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Common Materials for an Uncommon Result: Water for the People of Haiti

It's a hot summer day and you're thirsty. You want a cool, refreshing, clean glass of water. So, what do you do? You walk to your kitchen and go to the sink. You turn the cold water knob, and what comes out? Cool, clean water. You fill your glass and drink away. Are you thinking about what you're doing? Or what a privilege it is for you to have clean water to drink, wash dishes and clothes, and bathe? Are you thinking about how much some people would give up to have clean water to drink? There are many people that share our planet that do not have the luxury of walking to their own kitchen and getting a glass of clean water. The people of Haiti, a small Caribbean island country, would give almost anything to have the privileges that we, as Americans, take advantage of everyday. Everyone needs water; good, clean water to use every day. The Haitians, especially, understand this concept.

Haiti, a small Caribbean country on an island shared with the Dominican Republic, covers 10,714 square miles and is one of the most densely populated countries in the world (International Action-Haiti). The country's capital, Port-au-Prince, is home to 2.5 million people (International Action-Haiti). Haiti is the poorest country in the western hemisphere, with a staggering unemployment rate well above seventy percent and approximately seventy-five percent of Haitians live in poverty (Countries & Their Cultures-Haiti). In the 1970s, over eighty percent of the population resided in rural areas, but today, over sixty percent continue to live in provincial villages, hamlets, and homesteads scattered across the rural landscape, with the remaining forty percent living in Port-au-Prince and other large cities (Countries & Their Cultures-Haiti).

With Haiti being the poorest country in the western hemisphere and one of the poorest in the world, it is a nation home to many small farming families, but with many more families living in poor urban areas. The typical Haitian farming family, commonly referred to as peasants, work on small private farms and landholdings and depend a lot on their own work and labor along with that of their family (Countries & Their Cultures-Haiti). Although there is only about thirty percent of the land in Haiti suitable for agriculture, more than forty percent of land is worked up for farming and agricultural practices (Countries & Their Cultures-Haiti). This is not saying that the forty percent of the used farming land is "good" land to be used, but they do with what they have.

The average family in Haiti is made up of central family members: the mother, father, and children; some of the more fortunate families in Haiti even adopt children or young relatives to try to give them a better life. Elderly family members, widows, and widowers may also live with their children and their families. In the average household, the father is considered the owner of the house and responsible for tending to the family garden and farm. The mother's responsibilities revolve around caring for the family and the household. The mother in the

household is also thought of as the manager of the property and the decision maker regarding all funds, including garden produce and household animals. Haitians living in rural areas are not considered to be subsistence farmers. Peasants sell their farm produce and animals to help bring in income and maintain a somewhat successful economy. (Countries & Their Cultures-Haiti)

Today, many families that live in rural areas have homes in various styles. Most are single-story, two-room shacks; most with a front porch. In the dry, treeless areas of the country, houses are most commonly made of rock with lime or mud exteriors. In other areas, walls are made from hewn native palm, but in the south, homes are constructed of local hardwoods. The “more fortunate” families can afford to paint their houses in an array of colors, symbols, awnings, and trimmings. Urban families, living in Port-au-Prince and other cities, often live in single-story, one- or two- room houses made of block and cement with window bars on the windows.

The people of Haiti are not under-educated about nutritional deficits and the effects of unhealthy water. Nutritional deficits are not necessarily caused by insufficient knowledge, but they are mainly caused by poverty and lack of resources (Countries & Their Cultures-Haiti). Most Haitians do have an understanding of what they need to maintain a healthy lifestyle; they just do not have the resources needed to maintain that lifestyle. Rice and beans, considered to be the national dish of Haiti, is the most commonly eaten meal of urban poor families (Countries & Their Cultures-Haiti). Sweet potatoes, manioc, corn, rice, pigeon peas, cowpeas, bread, and coffee are all rural community staple crops. Recently, a wheat-soy blend, imported from the United States, has become part of their diet. (Countries & Their Cultures-Haiti) Haitians usually eat two meals a day, if their income allows (Countries & Their Cultures-Haiti). Some families eat together and others, as individuals, eat wherever they can. Haitians living in slums and other poor areas of the country do not always have the opportunity or money to eat two meals of the same scale as a farming family that was able to sell their products to make an income.

Because Port-au-Prince is home to 2.5 million Haitians and there is no central water treatment system, contaminated water is a huge problem for the island country (Water For People--About Us). Contaminated water is the leading cause of infant mortality and illnesses in children, as well as adults. Germs causing hepatitis, cholera, and chronic diarrhea are carried in water used for cooking and drinking (International Action-Haiti). Practically every water source in Haiti has become contaminated with human waste because of the nonexistence of sewage sanitation or central water treatment systems on the island (International Action-Haiti). Because contaminated water leads to so many infant mortalities every year, Haiti has the highest infant mortality rate in the western hemisphere. The PAHO, Pan-American Health Organization, has recently reported that more than half of all deaths, adult and infant, in Haiti were due to water-borne gastrointestinal diseases last year. (International Action-Haiti) By bringing clean water to the country and educating the people, diseases like typhoid, cholera, and chronic diarrhea can be stopped. (International Action-Haiti)

Less than half the people living in Haiti have access to clean water and only one in every five people have access to a sanitary toilet (Haiti). Due to Haiti being located on top of a tectonic fault line, they encounter many earthquakes that cause much devastation, such as the one that happened last year. Haiti is also located in the Caribbean hurricane belt that causes them to be caught up in several hurricanes throughout the year. (Countries & Their Cultures-Haiti) Because of the many natural disasters that Haitians encounter every year, their clean water supply continues to deplete and become much more unsanitary with every disaster.

With Haiti's population increasing, water sanitation becomes a bigger issue. The cities, especially Port-au-Prince, are affected the most because the more people that move into the city, the less room there is, and also more people means more water becoming polluted with waste and less clean water to use and drink. Haiti is considered to be an extremely water-stressed country (Haiti). The availability of clean drinking water per capita is about 1,660 cubic meters. There are virtually no water treatment facilities functioning properly for general use by the public in Haiti. (Haiti) With this being said, personal water purification and more education should be practice implied to better the lives of not only urban poor Haitians, but also to those Haitians living in rural communities.

Educating the people of Haiti is where clean water sanitation and purification has to start. Starting with children of a young age and mothers who care for families should be the main goal. If you educate a child at a young age, they are more apt to listen, learn, and retain the information longer. This is the hope behind schools teaching personal, or family-based, water purification for the purposes of drinking and using in the home. Personal, or family-based, water purification can start at school then be taken into the home. A sand and rock filtration contraption traps solid impurities that are too large to fit between sand grains and rocks. This filtration system is relatively cheap, and if used in a proper manner, can work efficiently and last for a longer period. This filtration system should be followed by boiling or heating the water to kill all bacteria left in the water. After both steps have been completed, the family can have safe water to drink and use.

The sand and rock filtration system can be set up using a paper or plastic cup, gravel (rock) and sand. The first step to this system can be done by taking the paper or plastic cup and poking small holes in the bottom of it. The next step in the process is to add about one centimeter of pre-moistened gravel, two centimeters of sand, and topping that off by one centimeter of gravel. The bottom gravel layer prevents the sand from washing through the holes. The top gravel layer keeps the sand from churning up when the sample is poured in. After preparing the system, the next step is to make sure there is a clean container under the cup with holes. Once everything is ready, gently pour the sample to be filtered into the cup. Filter the sample multiple, around three, times to be sure that harmful particles have been filtered out of the water. After filtering, dispose of the sand and gravel in a safely manner. Once the water has been filtered, the next step to the process is boiling. The water must be heated or boiled for a period of about ten minutes to kill

any bacteria left after the filtering process. After boiling, the water can be used for drinking and other purposes.

This filtration and sanitation system is not a particularly expensive system and can be done on a large scale, such as by a business, or on a smaller scale, like being used for individual families or villages. This system would work for both rural and urban areas. With financial and labor aid from various organizations, this system could flourish and continue to grow to a larger scale and better, more efficient ways of filtering and sanitizing.

After a short amount of time and education, the simple and inexpensive water filtration and sanitation system can prove to be extremely beneficial to the people of Haiti. Implementing a water filtration and sanitation system into one community or one family household would serve a great purpose, almost like an oasis for the rest of the community. Using simple and cost efficient resources can lead to clean water for various uses for many families. The water filtration and sanitation system that has been proposed can increase family income, which in turn would increase the overall income of Haiti. Using common materials to purify water for one of the world's poorest and water-stressed countries can lead to an uncommon result...clean water for Haiti.

Works Cited

Camp, William G., Thomas B. Daughtery and Carla Kirts. Managing Our Natural Resources. Albany, NY: Delmar Publishers Inc., 1991.

Countries & Their Cultures-Haiti. 2011. August 2011 <<http://www.everyculture.com/Ge-It/Haiti.html>>.

"Haiti." 2011. Water.org. August 2011 <<http://water.org/projects/haiti-2/>>.

"Haiti One Year On: Water & Sanitation." 2011. British Red Cross. August 2011
<<http://blogs.redcross.org.uk/emergencies/2011/01/haiti-one-year-on-water-and-sanitation/>>.

International Action-Haiti. 2011. August 2011 <<http://www.haitiwater.org/>>.

Parker, Rick. Plant & Soil Science: Fundamentals & Applications. Clifton Park, NY: Delmar Cengage Learning, 2010.

Water For People--About Us. 2011. August 2011 <<http://www.waterforpeople.org/about/>>.

Wikipedia-Slow Sand Filtration. 2011. August 2011 <http://en.wikipedia.org/wiki/Slow_sand_filter>.