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Haiti, Water and Sanitation

Haiti: Water and Sanitation in the Rural Areas

Life in Haiti is significantly different than life in America. Their ideals, morals and living conditions vary greatly than that of our own. While Haiti is known as the United States' "backyard," several of our common agricultural practices and techniques have yet to be implemented and utilized by Haitians. From their common practices of culture, their vast differences in landscape, and their different sanitation practices, the people of Haiti are faced with several unique challenges unlike that faced within the United States.

Haiti, officially known as the Republic of Haiti, is a land of rocky, mountainous terrain which lies in the subtropics of the western one third of the island of Hispaniola between the Caribbean Sea and the North Atlantic Ocean. This small, tropical country lies adjacent to the west of the Dominican Republic and is South of Cuba. The Dominican Republic and Haiti both occupy the same island (Hispaniola). Haiti lies in the path of many hurricanes and other natural disasters. In 2008 the country faced destruction from four tropical storms, and in 2010, 230,000 people were killed in a 7.0 earthquake. Haiti covers about 10,714 square miles; slightly smaller than the state of Maryland, and is inhabited by 10,850,000 people (About Haiti, 2015). Due to the small size and high population density, this country faces several unique challenges impeding their ability to overcome natural disasters, maintain health, and prosper (Haiti - Poverty and Wealth). Day in and day out, Haitians try their hardest to simply survive; a difficult feat when taking into account the amount of extra work it takes to provide for a family. An estimated 80% of Haitians live in absolute poverty with only a few thousand individuals constituting the upper class, although there are no formal reports of actual statistics (About Haiti, 2015). A majority of Haiti's inhabitants are farmers who produce coffee, mangoes, sugarcane, rice, corn, sorghum and wood. Economically, a developed country tends to have less than 5% of the population engaged in direct agricultural production. Based on this statistic alone, it is easy to imagine the disparity between Haitian lives and that of our own.

The typical Haitian diet consists of the staple elements of corn, cassava, millet, rice, yams, beans and fruits. In the Haitian diet, a large significance is placed on the starches, with a common meal at lunch consisting of a dish of rice and beans and boiled roots or tubers.

Due to the rural income being so low, people rarely eat meat, fish, milk or eggs. Haiti suffers from a heavy burden of hunger and malnutrition as nearly 40% of households were undernourished and 50% of children suffer from chronic malnutrition (Agriculture and Food Security). The Government of Haiti is working with foreign countries such as the USA, to improve access for locally produced foods through a system of food vouchers. These programs also work to improve the nutritional status of pregnant and lactating women and young children through the provision of specialized foods. Haitian farmers are slowly increasing agricultural production through more modernized methods and natural resource management. Although this increase in production may lead to the ability to better support a family, many Haitians hold in high regard employment elsewhere. However, even those Haitians lucky enough to have a job in cities such cannot expect to earn more than \$2 USD per day (Haiti - Poverty and Wealth). The World Bank estimates that around 54% of the Haitian population lives on less than U.S. \$1.00 each day and that 78% lives on less than U.S. \$2.00 per day (Sentlinger). With this extremely low income, rural Haitians without access to the city's greater number of employment opportunities find it extremely difficult to secure adequate income and nutrition for themselves and their family (Shah, 2007). In rural

areas, farmers produce the food for their family on small plots of land and are supplemented through “rice feedings” and other generous international outreach programs and humanitarian groups (Shah, 2007).

The average annual per capita income in Haiti is \$817 USD, making Haiti the poorest country in the Western Hemisphere, and 3rd poorest in the world (About Haiti, 2015). Income in rural areas drops to as low as \$100 per person, per annum. 60% of the labor force is employed in farming and only 30% of the land is considered suitable for cultivation, although a significantly larger percentage is utilized (About Haiti, 2015). The major cash crops are coffee, sugar, sisal and essential oils, but even these “major” crops net a meager revenue for producers.

Educational opportunities in Haiti are slim. The majority of schools are private institutions run by religious organizations and institutions looking to make a profit, requiring Haitian parents to spend about \$130 each year to send their child to school (Four Things You Need to Know about Education in Haiti). This is very expensive compared to the average annual incomes. Education costs can be up to 70% of a rural family’s income, but in the less remote areas only 15% of annual income is generally attributed to educational costs. These tuition fees are a major barrier for many families. These factors leave more than 200,000 children uneducated and over half of the adult population illiterate (Four Things You Need to Know about Education in Haiti).

Disease spread is common throughout Haiti, largely due to their poor infrastructure. Over 5% of the population was infected with HIV in 2000. Access to healthcare is limited as each physician cares for 4,000 persons, compared to just 395 in the United States (Undernourishment Around the World). Yearly health care is expensive compared to annual incomes, at about \$77 per capita and accounting for approximately 75% of yearly income for rural families, or 9% for urban families (Redmond, 2010). Volunteer health clinics provide basic health care. The 7.0 magnitude earthquake in 2010 destroyed the healthcare infrastructure and also shut down basic services such as electrical grid, transport, water and sanitation systems (Redmond, 2010).

Most Haitians lack access to clean, potable water; instead they are washing their clothing, defecating and obtaining water from the same streams. This renders the streams and rivers unsafe for consumption. Roads are poorly maintained and rarely have bridges spanning over rivers, causing vehicles to drive across shallower parts, further polluting the water. During my sister, Heidi’s mission trip to Haiti, she vividly recalled 15+ Americans standing in the back of a pickup holding onto the sides as their driver drove them through the river and water rising halfway up the side of the vehicle. In addition to potable water, toilets, electricity and even local markets are limited. With a lack of electricity, most all daily activities such as studying, if one is fortunate enough to go to school, stop when the sun sets. In many residences, extended family often lives together in tight quarters with men typically responsible for making money to support the family. The women can work outside the home, but are still responsible for the children and house. Both genders contribute to tending and harvesting the crops.

Major barriers families face are the lack of modern farming methods, poor soil quality, runoff issues, manual harvesting and a lack of safe storage for their production. In an attempt to survive, Haitian farmers have over-cultivated the mountainsides as well. This has further led to increased effects of erosion and pollution. Finances are not available to invest in better seed or equipment. Poor infrastructure and sanitation systems, a lack of education and economic problems as a result of natural disasters remain issues to this day.

Conditions are slowly improving, indicative by the subtle changes in disease prevalence. From 2010 to 2014, the amount of cholera outbreaks decreased by 675,250 reported cases and resulted in 8,204 fewer deaths (Knox, 2012). Diarrheal diseases are ongoing issues. Overall average life span is low, with average age for males being 61.5 years and 65.5 years for female (Life Expectancy in Haiti, 2015). Many

governments established WASH (water, sanitation and hygiene) to address major shortfalls in the Haiti infrastructure. Since 1900 Haiti has been fighting poverty, poor water quality and diseases brought out by the unclean water. A government department was established (Service National d'Eau Potable) to provide access to clean water. About 69% of the total population has access to improved water sources and only 17% to sanitary facilities. In rural areas, about 80% lack potable water and sanitary infrastructure. Contamination of water sources has been a major contributor of the outbreak which spreads through drinking water that has been contaminated with human feces and waste (Beard, 2014). Even the improved infrastructure does not ensure the drinking water is free of contamination. Laundry continues to be done at the local stream; washing in the water and drying on the exposed rocks. Upstream, raw sewage is likely being dumped into the rivers and affecting the aquatic life and environment, as well as the overall water quality. Since 2000, the percentage of rural residents with access to improved water has only increased by one point.

Political transition to a democracy from 1986 through the 2000's made sustained progress on water supply and sanitation improvements a challenge as there was difficulty retaining professional staff, significant donors and lending agencies. The political problems within the Haitian government led to major periods during which donor activities virtually ceased and World Bank lending ceased altogether. One organization, Living Water International, continues to commit financially in their efforts to repair earthquake damaged wells. The repair of these wells continues to provide thousands of people access to clean water.

As the poorest nation in the Western Hemisphere, Haiti has to deal with issues of poverty and water scarcity on a daily basis. Haiti also has a higher infant mortality rate than any other country (Sentlinger). In the months after the massive 7.0 earthquake in early 2010, the problems of water scarcity increased greatly. Earthquakes often cause damage to wells and water systems, which are a major source of freshwater for the people of Haiti. Roughly three-fourths of Haitian households lack running water (5 Things You Need to Know About Water in Haiti). Lack of safe water along with inadequate housing and unsanitary living conditions contributes to the high incidence of infectious diseases. These diseases are spread through contaminated water (Beard, 2014). Access to clean, fresh water is a main concern in Haiti, where waterborne illnesses, such as typhoid, cholera, and chronic diarrhea, are the cause of more than half of all deaths. People are so desperate for clean water that street vendors sell water in plastic baggies for a few pennies. Protecting the health of the Haitian population through access to safe drinking water and sanitation is a long-standing challenge to be overcome.

Several initiatives have already been started to address this issue. The World Bank partnered with the State and Peace-Building Fund and the Haitian National Water and Sanitation Directorate (DINEPA) to address the challenges of increasing access to water supply and sanitation services in rural communities of the South and Nippes of Haiti. The Rural Water Supply and Sanitation Project introduced a professional management model involving local, professional water operators, which were selected and contracted by the community to operate, maintain and manage the water supply systems. It also promoted cost recovery, metering, and the use of water kiosks, as well as gravity-fed piped systems to minimize potential technical issues. Where plumbing was necessary and cost-effective, the project preferred renewable energy, such as solar. The communities were selected by evaluating their willingness to pay for water services. Mercy Corps has been able to provide water and sanitation services to make a difference. They hired earthquake survivors and trained them how to implement water and sanitation solutions. The Haitian government's water and sanitation agency, DINEPA, created a new policy for waste disposal for the first time in history and they have been working with non-governmental organizations like Mercy Corps to distribute water purification tablets and improve water quality in towns all over Haiti. This has resulted in a very positive change within Haitian society (Morrow, 2011).

There was a plan launched by the Ministère de la Santé Publique et de la Population or MSPP and DINEPA with input from various partners, including activities in four major areas aimed at eliminating endemic cholera in Haiti within 10 years. To complete this goal, it will take investments in WASH programs such as water and sanitation infrastructure and hygiene education, with a special emphasis on sanitation (Morrow, 2011). The Bank contributed to DINEPA's Rural Water and Sanitation Program with a \$5 million grant. The State and Peace-Building Fund contributed an additional \$5 million. The Water Project puts effort toward repairing damaged wells in Haiti. Through repairing of these wells, The Water Project and Living Water International have provided thousands of people access to reliable, clean water (Sentlinger). One of the major issues facing Haitian residents that have received foreign or domestic aid to construct elaborate water purification systems is the lack of knowledge and support to manage and repair the systems. There are examples across the country of defunct purification systems due to these reasons. This will be a major developmental issue to overcome in the future.

Currently, Haiti has built safe drinking water systems serving more than 50,000 people and school latrines for more than 5,000 students and teachers in rural Haiti (Gelting, 2013). The government also helped to establish professional operators and water and sanitation committees in nine communes and provided hands-on training to the operators and committees in community mobilization, conflict resolution, billing and accounting, meter reading and repairing, chlorination, as well as plumbing. These few systems have undoubtedly enhanced the quality of life of thousands of Haitians, but there are still thousands of others who do not have access to treated water. When you ask a Haitian who is not on running water, the question of "Is it (running water) safe?" Haitians replied that they are simply not used to it. They say they are worried about cholera but they have no other choice than to drink that water. Haiti has never had the kind of water systems that developed nations take for granted.

The main results of water supply interventions include construction or rehabilitation of 15 drinking water systems to serve 59,367 people (Improving Access to Water and Sanitation in Rural Haiti, 2014). Systems were equipped with a chlorinator and each operator has a test kit to measure water quality. There was also establishment of a new management model in nine communities serving 49,712 people. The water and sanitation committees (CAEPAs) and OPs were trained in community mobilization, conflict resolution, billing and accounting, meter reading and repairing, chlorination as well as plumbing. In addition, following the cholera epidemic, members of CAEPAs, OPs and plumbers were trained in the basic response to cholera and other waterborne diseases. The installation of eight boreholes with hand pumps have served more than 4,000 people (Morrow, 2011). Results of sanitation interventions are 14 public schools and one health care center reaching 5,547 students and teachers. These include the construction or rehabilitation of 25 sets of latrines, 25 urinals, and 28 hand washing stations and training for 14 masons from seven communities and one Rural Development Units (URD) technician to build latrines in the participating communities (Morrow, 2011).

Development of 28 trainers and 28 community workers in the Participatory Hygiene and Sanitation Transformation (PHAST) launched promotion campaigns on two regional radio stations. Resulting training, hygiene promotion and sanitation in schools and health centers increased the proportion of households that own and use a latrine. Participating rural communities have also successfully increased access to water services. The water systems constructed or rehabilitated have benefited 59,367 people in 15 communities (Brown, 2012). The project has also contributed to increased access to and use of sanitation to 4,964 households in the seven communities targeted for this intervention. Finally, 27.5% of households surveyed in beneficiary communities reported having built a latrine with their own resources in the last five years.

Even though Haiti has made lots of progress, there is still a long path ahead to provide everybody with safe and sustainable resources. The key to ongoing progress is political stability and an emphasis on expanding state sponsored projects. The people of Haiti cannot afford to fund these projects themselves.

Their income and educational level is too low. A stable government focused on improving the infrastructure across the whole country will have World Bank loans, partnerships with humanitarian outreach groups and community participation to leverage progress. Could they use systems similar to the Rural Water Districts in the United States as an example? This system provides water throughout rural areas through use of wells and mainline water delivery to homes, cities and even farms. To finance, the government would have to back bonds and work with outside investment and World Bank financing. Sanitation is another priority, but to move forward, Haiti needs to dedicate resources to clean water. After this has been accomplished, the infrastructure is ready for developing sanitation districts. Haiti needs to move away from relying mainly on the generosity of humanitarian groups and providing solutions to only populated areas. Focusing on rural development will strengthen the backbone of the economy, from which Haiti can further build upon.

The United States government needs to focus on setting up sanitation and water treatment systems throughout the country of Haiti. The Medical Corps, World Health Organization (WHO), and the United Nations International Children's Emergency Fund (UNICEF), as well as other organizations have begun to initiate the construction of treatment facilities.

Many government agencies and organizations have set up agencies that work for the well-being of the people, and attempt gradual improvement. Although these groups do their best and work hard to help others, they cannot do it without monetary support. Many of the attempts discussed were only partial solutions in an effort to restore safe water and sanitation to the more urban areas. If something broke, they did not have funds or expertise for repairs. As with anything, it takes money, of which Haiti's people have so little.

In order to effectively address the water and sanitation issues in Haiti, countries will have to take an interest in developing a sanitation system and clean water. Nothing is impossible but it all costs money. After the earthquake, many countries went to the rescue, trying to help in any way possible. By introducing alternative methods of sanitation, the number of water borne illnesses will greatly reduce. As discussed, many organizations and individual people are believers in service to others. The typical family in the United States can become involved by making contact with a local charity such as the Orphan Grain Train. Helping others is not out of our reach, no matter what age we are. There is help needed everywhere if we only have the initiative and compassion to reach out and lend a helping hand. Money, improved resources and expanding public systems and funding mechanisms are all a piece of the puzzle that is involved with rebuilding this country.

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