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Chad, Water Scarcity

Chad: A Country of Heat and Huts

The problems in my life don't compare to the problems of a person who lives in Chad. My problems consist of being hungry but not wanting to cook, so I order a pizza. When I'm full, I don't have enough room in my fridge for the pizza box. Other times, I am on my way to school and forget my shorts for gym class that day. It could even be my mom yelling at me because my room is so messy. I can hear her yelling "There is stuff everywhere!" These problems are what people call first world problems. My life is just a breeze compared to one's life in Chad. My struggles are to determine what college to attend, when in Chad the daily struggle is to live.

1. Background of Chad

Chad sits in the North Central Region of Africa. Most of the landlocked country is sitting in the extremely dry Sahara Desert. The largest warm-weather desert in the world that is still expanding due to devastating lack of rainfall and what is believed to be climate change. Chad sits between the Sahara desert and the Sahel. The Sahel is a transition zone between the Sahara Desert and the savannas of the south, which has few trees and receives very little rain. Most of the vegetation varies from the sands to the dense forest of the Congo.

Chad is a unitary state with a Presidential System. According to Douglas Henry Jones, "Chad has a long past of a ruling/corrupt government, the economy is at an all time low and is not in favor of the public's well being." The major crops consist of corn, rice, and sorghum while the country relies on cattle, cotton, and oil exports for most of the country's economy.

With a population of 14.9 million people and more that 87% below the poverty line, Chad depends by far on the rural economy and themselves as individuals according to The World Food Programme. Already with a jaw dropping 87 percentage below the poverty line, there are an estimated 55,000 refugees from the Central African Republic, 280,000 refugees from Sudan, and 170,000 displaced people which totals to an astonishing number of half a million people forced to move into Chad. This leads to many problems in the northern half of Chad, hunger, malnutrition, education, sanitation, but most importantly, water. Combining the massive percentage of people living below the poverty line, the growing number of refugees, and the ever growing Sahara, the need for clean water is at an all time high.

2. Family life

The responsibilities of the average family are typical for a family in a third world country. Most children don't receive education. The children spend their days working average household duties or playing with other children in the village. The young women are in charge of getting water from the local well or sometimes from the closest river. They typically walk four kilometers or roughly two and a half miles. They have nothing but a jug and their feet to get this water that isn't always the cleanest and can cause

illness. The men are working endless hours to provide food and very little money for the family. The average family earns $740 a year which is roughly two U.S. dollars a day. That is just enough for a loaf of bread or half of a pound of oranges. The cost of food combined with the distance to the local market forces many families to grow their own food. Many farmers produce corn, rice, and wheat for personal consumption. The average farm is two hectares which is almost five acres. That would be equivalent to farming three and a half football fields.

3. The need for water in Chad

“We have the desire to have someone come and help us construct rain barriers to retain the water from the rainy season for the entire year, and for the construction of a water tower in Guéréda.” The Tama Sultan explains the need of water towers in Guereda. Rain barriers would help the villagers in many ways, from not flooding the village to living a cleaner, healthier life. The water towers would also have an astonishing impact on people's lives. Villagers wouldn't have to walk as far to get their water and they would be sure their water is clean and safe to drink.

"The primary need that we have, it's the need for wells in the villages. Although we live along the Chari River, we find that the water we draw from the river makes us sick. Especially between the months of March and May, when the river dries up a bit, diarrhea spreads in the region, and causes many deaths. Water is essential to life, but if the water source is polluted, this puts our entire population in danger, especially the children." Gaourang Alifa Kassalou explains the need for wells in villages because the river is unsanitary to drink water from. Another comment was made by the Sultan Moussa Ibedou about the importance of wells being put into villages. “There remains some specific needs that we wish to convey to you on behalf of our people, especially those who live far away from the larger towns. As we see it, the greatest need we have is the lack of wells in the villages. Water is essential to life, but in several Dar Dadjo villages, our people have to walk 4 km to arrive at a source of drinking water.” Four kilometers is roughly 2.5 miles. Some people have to walk around five miles everyday just to get water for their family.

4. Solutions: Smart Crops

Farmers produce major crops like corn, rice, and wheat but in regions with high temperatures, poor soil fertility, and unpredictable droughts, farmers should move toward climate smart crops. Climate smart crops are crops that adjust well to the climate they are in, such as foxtail or finger millet. Mani Vetriventhan, a senior scientist with a PhD in plant breeding and genetics wrote about scientists in China testing on cereal grains. These tests were to identify drought tolerance in the cereal grain crops. The scientists put many cereal grains through levels of drought stress and graded them a one to five scale. One meaning the most drought tolerant, and five being the least drought tolerant. Both foxtail millet and finger millet received a one rating which means they are the most drought tolerant. Farmers need to feed people while saving money, they should learn practices in favor of millet. A non profit organization called Ashoka Innovators for the Public, would manage this project by educating the farmers about these climate smart crops. Farmers will see the importance of this due to previous years hardships and drought conditions previously faced.

5. Solutions: Rainwater Harvesting

Another solution would be rainwater harvesting. “Rainwater harvesting is the collecting of run-off from a structure, in order to store it for later.” (watercache.com). This can be done in many ways to benefit the villages that do receive rainfall in Chad. Rain harvesting can be as simple as rain running into a barrel or as complex as running water into huge cisterns that supply an entire household. Not only is rainwater harvesting being used in developing or third world countries, it is now being used in first world countries! Countries such as Germany, Australia, and even in America. Rainwater harvesting is becoming so popular because it is cheap, clean, and simple.

Rainwater harvesting is very important for the future of Chad. There are so many uses for rainwater harvesting, which include: domestic water use, irrigation systems/agriculture practices, and industrial purposes. Domestic use of water is everyday use such as drinking, bathing/showering, and water prepare food. Rainwater is clean and safe to drink. Not only does it eliminate risk of disease, it eliminates the four kilometer walk that every young woman has to take daily. This would help in the short-term until wells are implemented into effect. Rainwater harvesting would also help in the long-term because it would lower risks during the flood season. It would help decrease soil erosion and contamination of flood waters. Farmers living in the Tibesti Mountains would benefit from this by catching runoff and preventing soil erosion. This relates to irrigation. One way is by building irrigation systems and connecting the water received to the fields in order for the crops to reach their highest potential. Another way is to just watering the plants by hand. Using a small bucket or cup to disperse the water from plant to plant not only helps the plant get water but the handler is in control of how much water the plant is receiving. Lastly, rainwater harvesting could benefit the businesses. Whether it is the local market or manufacturers, rainwater harvesting could pay dividends to the business's success.

There are many different ways to harvest rainwater. The most common system is a rain barrel. Water goes from the roof, into a gutter, then into a barrel. This is the simplest type of rainwater harvesting. They are easy to implement and can be put anywhere without taking up much space, however the barrel can easily overflow. These rain harvesting systems are very simple and easy to make. They are quite affordable and versatile. This is very sustainable because flood season is very serious in the southern parts of Chad. By spreading the information and educating the people in Chad, they can start their own rain harvesting system quickly.

5. Conclusion

Educating the people of Chad about climate smart crops and rainwater harvesting will allow them more opportunities on how to thrive. A chinese proverb has said “Give a man a fish and he will eat for a day. Teach a man to fish and he will eat for the rest of his life”. This proverb relates to the people of Chad in everyday life. Whether you are the young daughter walking four kilometers to supply water for your family, the father who works in the fields everyday, or the mother who works for her family everyday, it is not about relying on aid from foreign countries, it is learning the practices to lower the percentage of poverty and growing the developing country of Chad.

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