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Tanzania, Factor 2 & 10: Water Scarcity and Sanitation

Tanzania: Water Holds the Key to Progress

Bella Thorne, an actress, says, “My secret is one the world needs to know – nearly a billion people die a year from unsafe drinking water” (Thorne). This statement holds true for many countries around the world, but one where water related issues are prevalent is Tanzania. I visited Tanzania in June of 2015, for two weeks. After visiting tribal villages, schools, farms and Arusha, one of the largest cities, I saw firsthand the effects of unsafe drinking water. In Tanzania, fourteen million people currently are without access to clean drinking water. As a result, 7,000 children die of diarrhea every year because of the contaminated water (Betti). Unsafe water is not the only issue the people of Tanzania are dealing with; water scarcity is proving to be a problem in the field of agriculture. According to an article titled Climate & Agriculture on the website Our Africa, Tanzania is a dry and warm climate most of the year with a rainy season from mid-March to May. During that time, it rains every day, but with Tanzania’s warm climate, the water does not last very long; most of it is dried up by the end of June. Agriculture is greatly dependent on water. Most Tanzanian agriculturalists are subsistence farmers, meaning they grow crops mainly to support their families. Livestock is one of their major agricultural endeavors as well as a large part of their culture because of the purposes for which they use the animals. Many livestock owners live in drier areas and then they have to herd their animals to water. Farmers grow many of the same crops as we do in the United States, though one may notice that some of them look different. This is due to lack of water and effects of the climate on the crops. “Our Africa” says there are projects in efforts to find different seed varieties that can withstand droughts. Lack of water and sanitation do not impact only Tanzania but also the countries with whom they trade. Tanzania exports coffee, tobacco and cotton to various other countries. The island of Zanzibar, which is part of Tanzania, produces one-tenth of the world’s supply of cloves (“Climate...”). To solve the issue of water shortages and sanitation, many organizations have been formed and acts passed that have aided in the efforts. I saw firsthand the effects of those organizations to know that they have made merely a small dent in a massive problem.

A typical Tanzanian family might include a mother, father, multiple children and extended family. African families tend to have a large number of children for two reasons. First, there is not much education on birth control practices. Second, families need all their children to pitch in and contribute to the economic stability of the family. For example, the men, along with the younger boys, are the protectors of the family as well as the herdsman for the animals. Women do pretty much everything else including – childcare, building of homes, and farming. The family usually eats what they have harvested, along with their butchered livestock (Maka).

When I traveled to Tanzania, I was fortunate to be able to visit a school and see firsthand the education system. It is expensive to put a child through school in Tanzania, because not only do families have to pay for school tuition, they also have to pay for uniforms for their children. Students do not just automatically get to advance to the next grade. They have to take exams in order to advance to certain grade levels. All children can attend preschool and kindergarten, but they need to enroll before the age of 7. They all get to attend first through fourth grades. Their first exam is after fourth grade. They need to pass this exam in order to go to fifth grade; if they don’t pass, however, they have unlimited chances to keep testing in order to advance. Then they go to fifth through seventh grades. In seventh grade, they have to test again, but they only have one chance to pass this test. If they pass, they continue on to secondary school. Once in secondary school, they take more exams in order to continue on with their schooling. Children in Tanzania can attend college or university if they pass all of their exams (Maka). Students who further their education to their highest potential are most likely to be able to help out more with agricultural

issues further down the road. Roughly 90 percent of students get through primary school. One-fourth of those students actually make it through secondary school (“United...”).

Like education, health care is very expensive and not very accessible. The Tanzanian government is in control of the health care. The government is corrupt, which causes problems in the delivery of medical care. The ratio of doctors and/or medical centers to citizens is 1: 2000. Many of the doctors in Tanzania can be found in the larger cities, which may be miles away from the villages. For example, if one were to drink unsafe water and then develop an illness, it would be difficult to find a doctor. Many villages have elders that are versed in native medicine and remedies, but those remedies don’t always work, and further treatment may be necessary.

One illness that stems from lack of water sanitation is Malaria; it is a constant threat due to areas with standing water. Those standing pools create a breeding ground for the tsetse fly, which is the carrier of the disease. Malaria is the cause of many deaths in children. Our tour guide told us that one in seven deaths in children under five can be attributed to Malaria. Cholera, another disease, also may occur where there is poor water sanitation (Maka).

Tanzania is the largest country in Eastern Africa; it is home to 52 million people (Betti). With that being said, not all of the people live close to the lakes or streams in the country. Rather, many live in little villages in the middle of the country. These places do not have running water. The people collect all of their water from groundwater sources. The majority of the time, the water is stagnant and muddy, and one can tell by looking at it that it is not safe to drink. These people, though, have no other choice, so they collect as much as they can carry back to the village. This takes a lot of time.

Women, the usual collectors, spend at least two hours a day to gather water, but for those in remote areas, it can take even more time. Tanzanians use the water to drink, bathe, clean, and cook. They also herd their animals to the same water sources. Even in the more developed cities, clean water is an issue. While traveling, I was advised to avoid using the city’s water for anything. For a simple thing like brushing my teeth, it was suggested I use bottled water.

Since these little villages do not have running water, it is obvious they do not have plumbing, either. Not only are the groundwater sources contaminated with bacteria from the stagnant water, but a lot of times the water also is contaminated with fecal matter from humans and animals. This brings on many cases of disease. Water-borne illnesses represent a large percentage of the nation’s health concerns (Shore).

Water sanitation indirectly affects the education systems. Families have to pull their children out of school so that they can retrieve water. If the people cannot afford clean water or plumbing systems, how are they supposed to afford school? The high death rates from contaminated water also cause a loss of children from school. This poses another question: If there are not that many children in schools, how can they be educated to become leaders and help fix these problems by coming up with solutions?

Water scarcity also may affect the incidence of gender-based violence. The rate of sexually-based crime is increasing as children are pulled out of the safe environment of school to collect water. When young children are walking long distances from their homes to collect water, various other social issues may occur. For example, they may be vulnerable to rape and its related psychological issues, disease and sometimes death. AIDS is a growing social problem that also may result from rape (Shore). If families had ready access to clean water, everyone’s personal safety would be enhanced in terms of physical and mental health.

Tanzania suffers from not only unsanitary water but also a lack of water. This particular issue greatly affects agriculture. Agricultural products need water in order to thrive.

Most of Tanzania's farmers grow enough crops just for themselves and their families. The main crop they grow is maize, but many of them are starting to grow more drought-resistant crops, such as cassava and sweet potatoes. One of their staple crops is rice. Rice is grown in paddies, or water environments. If there is not enough water, the rice will not grow, and if the water is contaminated, the rice may be polluted ("Climate...").

Since most farmers are subsistence farmers, they do not make a very large annual income. Our guide, Ombeni Maka, said, the average Tanzanian family brings in roughly \$1,200 per year. This does not leave them much money to invest in technology or farming innovations (Maka).

When it comes to planting and harvest time, one notices the size of a family's operation. Most of them are small plots that are planted and harvested by hand. Driving down a Tanzanian highway, one observes that people there do not use implements such as tractors and combines. Most machinery is expensive, which results in smaller farms.

After harvest season and once the family has stocked up on all they will need, some may take leftovers to a local market, where they can sell it. There are markets every day in Tanzania, but they move around. Each day of the week has a specific location where people may shop or barter for their needs.

Livestock is another key component to Tanzanian agricultural success. Beef is the second largest agricultural product; No. 1 is bananas. As stated earlier, most livestock owners live in areas with limited access to water. This causes them to herd their animals to water, which may be miles away ("Climate...")

In the future, with the world's population projected to grow tremendously to 9 billion people by 2050, areas like Tanzania more than likely will suffer even more. Farmers are going to need to be able to feed more people with less land, and I don't think this is something Tanzania can accomplish right now. They have tried to do a lot of things to increase productivity, but they never really followed through, which decreases their productivity. It's as though they are taking two steps forward, to take three steps back.

The climate also proves to be a problem for farmers. The climate is so dry, and weather is killing off crops that are not drought-resistant. Tanzania is a large country with a lot of potential. There is a lot of farmable land there, but it is not being utilized to the best advantage.

If the government could implement some of the practices we use in the United States, I feel the country would be on a great path to improving its needs. One practice we use here in the United States is irrigation. Tanzania understands that this is an important issue, and they do practice irrigation but to a minimal extent. One percent of Tanzania is irrigated to its full potential. Irrigation is a critical component in the cultivation of crops. As the country gets rain for roughly only two months out of the year, one would think that this country would be practicing irrigation on a larger scale ("Irrigation").

When we visited a primary school in Tanzania, I was intrigued by their water collection systems. One school had a water "catchment" system. There were two 5,000-liter water tanks at the ends of two buildings. Tubing was connected from the roof to the opening of the tanks. During the rainy season, the runoff water from the roof would go into these tanks. This water was filtered; thus, it was clean and safe. While this is a great start to helping the effort, there were only two tanks. These two tanks had to supply water to 500 people. Approximately 30 teachers lived on site, and they used this water in their houses, too. The water supply was supposed to last all year, but it would run out by the end of August.

I would scale up this program. I wouldn't have these catchment tanks just at schools; I would try to put them in public places, as well as in designated areas throughout the country. These are expensive at about

\$1,000 per tank, but this cost would include shipping and site preparation. The only cost would be the startup cost. The rainwater is free, and the tanks will hold up for several years.

Funding for these could be made possible through grants from major international corporations that have an interest in Tanzania. Some types of companies could include agricultural equipment manufacturers, chemical companies, food manufacturing companies such as spices and coffee, as well as fishing and mining companies.

Major universities could send students and professors to work side-by-side with the Tanzanians, educating them about the importance of clean water practices.

Even ordinary citizens could play a role. I, myself, have set a goal to raise \$15,000 in my own community. This would provide Tanzania with 15 new catchment systems. I will do this by taking the story to local industries and businesses, churches and civic organizations and the community newspaper as well as other interested individuals. I have given a travelogue at our local theatre, telling of my experiences and the needs of the Tanzanian people.

I will partner with the Grand Circle Foundation to accomplish delivery of these catchment systems.

Not only will using the tanks help with the water shortage and sanitation, but it also will help improve the economy. Parents will not have to take their children out of school to fetch water, and they also may be better able to pay for their child's education.

Water catchment systems do not have to be used for only drinking water; they also could help with the irrigation part. Most of the time, farmers do not have any water to use for irrigation. If they could place multiple tanks near a group of farming operations, they could use the water from the tanks to irrigate their crops. If needed, they could even ration the water because some water is better than none.

I believe Tanzania could be a leader in agriculture in the future. I'm not saying that will be today or tomorrow, but I'm saying it is possible. If the people of Tanzania could practice better farming techniques and work on containing clean drinking water through catchment systems, then this country will have not only economic success but also agricultural success. By using the catchment systems to provide clean water, the country will not suffer as great a loss in population as it has previously. Practicing irrigation will help increase their crop yields and help the environment at the same time. The government could charge an affordable fee for the water in order to boost the economy. As long as it does not gouge consumers, then the government could make a decent profit off the water and that money could be used to help fund additional agricultural improvements. At the same time, having higher crop yields means more money for the economy as well. Having a surplus of crops benefits families by increasing the average income. Those people who take some of their products to the local markets will help the economy there, too. More crops allow for more trade, which stimulates the economy greatly. Farmers who can sustain themselves and their families will have a lesser chance of being a victim of poverty. If the country can help increase the percentage of children who advance through their schooling, this will help with future problem solving. Students who are more educated will be better able to help solve problems that may occur. Tanzania has a problem with seeing some of its actions through to fruition. Acts have been passed that eventually lose steam and then die off. That's not solving anything. None of the problems Tanzania is facing can be solved overnight, probably not even in the next five years. We, as global leaders in agriculture, can educate the people of Tanzania to the best of our ability. We can provide them with all the necessary tools they will need to succeed, but at the end of the day, it is up to them to implement those things and put them to use.

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