



The compelling need for clean water in the RAAS, Nicaragua

PHFM has conducted 2 years of quantitative and qualitative research to identify the compelling need for clean drinking water in the Southern Atlantic Autonomous Region of Nicaragua with a particular focus on the La Cruz de Rio Grande and Desembocadura de Rio Grande municipalities. Through first-hand, community level surveys to national statistical data provided by the Nicaraguan Ministry of Health, it is very clear that waterborne illness is the number one cause of disease and illness in the target area. Furthermore, the reported incidence of waterborne illness at community clinics and health centers has increased nearly 35% in the target area between 2012 and 2013. Hurricanes, flooding and drought bear influence on this fluctuation. However, our interviews with community leaders and health officials indicate an increase of waterborne illness in the region of epidemic proportion.

Scope and significance of the problem

The target area is accessible by water only. The Nicaraguan Government is unable to provide adequate education and access to potable water due to budgetary and logistical challenges. The result is a population of roughly 12,000 rural inhabitants spread between 13 small communities with only 2 municipal wells roughly 60 miles apart.

The significance of this is that there is gravely inadequate access to potable water in all 13 communities. In 2013, the Nicaraguan Ministry of Health documented 11,987 visits to health centers in the target for illnesses related to consumption of unclean water. The illnesses include: 1) Protozoal Infections such as Giardia and amoeba; 2) Bacterial Infections such as E. coli, Leptospirosis, Typhoid Fever; 3) Viral Infections such as SARS and Hepatitis A and 4) Parasitic Infections.

The most common symptoms in the rural communities in the target area include: diarrhea, vomiting, fever, fatigue, compromised immune system, rash, asthma, bloody urine, liver and spleen failure, meningitis. Many of these symptoms, when untreated, as they usual are, can lead to severe medical trauma and death.

Education regarding the importance and hygiene and the value of drinking clean water is not a priority for the communities and the communities have not yet developed a culture that recognizes the cause and effect relationship between unclean water and illness.

Our target area

PHFM is focused on the extremely isolated rural poor. Primarily small communities with fewer than 500 inhabitants that have little or no access to clean water, education or medical services. The specific target area consists of two municipalities in the Southern Atlantic Autonomous Region of Nicaragua, namely La Cruz de Rio Grande and Desembocadura de Rio Grande. PHFM is focused on all members of the community female/male, old/young, poor/less-poor. The communities in our target area are accessible by water only, further contributing to the isolated, lack of education and barriers to government funded clean water initiatives.

Geographic range

The specific target area is 5,187 square kilometers and consists of two municipalities in the Southern Atlantic Autonomous Region of Nicaragua, namely La Cruz de Rio Grande and Desembocadura de Rio Grande. The average



population density is roughly 3.5 hab/sq. km. The actual geographical area is located around the following geographical coordinates: 13°07'00"N 84°11'00"W and 12°55'55"N 83°34'37"W. The target elevation above sea level ranges between 0 and 51 feet and the target area suffers catastrophic hurricanes, flooding and droughts.

Evaluating the benefits

The benefits of providing education and access to clean drinking water is measurable and the micro, mezzo and macro levels. By provide health and hygiene education and clean water wells in ultra-poor rural communities we can measure the decrease in the incidence of health center visits for waterborne illness as a municipal level and community level and measure the incidence of the following symptoms at the community, municipal, regional and national level: diarrhea, vomiting, fever, fatigue, compromised immune system, rash, asthma, bloody urine, liver and spleen failure, meningitis.

The Nicaraguan Ministry of Health has excellent baseline information and PHFM has a consistent and active presence in the target area and conducts surveys, follow-up and evaluations in the target area many times each year at a community level.

PHFM survey results and our matrix to measure the benefits of the education and well drilling program are reconciled with national statistical data and corroborated by municipal and regional health officials.

The problem set and organizational priorities

Through 15 years of humanitarian experience in the target area and through statistical research and firsthand experience PHFM has identified waterborne illness as the single largest health issue in the target area. It affects infant mortality, education, productivity, production, social structure, food security and a fundamental barrier to eliminating extreme poverty. Our solution is to provide health and hygiene education and drill clean water wells and has been intentionally designated as the top priority of our organization after working effectively in many of humanitarian projects in this target area. The resounding request from community leaders, farmers, mothers and children is for access to healthcare due to the need to treat waterborne illness.

We are uniquely qualified

PHFM is uniquely qualified to carry out health and hygiene education and clean water well drilling in the target area.

Experience: We have been collaborating with communities in the target area since 1998 to deliver humanitarian and development programs. Our projects have included infrastructure, health, production, education and communication. We have staff in the United States and in Nicaraguan and well developed infrastructure to accomplish our goals. We are in possession of cutting edge equipment to deliver quality wells and employ best practices with our own in-house Health and Hygiene Education Specialist.

Government Registration: PHFM has been a registered 501 c (3) public charity based in the state of Massachusetts since 2000. Our FEIN number is 04-3525541. Additionally, PHFM is a registered Non-Governmental Organization in Nicaragua with the Ministry of Government: 5897 and the Nicaraguan Ministry of Foreign Relations: J0810000223338 with tax exempt privileges and is registered as an authorized "Supplier" for goods and services with the Ministry of Housing and Public Credit, which means we are authorized to provide humanitarian services for the government.



Staff: PHFM has key staff members who are highly qualified. The key staff involved in this project are:

PHFM Executive Director: based in Managua, Nicaragua and has a Master's Degree in Sustainable International Development and over 18 years of field experience with international organizations, governments and strong community level experience including ISO 9001 experience.

PHFM Communication and Education Coordinator: based in the US and has over 30 years of experience in education and has a special focus on community health and education and supervises the Health and Hygiene Education component of our program.

PHFM Operations Manager: based in the RAAS, Nicaragua supports the education and drilling logistics and community participation.

PHFM Master Driller: based in Leon, Nicaragua has over 10 years of well drilling experience in Latin America and has coordinated over 500 water projects and provided clean drinking water to over 200,000 people.

PHFM Administrator: based in Managua, Nicaragua has over 12 years as an Economist and builds and manages projects, and has ISO 9001 and SAP experience.

PHFM has very strong team with the skills and abilities necessary to deliver quality and sustainable clean water projects to our target area.