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Ethiopia, Factor 2: Water Scarcity

Ethiopia: A Landlocked Nation

Think about your daily routine. It most likely involves bathing, eating, drinking, using the restroom, and washing your hands. All of these everyday activities require an abundant supply of clean, safe water. Not to mention the never ending list of industries, farms, and restaurants that requires sanitary water to operate. Fresh water is needed to practice proper hygiene as well as prepare food in a manner that prevents bacterial infections and diseases. Most importantly, however, a large supply of water is needed to maintain a large yield on all farms to support the growing population and prevent famine. It is difficult to fathom how we could ever possibly survive without our nation's vast availability to clean water. Water, something we take for granted in the United States for being easily accessible. But Ethiopia, a country located on the continent of Africa, must accomplish just that. The nation of Ethiopia is located in East Africa and has a total land area of approximately one million square kilometers with 36.3% of the land being used for agriculture. Ethiopia features a tropical monsoon climate with wide-topographic induced variation. Highland areas of the nation experience an average temperature of 64 to 73 degrees Fahrenheit (Our Africa). The nation is a high plateau with a central mountain range that is divided by the Great Rift Valley. Ethiopia has natural resources of gold, platinum, copper, potash, natural gas, and hydropower. This nation suffers from issues such as earthquakes, volcanic eruptions, soil erosion, and most importantly, water shortages. Ethiopia became completely landlocked when the entire coastline along the Red Sea was lost in 1993 due to the de jure independence of the country of Eritrea (CIA).

Ethiopia is the most populous landlocked nation with a population of approximately 99,465,819. Out of the entire population, about 85% are employed in the agricultural field (CIA). A typical family out of that 85% will most likely be small tenant farmers who raise crops of wheat and barley for domestic markets or grow coffee (Our Africa). Farmers must use sustainable land management practices because of the high level of soil erosion in the area. The majority of small tenant farmers have less than three acres of land to support their entire family with. Ethiopian families are usually large, with each couple having around seven children.

The family will survive off a diet of almost entirely home grown produce and livestock since lacking funds do not allow them to purchase market foods. Their diet is centered on the crop tef, which is used to make injera, a pancake style bread. Injera is used as a plate or ripped into chunks and used for dipping in stews. Ethiopians create their stews using beef, goat, lamb, fish, or hard boiled eggs. Individuals belonging to the Ethiopian Orthodox religion also create vegetarian stews made of beans, lentils, or chickpeas since they are required to abstain from eating meat on most days (Our Africa).

The children of the family will attend public school that is provided for free by the government. However, school supplies and uniforms are expensive which results in most children dropping out before the age of 12 (Our Africa). Public schools have oversized classes and are in poor conditions. Private schooling is available but is immensely expensive for most of the population of Ethiopia. In addition there are religious schools available to attend. Little to no options are present for secondary schooling. Therefore, most children leave school at an early age to look for work in an urban area or perform agricultural work at home.

With work in Ethiopia posing threats to human health, members of the family will certainly need some type of healthcare during their life due to the vast amount of infections and diseases typically contracted

in Ethiopia. AIDS and HIV are particularly common. Available water is not always sanitary; therefore diarrheal diseases and cholera are constant threats. Tuberculosis and malaria are also a threat to Ethiopian people. Healthcare is extremely limited in rural areas where over four-fifths of the population lives (Major Problems). Even in urbanized areas of Ethiopia, there is still an extensive shortage of doctors. Healthcare providers' main concerns are prevention techniques, testing for AIDS/HIV, and post-birth care. UNICEF estimates that 60 women die every day in Ethiopia from childbirth complications. With such difficulty in accessing health care, many Ethiopians are forced to turn to traditional at home methods of healing (Our Africa).

Large barriers prevent the nation of Ethiopia from moving forward in agricultural production. Ethiopia has excellent potential for successful farming but only about 20% of the farmable land is actually being cultivated. Also, only 4% of the land is irrigated (Rural Poverty Portal). Ethiopian farming depends on rain yet the nation has frequent droughts. Ethiopia runs on a low-input, low-output farming system which results in low yields. These barriers prevent the nation from living up to its farming potential.

Barriers limit employment and earning a living wage as well. The citizens of Ethiopia are highly unemployable. The literacy rate is approximately 49%, meaning that not even half of the population over the age of 15 is able to read and write (Rural Poverty Portal). This prevents individuals from having employment opportunities in urban area industries. Also, this does not allow Ethiopians to look for global opportunities outside of their country. Reading and writing are necessary skills for non-agricultural jobs and without increased education Ethiopians will be forced to remain in low income tenant farmer positions.

In addition, Ethiopians have trouble accessing food markets due to existing barriers. The people of Ethiopia simply cannot afford to purchase market products. About 40% of the population lives below the international poverty line and survives on less than a dollar each day (Major Problems). This high level of poverty is why most Ethiopians have to be self-sufficient and live off their own land. Ethiopians do however have one advantage. Most of the crops and livestock grown in the area, like chickpeas and goat, are nutrient rich so as long as there is enough food, the people will receive adequate nutrients.

Water scarcity greatly affects agricultural productivity, household income, food availability, and food quality. Since only 4% of the land in Ethiopia is irrigated, yields are extremely low which limits the amount of food available to the population. When fresh water is not available, Ethiopians must collect water from shallow, unprotected ponds which they share with animals. When water becomes scarce in Ethiopia, food is limited, disease picks up, and there is an overall negative effect on the nation.

The water scarcity in Ethiopia is a moderately severe issue. Droughts are extremely common and their agricultural system depends on rain water. No other farming techniques or methods exist at this time for when rainwater is not present. This creates a famine during times of drought. Often, the water that is present is polluted or is runoff which could cause land degradation or desertification. The water scarcity causes hunger and poverty which results in children being forced into child marriage, child labor, child trafficking, or child prostitution in order to equip funds or goods to survive (Major Problems). Furthermore, since the climate of Ethiopia continues to follow a pattern with frequent droughts, the trend for water scarcity will remain severe. Water scarcity is measured in the amount of famine, since droughts result in food shortage. This situation that Ethiopian families are in will remain the same unless action is taken.

If resolutions to this shortage of water were found, Ethiopia would be able to prosper. If more water was available then farmers could expand the amount of land that is cultivated which would result in higher yields. If a farmer then had surplus crops they could be sold to markets as cash crops and would give

families additional income that is very much needed. With families having spendable income, the economy would flourish. The people of Ethiopia would be able to purchase from markets which would in turn benefit the market owner who could then spend his elevated income at another business. Another benefit would be that children would be able to stay in school and be safe from the aforementioned child endangerments. An increase in water would also help the environment by allowing farmers to use safer farming techniques to prevent land degradation and decertification.

A solution to water scarcity will in addition improve the factors of water and sanitation, population growth, and human diseases. Increased water supply will give access to safe and portable water supplies, toilets, and proper sanitation and hygiene (Farming First). If Ethiopians had enough water they would not have to consume and use water from shallow and diseased ponds. These ponds contain bacteria from human and animal waste which causes diseases in Ethiopians once the water is consumed. The ponds also attract mosquitos, so women collecting water are at an increased risk for malaria. In very remote areas of Ethiopia, women have to walk an approximate six hours to collect water (Water Organization). This puts women at risk for infections as well as being harmed. It is not safe for women to travel alone for long distances. By having safe and clean water, the amount of infections and diseases contracted will lower which will increase the population.

Thankfully, there are several solutions that can be employed to reduce and/or eliminate the issue of water scarcity. Water is a precious resource in Ethiopia so it is important to use it efficiently and effectively. Ethiopia should adopt proven sustainable agricultural practices that will reduce the amount of water it takes to produce crops. The nation should also employ new and more technologically advanced seeds and irrigations techniques to increase the efficiency of water use. Increasing irrigation throughout Ethiopia will help immensely since the nation is landlocked and has difficult time reaching water. Also, retaining soil moisture and building up soil organic matter through techniques such as conservation tillage and nutrient management will help reduce the amount of water needed for farming. These techniques will also aid in preventing soil erosion which Ethiopia does suffer from (Farming First). The people of Ethiopia must acquire technology to map the weather in order to be prepared for upcoming droughts. Once they know a drought is coming they can plan to store water to use throughout that time. With the aim of accomplishing this, farmers will also need to use new water storage systems that keep the water safe and sanitary. Perhaps the most helpful solution of all would be to develop drought resistant crops.

However, the people of Ethiopia cannot accomplish all of this on their own. They will need an extensive amount of funding and knowledge to execute these solutions. For example, the Water Organization which was officially established in 2009 strives to deliver sanitation methods and fresh water to poverty stricken communities. The program is certified and reliable. It has investors as well as individual donations open to anyone willing to give (Water Organization). This program is local because the actual community chooses to conduct a well building or water credit program in their area. The community will contact a local partner of the Water Organization who then contacts the actual organization. The select community is in charge of choosing what their project will be, where it will be located, and how much it will cost. This program has shown to be exceptionally prosperous.

In Ethiopia the organization has dug new wells and established Water Credit. Water Credit allows the people of Ethiopia to take out loans to purchase water and toilets (Water Organization). The organization's most outstanding quality is the fact that they provide education along with actual access to clean water. The organization makes sure the entire community is knowledgeable on good hygiene practices and the importance of sanitation. Without the community being aware of good hygiene practices and safe sanitation, the health benefits of clean water are not sustainable. Even if the whole community is drinking clean water, water-related diseases will continue to be a threat if hygiene habits like hand

washing are not instilled. This program should have its funding elevated and be scaled up so it can continue to benefit the lives of Ethiopians.

Furthermore, communities and citizens themselves in Ethiopia can help each other by implementing water and sanitation education in all schools. The practice of water conservation should also be heavily applied until the nation reaches a comfortable level of water supply. The national government should make sure both of these practices are enforced and carried out effectively. Corporations and other organizations like the United Nations and World Bank should mainly focus on funding organizations like the Water Organization. With increased funding the Water Organization could spread its reach to potentially the entire nation of Ethiopia. Other non-governmental and civic organizations such as the Farming First Foundation could ultimately end the water scarcity issue in Ethiopia if they shared their knowledge of farming techniques and water management with the people of Ethiopia.

Water is a resource too often taken for granted. It is needed for bathing, cooking, farming, and drinking. But beyond that, a scarcity of water spirals out into additional consequences. The landlocked nation of Ethiopia demonstrates just that. With a limited amount of water the nation features poor agricultural productivity, a high amount of infectious diseases, and an immense amount of poverty. The scarce amount of water causes Ethiopian people to drop out of school early to work which results in low literacy rates across the country. Some families take desperate measures to acquire income by selling their children into child labor or child prostitution. Illness rates are high since hygiene is incredibly poor and drinking water is unsafe. The nation of Ethiopia is suffering due to their lack of access to water. But solutions to Ethiopia's major issues exist. The country must employ new sustainable agricultural practices in order to produce a greater yield with a low amount of water. In addition, creating more irrigation throughout the country will allow greater access. The people of Ethiopia must learn to plan for droughts and create sanitary storage options for water to survive droughts. The best option for Ethiopia would be to develop drought resistant crops. Ethiopia will need assistance from world organizations such as the Water Organization as well as for its own citizens to step up and take action. Even with an increased access to water, the people of Ethiopia need to be educated on how to properly use and store the water. These solutions will allow Ethiopia to increase education, decrease illness, and improve its state of poverty. With irrigation and education, Ethiopia can someday no longer be at a disadvantage due to its landlocked state.

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