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## **Haiti: Water & Sanitation, Increasing Access to Safe, Potable Water Supplies**

Haiti, in the West Indies, is a developing country that occupies the western third of the island of Hispaniola, which it shares with the Dominican Republic. About the size of Maryland, Haiti is two-thirds mountainous, with the rest of the country marked by great valleys, extensive plateaus, and small plains. The geographical construction of Haitian land creates both agricultural and economical difficulties for the farmers living in Haiti. Deforestation, erosion, and overall neglect have led to over half of the original good cropland of Haiti being destroyed, and the farmers destroying the remainder at about five percent a year due to lack of agricultural knowledge. Experts estimate that somewhere between 95 and 97% of Haiti's once luscious land has been deforested, leaving the average amount of profitable soil to less than one acre per person (Haiti: Deforestation and Slavery).

In Haiti, there is a large emphasis placed on the idea of family. Considering the amount of child mortality rates, 51 deaths to every 100 births, (Central Intelligence Agency) families vary in size throughout the region. Within the family, men and women normally share household responsibilities. Women are usually responsible for tasks such as weeding, harvesting, and childcare while men do chores such as farming and gathering firewood. Children will work on their families' farm as early as age 5, with little to no hope of ever receiving a formal education. Unlike the family dynamic in America (nuclear families), Haitian families consist of every surviving member (extended family) and they all do what they can for the potential prosperity of their loved ones. Unfortunately common to the families of Haiti are the rituals of death. When a loved one dies, the body is to remain untouched until every available family member can be in attendance for the ceremony (Central Intelligence Agency), normally contributing to the already diseased living quarters of the household. The ceremony commences with gathering, prayer and a Christian/voodoo style burial.

Haiti, being a free market economy, has its advantages of low labor costs and access to tariff free exports from the United States. Unfortunately the advantages are vastly outnumbered by the vicious disadvantages of life in Haiti. Over two thirds of Haiti's population is without formal jobs, (Central Intelligence Agency) purely based on the dwindling number of literate citizens and poor access to education. Haiti's accessibility to even the most basic of education was becoming problematic for the country. The severity of the situation drastically increased following the complete destruction of over ten thousand schools, and all three major universities in Haiti's capital (Earthquake Summary). Thus most families in Haiti are small-scale subsistence farmers, and remain vulnerable to numerous natural disasters that affect the livelihoods of the citizens of Haiti. Haitian farms consist of subsistence farmers with lack of access to seeds, agricultural equipment, and the overall knowledge of agriculture and commerce. The combination of the deforested mountainous terrain and frequent hurricanes creates harsh agricultural problems like landslides that destroy crops and erode away topsoil. Because of this, farmers turn to agricultural chemicals such as DDT which increases environmental pollution and decreases water quality (Haiti Overview). Farms in Haiti normally produce crops such as corn, beans, yams, or rice which are all regular parts of a Haitian diet. Most farming families produce just enough goods to survive, and even still are somewhat malnourished ([www.farmhaiti.org](http://www.farmhaiti.org)).

Another issue that presents itself to both people living in Haiti and outsiders alike is the drastic increase in crime following the events of the capital crushing earthquake in January of 2010. Haiti's capital Port-au-Prince was struck by a devastating 7.0 magnitude earthquake that destroyed the city and most of its

surrounding areas. Already labeled at the poorest country in the Western Hemisphere, the earthquake lead Haiti to more than 80% of the population under the poverty line, and caused 7.8 billion dollars in damage(Haiti Overview). Since then, there have been 59 aftershocks from the initial quake. A number of these were nearly as devastating as the initial impact with some ranging from 4.2 to 5.9 magnitude in strength. The devastating shift in the Earth's tectonic plates caused the displacement of over 1.3 million Haitian citizens and reduced almost 100 thousand homes in Haiti's capital to nothing (Earthquake Summary). Many citizens became victims to the revolution of prisoners that escaped during the earthquake, and overran Port-au-Prince by the thousands. In the weeks that followed many displaced Haitians, now not being able to sustain life through farming, joined the uprising of crime. Neighboring countries describe Haiti's situation regarding crime and political violence as "critical" (Haiti Crime and Safety Report). In the later months of 2010 groups of refugee prisoners started to organize, and execute large scale criminal acts in the middle and upper class neighborhoods of Haiti. Less impoverished communities in Haiti experienced a saddening spike in the amount of kidnappings, burglary, carjackings, and armed robbery. Regulation of illegal firearms has remained an issue throughout the capital and surrounding areas (Haiti Crime and Safety Report). The neglect to regulate illegal firearms creates crime ridden land, where crimes, including home invasions resulting in kidnappings and burglary, go unpunished.

Global new blog correspondent Tyler Maltbie said that after the earthquake "More than 20 countries, scores of private companies, and numerous international humanitarian groups have pledged aid to the western hemisphere's poorest nation." The United Nations released \$10 million from its emergency fund for immediate aid to Haiti. Despite having no diplomatic ties with the Haitian government, China made significant efforts to help the earthquake victims in Haiti. An Air China plane landed in Port-au-Prince with a 10 ton care package filled with food, equipment, and medicine for the victims. Australia provided to the citizens of Haiti's capital with a 9.3 million dollar care package. The United States, Brazil, and Canada collectively supplied Haiti with 3.5 million in support and each set up large search and rescue teams fully equipped with debris moving equipment and sniffer dogs. Israel supplied 40 doctors and nurses to set up a field hospital that was able to serve 500 people a day. 30 Cuban doctors were also available. One million dollars in support came from India. Sweden provided Haiti with 850,000 dollars, tents, water purification equipment, medical aid, and a team to rebuild the U.N.'s demolished headquarters (Haiti Earthquake: The Nations That Are Stepping up to Help).

A majority of the health problems in Haiti are caused by lack of clean water and malnutrition. 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 the deaths in the country every year. Haiti had one of the highest infant mortality rates in the world with 53 out of every 1000 infants that die because of contaminated water supplies (Central Intelligence Agency). Contaminated water creates, not only an issue in the survival of humans, but also a problem with the well being of the livestock. Haiti, being a country with the economy based on farming and outside assistance, poses the necessity for a clean source of water for both plants and animals.

Haiti's problems with widespread poverty, lack of education, extensive deforestation, criminal revolutions, and earth shaking natural disasters, all contribute to unsuccessful agricultural productivity throughout Haiti. It is true that all of these issues need to be addressed and solved in a timely fashion, but the most important issue to clarify, for the entire future of Haiti, is their undeniable lack of safe, potable water.

Haiti is in the worst possible situation when it comes to the resource of water. The severity of the situation is arguably the worst in the world. Less than half of the population has access to potable water. An underlying issue to the lack of water, in Haiti, is the lack of food. Even if food wasn't scarce the parasites and pathogens in the contaminated water attack the digestive system and rob the body of necessary nutrients that develop the body. In fact, 80% of diseases that kill children are not caused because they lack food and medicine, but rather because they lack a source of safe drinking water (Central Intelligence Agency). If Haiti is to survive as a society, swift actions must be implemented for the treatment of polluted waters and actions must be made to insure the restoration and the protection of healthy water supplies.

If issues are to be fixed regarding Haiti's contaminated waters, then there needs to be plans implemented for the treatment of polluted water systems throughout the country. Most importantly, where good water distribution and treatment systems are already in place, continuous effort will be needed to maintain the healthy source. Other water treatment options can be taken into account, such as technological advances like the SlingShot™. An invention created by American inventor Dean Kamen (inventor of the Segway). The SlingShot is a mobile, light weight water purifier that takes the nastiest of water from puddles, rivers, wells, or even sewers. The device vaporizes the water and extracts the waste, while the vapor gets pressurized and transformed into pure drinking water (Dean Kamen; SlingShot). It is low cost and low energy, almost perfect for the circumstances in Haiti.

Along with technological advances, restorations and protection must be implemented for preservation of healthy ecosystems. Restoration of healthy ecosystems is a valuable source of pure water, and is less costly than engineering purifiers. (United Nations Global Compact)

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