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Kenya: Promoting Education on Sanitation and Prevention of Water Borne Diseases

Imagine walking three to four miles a day for a mere 50 pound jug of water which must provide for all of your family's needs. Now imagine this water you worked so hard to collect was full of pathogens that could make you sick. For the people living in rural Kenya this is not a hypothetical scenario; this is their everyday life. If any advances are to be made in improving water quality, education must be the primary focus but first we will more closely examine the problems Kenya is facing.

A typical Kenyan woman who's living in a rural area in Kenya will fill her days taking care of children, cooking, and tending to her family's garden. On top of that she will make three or more trips to a water source to collect jugs of water necessary for her family, animals, and their crops. The people living in Kenya settle for spending many hours each day collecting water that has a high possibility of making them sick. No one should have to work so laboriously to collect something that is so vital to everyday life.

In Kenya, just like in every other country on the planet, water is necessary for life. Unlike most of the other countries, Kenya suffers from extremely poor water sanitation. Those living in rural areas suffer the worst. There are few piping stations, and those that exist are in poor condition. The natural water resources are extremely spread out throughout the country. Kenyans living in rural areas, and basically in poverty, have water sources that are extremely polluted and dangerous. This leaves very little opportunity for Kenyans to gain access to sanitary drinking water.

The water in Kenya is scarce because of the droughts that frequent the area. Along with droughts, there are few natural resources of water in Kenya. This means that there's an unequal distribution of water sources and it leaves many rural villages with limited access to water. Even when there are sources of water near the villages they are many times highly polluted. This great lack of clean water sources is the main reason for the long trips that the Kenyans are forced to make.

Different substances such as untreated sewage, pesticides, and fertilizers can make their way into the water. Some of the main pathogens include Cholera and Parasitic worms. They have the effect of giving people diarrhea, dehydration, vomiting, and extreme weakness. The country's bankruptcy keeps the government from being able to create additional health clinics or provide any sort of modern healthcare. Without the proper resources to treat these diseases, the majority of the cases go untreated. This leads to many deaths. In fact, 1.5 million children die every year from these preventable diseases.

To fully understand the woman's role in the provision of water for their family, we must examine the Kenyan family structure. In the course of a day the man of the house will go out and graze the animals or tend to their fields which grow things such as corn, millet, or sweet potatoes. They are gone from the house for most of the day. This leaves the woman to basically maintain her household. Back at home the wife must care for the children and prepare the meals. For most of the women this is a full-time job. However, some of the women try to do small jobs on the side to create some sort of an income. They will sometimes go to the small markets in their area and sell some of the food they grow in their vegetable gardens. But, when there are droughts or food shortages the women often do not even grow enough to feed their families and as a result cannot sell any of the food for profit. Sometimes if the family becomes extremely low on money the man of the house will travel to a bigger city to find work with higher pay. If this happens the woman has to step up and do even more work. On top of cooking, taking care of the kids, and having a garden, they have to help graze the animals. This leaves little time to make the long journeys

necessary for water. When they are unable to get as much water as they need, their crops, animals, and families suffer the consequences.

Sometimes children will help their mother collect water. This makes it so that the women are able to make fewer trips and collect more water at one time. However, it does come with some negative consequences as a result. If these children are making these trips daily, they likely do not attend school because they do not have the time. This lack of education keeps children in poverty for the rest of their lives. Without the ability to get a higher paying job they fall victim to the same circumstances that their mother and father are currently experiencing. I spoke with a young lady named Ashley Quinlan. She has been to Kenya with the organization called Me to We and has seen the problems with water collection first-hand. She spoke to me about how there were some schools in the area that supplied each child who attended with a jug of water to bring home. This made it so that the children were able to attend school and still bring water home to their families. Unfortunately, some children aren't as lucky, and they are not given this as an option. They will instead have to skip schooling to make the trips for water with their mother or help around the home. In fact, according to The World Factbook (2012) it is reported that about 1.7 million children in Kenya do not attend school. This is an additional consequence of a lack of poor water resources.

In preparing for her journey to collect water a woman in Kenya will have to search for a jug or container in which to carry the water. Typically these will be containers that she finds around her home or in her surroundings. The containers could range from a homemade jug to a container that once contained gasoline or fertilizer. You can see that just finding a random container that has been lying around could create additional health concerns. If these containers once housed a harmful substance such as gasoline or fertilizer it would be very unsafe to keep water in, especially if it was not cleaned out. The Kenyans desperately need new ways to transport and store their water that aren't harmful to their health and well-being. The provision of sanitary containers is an issue that must be addressed if Kenyans are to be provided with clean water.

In order to solve their water problems, the people of Kenya need to be given education on how to purify their water and properly store it. Money and resources need to be made available to perform the water purification. Through research and communication with someone who may have a possible solution I have found what I believe to be effective solutions to the problem.

Education is one of the key issues that needs to be addressed. One way that I propose to help reduce, and ideally stop, the spread of water borne diseases is by teaching those living in rural Kenya how to clean accessible water sources. Being able to purify their water would make any water source acceptable for consumption. This would shorten water trips exponentially. By shortening water trips women are able to focus more on finding work that could create a source of income. Extra income for these families would make survival easier and allow children greater opportunity to pursue education.

Another key issue I feel that needs to be dealt with is how the people would then store their water after it has been cleaned and made safe to drink. Giving them a safe way to store their water would make it less likely that this newly purified water could then be contaminated again by an unsanitary jug. These new containers would make it so that Kenyans would be able to keep their purified water clean and even store larger amounts of water. Being able to store large amounts of water would make it so that they would need to make fewer trips to collect water. Getting the Kenyans access to new and clean containers is a necessity that needs to be addressed.

The government needs to take a more instrumental role in the water sanitation issues that are affecting Kenya. While researching what the government's role is currently in the matter, I found that the data collected assessed only the availability of water and the overall sanitation. However, the data did not actually state whether the water is safe to drink, if there is sufficient quantity, or if it is affordable. This

lack of clear information makes it difficult for the government or outsiders to get involved. If these matters are cleared up, the government will be able to make more of an active role in the issues surrounding water sanitation in Kenya.

An organization that I feel could help Kenyans to clean their water and provide them with the equipment to do so is the Pure Water for All Foundation. The founder, John Hays, is also the creator of an affordable chlorine generator (Khlor Gen 3000) that helps to make clean, drinkable water. A great feature is the filter's ability to kill Trihalomethanes. When I contacted John Hays and spoke with him about his filter he, told me about how this is one of the bacteria and viruses that are present in the water in Kenya. He also said that it is one of the hardest to kill, but his filtration system does just that. The chlorine generator can also provide enough water for 5,000 people each day. One filter can provide for a great amount of people which makes it a rather affordable investment that can be shared between multiple families. (Hayes, 2012)

Mr. Hays' foundation accepts donations from people and then they use the money to purchase the materials needed to make purifiers. All that it costs for the entire system, which can be shared among multiple families, is \$567. These purifiers are then donated to those who need them in countries with similar water sanitation issues. They have filters in over 37 countries, including Kenya. While their efforts are already in Kenya, they don't have very many units there. The government should look closely into this matter if they truly care about the health of the Kenyans. (Lifesaver Systems, 2012)

Another piece of equipment that I believe could make a big impact in purifying water in Kenya is the LIFESAVER bottle. It is a water bottle that removes microbiological water borne pathogens. You scoop up the water into the bottle, close it, and use the pump a couple of times. Then when you pop open the top, drinkable water spouts out. This is a very user-friendly water purifier. There are also LIFESAVER jerrycans available. The jerrycans are much larger and can produce up to 20,000 liters of clean water in their lifetime. Both of these options not only clean the water, but can store and transport it as well. This would help to solve the problems that can result when storing water in contaminated or unclean containers.

The LIFESAVER organization also accepts donations. The donations help to give people in need of clean water one of their filtration products. As of now they are helping people in Haiti and Pakistan. The organization mainly helps in the event of some sort of natural disaster. But I believe if the droughts that Kenya has experienced were brought to their attention and people fought for the country, the organization may be willing to help. Providing a container that purifies and stores water with ease would have a significant impact on the quality of life for the people of Kenya.

Another organization that I looked into was Me to We (2011). They are partnered with Free the Children. The organization is involved in many projects. They are stationed in different countries, Kenya included. In Kenya they have many educational opportunities for the people. The people of Me to We have community workshops on clean water and sanitation. These workshops help to show the people of Kenya how important clean water is for their health. The organization discuss things such as using the clean water to wash their hands before preparing food or boiling water to ensure it is completely sanitary. These are just a few of the ways that they teach people how to stop the spreading of food and water borne diseases. They also show the people different ways to clean their water. This is one of the ways that Me to We is different. They provide the people of Kenya with the education needed for the people to become knowledgeable and help themselves.

When looking into the eight Millennium Development Goals, I found that goals that applied to the problems with water sanitation. When improving the water sanitation in Kenya many of the goals could be reached. A few of the goals that stood out to me include: primary education; medical care for HIV/AIDS, malaria, and other diseases; and gender equality. It seems that if solutions to poor water

sanitation were found, Kenya would be that much closer to achieving the Millennium Development Goals.

In regard to the goal of primary education, poor water sanitation has made quite an impact. Children are missing school just to travel miles to find clean water. If the water was improved, the children wouldn't have to miss school just to collect water. This would cause the attendance rates to rise and hopefully enable more children to complete their schooling.

The poor water sanitation is also connected to gender equality. Women in Kenya spend most of their days travelling long distances to collect water. This means that they are not able to have their own jobs or create their own income. If access to clean, drinkable water was increased, the water trips would not overtake women's lives. They would experience the freedom to be self-supportive like the men instead of slaves to their journeys for water.

If water sanitation improved there would be less people getting parasitic worms. Parasitic worms cause people to be more prone to disease and make it harder for them to fight off diseases such as HIV and AIDS. With sanitary water Kenyans would be overall healthier. This would also make it so that people would be less susceptible to HIV and AIDS by the parasites.

The improvement of water sanitation would help Kenya to reach the Millennium Development Goals. It would improve gender equality by giving them the opportunity to make an income. Cleaner water would help with primary education by giving children more of an opportunity to attend school without worrying if there will be water to drink when they get home. Combating AIDS and HIV would become easier if water was cleaner and parasitic worms weren't infecting the population. They wouldn't be as weak and their bodies would be better equipped to fight HIV and AIDS. Overall better water sanitation would help the country to reach the MDGs and to improve Kenya.

As I have shown there are many different options when it comes to trying to make a difference in the water sanitation problems that Kenyans are presently facing. There are different pieces of equipment that can be provided to the people of Kenya. A few of the ones that I felt would be most effective include the LIFESAVER bottles/jerrycans and the Khlor Gen 3000 system. The line of LIFESAVER filters would be easy to use and easy to transport. The Khlor Gen 3000 system has the major upside of being able to filter a large amount of water, enough for multiple families. Both of these products are a part of separate organizations that are both doing their part to help create cleaner water throughout the world. If these organizations could be persuaded to broaden their efforts to include even more of Kenya, I believe it would help the country immensely. With regards to education, I feel that Me to We is doing an exceptional job. They are helping those living in Kenya help themselves. Me to We gives people the education to help their situation.

I believe that with proper equipment and education the poor water sanitation can be dealt with and ideally fixed in the coming years. If organizations such as Pure Water for All and the LIFESAVER organization are included, great amounts of water can be purified for the Kenyans to drink and use for cooking and their crops. Me to We is also a very good organization that I believe can help to educate an exponentially large group of people in Kenya. With education and equipment the Kenyans can overcome their poor water sanitation; all it's going to take is time, effort, and education.

Clean water- it seems so accessible and readily available in our everyday society. We simply turn on our faucet and it comes pouring out. This is simply unheard of in rural Kenya. They need the education and the tools, and in time they too can view clean water as something accessible and readily available. To some this might seem redundant. But, if by me saying that Kenyans need education and equipment to create better water sanitation is redundant, why hasn't the problem been solved? With the proper funding, organization backing, and hard work we can help Kenya to get pure water into every home. I will end

with something that John Hays told me that I find to be quite true: “along with good food goes perfect drinking water.” Those living in rural Kenya should be able to eat a good meal alongside a clean, drinkable glass of water.

Works Cited

- Hays, John. "Re: hello from club hOpe again!." Message to morganvervaecke@gmail.com. 29/Mar/2012. E-mail.
- "Kenya ." Central Intelligence Agency The World Factbook. N.p., n.d. Web. 1 Apr 2012. <<http://www.cia.gov/library/publications/the-world-factbook/geos/ke.html>>.
- "Kenya." Countries and their culture. Advameg, Inc., 2011. Web. 1 Apr 2012. <<http://www.everyculture.com/Ja-Ma/Kenya.html>>.
- Kenya: Natural resources and enviroment. N.p., n.d. Web. 1 Apr 2012. <<http://www.iss.co.za/AF/profiles/kenya/NatRes.html>>.
- "Kenya:Rural Communities on the margins." Free the Children. N.p., 2012. Web. 1 Apr 2012. <[http://assets.filemobile.com/15/country/resources/Kenya Country Profile.pdf](http://assets.filemobile.com/15/country/resources/Kenya%20Country%20Profile.pdf)>.
- Lifesaver working to end water poverty. Lifesaver Systems, 7, D. Web. 1 Apr 2012. <<http://www.lifesaversystems.com/>>.
- Me toWe, . "Me toWe." Me toWe. N.p., 2011. Web. 1 Apr 2012. <<http://www.metowe.com/>>.
- "Michael Pritchard's water filter turns filthy water drinkable." TED. N.p., 2009. Web. 1 Apr 2012. <http://www.ted.com/talks/lang/en/michael_pritchard_invents_a_water_filter.html>.
- "PureWater for all Foundation." PureWater for all Foundation. N.p., 2012. Web. 1 Apr 2012. <<http://www.purewaterhope.com/index.html>>.
- Quinlan, Ashley. Personal Interview. 28/Mar/2012.
- Snyder, S. S.. Water in crisis-spotlight on kenya. N.p., 2010. Web. 1 Apr 2012. <<http://thewaterproject.org/water-in-crisis-kenya.asp>>.
- "Water & Sanitation." Concern Worldwide. N.p., 2011. Web. 1 Apr 2012. <<http://www.concernusa.org/Public/Program.aspx?pid=123&gclid=CI6Uh4Txka8CFY0BQAodaSZF1Q>>
- "Water Supply and sanitation in Kenya. (2012, august 23). <http://en.wikipedia.org/wiki/Water_supply_and_sanitation_in_Kenya>