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Homeschool

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Haiti, Water and Sanitation

### **Haiti: Sanitizing a Solution**

Haiti is a small country with a complicated history. Despite the country's tropical location on the Caribbean and 190 square kilometers of water within the country (United States), basic hygiene education, potable water and even toilets can be difficult to locate. The lack of these resources has contributed to mass epidemics of Cholera, Typhoid, Hepatitis A and E and cases of bacterial diarrhea (United States). It is clear that hygiene and sanitation practices contribute significantly to the safety and production of regular food sources. The security of Haiti's food supply, trade opportunities, and general well-being of the population is impacted by water sanitation. If we can find a solution to water sanitation issues, we can strengthen food security.

Haiti's climate is largely tropical. Out of the country's 27,750 square kilometers of land, 190 of those are made up of bodies of water (United States). Haiti's population is over 10,000,000 and over half of that population lives in an urbanized area (United States). The capitol, Port Au Prince, is one of the major cities. Other heavily populated areas include Carrefour, Petionville and Port-de-Paix (Butler). Over 60% of the land is agricultural, which includes arable land, permanent crops and permanent pasture (United States). Haiti's major crops include cocoa, coffee, corn, mangoes, sugarcane, rice and sorghum. However, a typical family's diet is slightly blander and heartier, including sweet potatoes, yams, corn, rice, beans, bread, pigeon peas and cow peas (Schwartz, Bosnia). Many rural residents raise one type of crop and then trade that crop within a marketplace, instead of subsistence farming. Trade is an important aspect of the Haitian life as the average family typically earn less than \$500.00 per year (Schwartz and Bosnia). The average property size is about 3 acres of land (Schwartz, Bosnia), and women typically have two children (United States). In general, women perform most of the trades and manage the household income (Schwartz, Bosnia). Children are generally responsible for retrieving water and helping their parents around the house and farm (Schawrtz, Bosnia). While there are many farmers who trade crops, there are some tradesman opportunities that include welding, carpentry and even coconut tree climbing (Schwartz, Bosnia). Education in Haiti is highly valued and considered of great importance, but many families cannot afford to send their children to school. Boys have a higher literacy rate than girls (United States) and that trend carries into adulthood. The government has only one university that very few attend- it is estimated that 85% of college students study abroad (Students). For the citizens who do not go on to receive a college education, opportunities can be few. Haiti is no stranger to crime, and the country lacks a well-established health care system (Schwartz, Bosnia). In fact, for every four-thousand people there is only one doctor. (Follo). Not only does Haiti lack medical professionals, but it also lacks basic hygiene education; 38% of the population practices open defecation (Chebaane, Maurissen). High unemployment rates, lack of education and water borne illnesses have made Haitian families prime targets in the poverty cycle. All of these factors come together to pose a threat to food security and the Haitian way of life.

The issue of water and sanitation is widespread, especially in rural sectors. With such a large percent of the population practicing open defecation, it is no surprise that mass epidemics of cholera have been a prevalent concern since 2010 (Chebaane, Maurissen). To complicate the problem even more, much of Haiti's infrastructure remains damaged from the 2010 earthquake, including water systems (Knox). Only 64.9% of urban citizens have improved drinking water sources, and only 19.2% of the rural communities have access to improved sources (United States). In the city, Haitians can purchase small bags of clean drinking water from merchants on the side of the road. (Knox) Unfortunately, these bags of water are generally imported (Knox) and do not support a sustainable solution to the issue. In rural Haiti, the issue has become a way of life. Typically, citizens (usually women and children) walk anywhere from 2 to 4 hours to a clean drinking water source, 5-gallon bucket in hand. Doing this twice a day (a trip there and back) can take up to 8 hours, all for 5 gallons of water to drink, cook and clean with. Simply speaking, one-third of a Haitian woman's and Haitian child's life will be spent carrying water (Webber).

It is clear to see how the issue of water sanitation effects food security. First, it effects trade and opportunity. Seeing that roughly one third of a Haitian woman's day could be spent carrying water, it is apparent that they are losing that much time that they could be investing in their crops or jobs. This effects food quantity and availability. Given an extra 6 to 8 hours in a day, there is a great opportunity for the people to travel further for better trade prices (Webber). At this point, they may be able to purchase more land and raise more food to trade, raising the quantity and quality of their food source. Secondly, it effects general well-being. To lack clean potable water is detrimental to the human body. Between dehydration and illness, it is difficult to expect citizens to contribute to their society and food situation in a positive manner. This also applies to the Haitians who live near water sources. When a lack of hygiene education leads to an epidemic such as Cholera, the food industry suffers as well. Workers are suddenly ill and the households have a much harder time providing food for their families. Water sanitation effects city inhabitants as well. Many of Haiti's cash crops, especially rice, corn, potatoes and beans (Schwartz, Bosnia), require water for adequate preparation. If we can fix the water crisis, we may be able to strengthen food security in Haiti.

The first step to helping solve the problem is to examine what is already being done. As bleak as the situation may seem, non-profits and other organizations are coming up with different solutions to fix the issues at hand. Complex solutions have been posed by the Haitian government, UNICEF and other WASH (water, sanitation and hygiene) sectors. Even some non-profits bring expensive systems into the country to help purify water (Knox). The government has even hired technicians to keep water purifiers running. This solution works well for urban citizens, about 60.9% of Haiti's population (United States), as the initiative tends to target schools. But for the remaining rural population the complex water systems work until they break for the first time and it likely will sit idle afterwards. The government's water improvement plan, DINEPA (Direction Nationale de l'Eau et de l' Assainissement), gives aid by installing regional water purification systems and has hired a number of technicians to keep up with water sanitation issues in 133 communities (Chebaane, Maurissen). For some rural communities, especially those that do not have schools, DINEPA's initiative is obsolete.

One interesting fact about the DINEPA initiative is that although it is government run, it funds approximately 1% to the cost of the initiative (Chebaane, Maurissen). The other 99% comes from private organizations and other countries. Japan and Canada have been identified as contributors (Chebaane, Maurissen). DINEPA trains water worker technicians to aid communities by maintaining water systems supplied by the government. Unfortunately, this system has its flaws. The complicated water reservoirs are broken easily and often end up as just empty water containers. Another system flaw is that it does little to empower the people of Haiti. While 266 technicians are trained and hired, this leaves a large gap for the citizens that have a difficult time finding job opportunities, which is approximately 40.6% of the population (United States). The DINEPA's solutions are beneficial in the face of an immediate disaster. What is lacking is a long-term vision to make systemic improvements.

DINEPA created an overly complicated plan that requires extensive attention and resources. Fortunately, the government isn't the only organization coming up with solutions to the water crisis. Non-profits are leading the way in creative and sustainable ideas to empower the Haitian people to solve this problem. One non-profit in particular, Rain Catchers, installs PVC pipe gutters to the sides of homes (Webber). The Rain Catcher organization goes to Haiti to install small filters that fit inside of the PVC pipes and catch any sediment that may get caught inside. The pipe runs along the roof top, and the spout hangs over a barrel. When it rains, the barrel catches the water. This solution has many benefits. For one, it is a relatively simple plan. It only costs \$240.00 to install a gutter for one house, and replacements can be made easily. Although water from a barrel is not ideal when dealing with a lack of hygiene education, it is a significant improvement from open water sources that are likely to carry transmittable diseases. Another benefit to the Rain Catchers model is that each time they go to Haiti to install gutters, they hire approximately 30-40 Haitians to assist (Webber). This way, not only are local citizens given an opportunity to earn money to support themselves, but they are also taught how the gutters are installed and maintained. This method can help employ the Haitians and consequently improve food availability, as they are taught a specific skill to help them earn money.

Rain Catchers presents a tangible way to solve a major issue. Unfortunately, as a small but growing non-profit organization, their reach is limited and many communities have yet to receive gutters. In addition, their solution is good for an immediate response, but over time, rain barrels may present the same sanitation issue that is present in bodies of water. Another non-profit, Oxfam America, may be able to pose a solution to that issue. Rain Catchers focuses mainly on the people that have to walk great distances in order to collect water. But what about those who live right by the water source? Cholera is an ever-growing concern, ever since the epidemic in October of 2010 where over 5,000 people died from the disease (International Aid). Cholera can be spread through bodies of water very quickly, especially in warmer temperatures (Medical Ecology). Obviously, this is a problem for people who rely on open bodies of water for a drinking source. Oxfam America has a solution. Near the bodies of water, this non-profit has been installing pumps that hold chlorine (Knox). Villagers gather water from a stream in five-gallon buckets. They can then take the bucket to the pump. One squirt of chlorine from the pump is enough to sanitize one bucket of water from impurities. This is a good solution, for two reasons. First, maintenance costs very little. One tub of chlorine will supply ninety villages six months, and only costs \$100.00 (Knox). Second, this method may help insure quality food sources. If the people are more aware of how to access clean water, they may be more conscious of practicing safe sanitation before handling and preparing food, as well. Using the chlorine cleansing method is inexpensive and helps to prevent future disease out-breaks. Even so, there remains a lack of education behind it. One aspect that may

improve this solution is hygiene education. If citizens practiced safer water and waste disposal methods, the natural water reservoirs may not be contaminated as heavily. This is where the DINEPA comes in.

Rain Catchers, Oxfam America and the DINEPA are just three examples of how water sanitation (and, consequently, food security) can be improved. Each solution has pros and cons. It is possible that a combination of the strengths of these organizations may produce a beneficial result. Rain Catchers has a very simple solution that frees up the time for citizens to improve trade with. Oxfam America addresses the issue of dirty insanitary water. DINEPA improves the water situation in urban areas. How can we combine all three qualities to improve the water situation and consequently food security? One key solution is to improve the lack of hygiene education. For example, if there were no open defecation, the streams and bodies of water would be much cleaner. What if the solutions focused on helping the Haitians solve this problem, not just bringing in more equipment to “tape up” the damage that already exists? Perhaps DINEPA could direct their budget less on machines that may break and more upon educational material to encourage healthy lifestyle choices. The most important aspect of a sustainable solution is that it empowers the people to take the solution and develop it further. Rain Catchers teaches the people how to construct simple filtration systems. Oxfam raises awareness that water from a stream isn’t necessarily clean. DINEPA could be a much more effective directorate if it was to shift focus towards empowering the people. The water crisis is a very complicated issue that cannot be solved by one sweeping effort, but rather by empowering the non-profits to empower the people.

For any organization, it is important that the group who are actually working with the people be vested in the cause. Water sanitation isn’t only a problem in Haiti- The Democratic Republic of Congo, Liberia and Sudan have been having the United Nations come and audit the sanitation projects going on in these regions (Gladstone). Surprisingly, the results from the audits have not been altogether positive. For example, reports have shown overflowing toilets and unsafe waste disposal where missions had been (Gladstone). In any case, it is important that any solution posed has the ability to be maintained and monitored not only by the mission but by the people.

Water sanitation and hygiene in Haiti has become a large concern and daily struggle for many Haitians. A concerning 38% of the population practices open defecation and in the rural areas only 49% of the population has access to improved water sources (Chebaane, Maurissen). Through the efforts of non-profit organizations, various solutions have been posed. From gutters to filters to chlorine, these ideas are the backbone of the solution to the water crisis. If these solutions can be recreated on an even further-reaching scale, the Haitian people can be empowered to spend less time worrying about where their next water source will come from and more time improving their trade, stock and crops. Through a combination of creative solutions posed by the government and non-profit organizations, the water crisis in Haiti can be reduced greatly and the food security system can be increased for the betterment of Haiti and its inhabitants for good.

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