First step in the project was replacing the old gutter system that lined the roof of the comedor, where the students would eat and have meals prepared. Installing a brand-new gutter ensured that the project would work as efficiently as possible and there wouldn't be any required maintenance in the near future.

After connecting the new gutters to the roof, the Gravity Water team worked to install a rainwater harvesting system that would allow the school to turn the system off and on through turning a ball valve on the wall. This ensured that the roof had the ability to "wash off" and that the first flush (water from the first rain) wouldn't enter the water storage tanks.

GRAVITY WATER SYSTEM

The second aspect of the Escuela Los Planes Living for Water Project focused on installing the filtration system and drinking water storage tank. This system works through directing the rainwater in the blue storage tanks through a three-tier water filtration process, including two activated carbon filters, which remove sediment, parasites, taste, odor, chemicals, and heavy metals, and 0.1-micron hollow membrane filtration, which removes 99.9999% of bacteria.

The entire filtration system is powered through gravity, allowing the community to have safe drinking water in times of power outages.

COMMUNITY TRAINING

In addition to providing Escuela Los Planes with safe water access, this project provided an educational component through a public walk-through of the system.

During this training, Mr. Wright spoke with the students of Escuela Los Planes and local community members on why the project was installed, why the system focuses on rainwater use as a safer alternative, how to operate the system, and how to change filters and maintain the filtration system.

In addition, Mr. Wright and Ms. Goforth advised the community on how they could create a similar system at home and what the associated costs were for the materials needed.

PROJECT SUMMARY

The Escuela Los Planes Living for Water Project is currently providing the localschool of 50 students plus staff in with safe water access through it's 3,550 liter gravity water system which will provide the school a maximum of 750 liters of EPA-rated safe drinking water each day.

The Escuela Los Planes Living for Water Project will benefit the students and staff of Escuela Los Planes throughout the future, with a system lifespan of decades, requiring only minimal maintenance and filter replacement costs of less than $50/year.

The Escuela Los Planes Living for Water Project Impact Report was developed on August 20th, 2019, by Gravity Water for supporting entities and project information. For more information about the Escuela Los Planes Living for Water Project, please contact Danny Wright at danny@gravitywater.org

Gravity Water would like to thank Trista Goforth who was a major contributor to the planning of this project, and Live Globally, who made this project possible through funding, as well as all of the community members of Los Planes and Drake Bay who supported the team through providing accommodations and assistance in the development of this project.