

Maggie Riley
Ankeny Centennial High School
Ankeny, Iowa
Chad, Factor10

Chad: Increasing safe access to potable water supplies as well as education on proper sanitation/hygiene, and food preparation techniques to reduce the transmission of food and water-borne diseases.

Through history, Chad, with a population of over 10,758, 945 people, is one of the poorest countries in the world with over 80 percent living under the poverty line (Central Intelligence Agency). There are more than 120 different languages spoken, and many different ethnic groups that live in villages throughout Chad (Central Intelligence Agency). Thousands of refugees from Darfur are making their way into Chad as well, and by this, they are using the limited resources that Chad can only produce. There is a main lake known as Lake Chad which many rural villagers of Chad count on for potable water; however, the lake is 10 times the size it was and is continuing to shrink. In Chad, 80 percent of the people are rural agricultural workers who either farm cotton, peanuts, rice, etc, or herders who raise cattle, sheep, goats, and camels (Central Intelligence Agency). Climatic conditions are extreme, from drought to torrential rain and flooding in Chad. Through this, Chad experiences many different climate changes throughout its regions such as yearly precipitations staggering from 2 inches to 23.6 inches causing some farmers to flourish while others barely get by. With 210,000 people living with HIV or AID's, and many others living with a high risk of food and water-borne diseases such as bacterial and protozoa diarrhea, Hepatitis A, typhoid, and malnutrition (Central Intelligence Agency), Chad needs the education to sustain a healthier life style and the access to resources to accomplish this factor.

To begin, an average family size in rural Chad consist of eight to nine family members who live on an income as low as seven dollars a day where labor is the primary income-earning asset(IFAD). This results in a low income diet including foods such as maize, manioc, potatoes, rice, and some varieties of beans (Jon G. A bbink). Though families have access to these staple foods, more than 40 percent of people living in Chad do not have the ability to obtain sufficient quantities of food per day (IFAD). This concludes in a declining nutritional status, resulting in malnutrition across Chad. Malnutrition is a major food insecurity in Chad and due to this, 36 to 40.9 percent of children are suffering on a daily basis (Jon G. A bbink). In fact, malnutrition is the largest single contributor to disease (UN Standing Committee on Nutrition). Malnutrition causes children to have such as, reduced physical and mental development which can lead to mental retardation and severe brain damage (SCN's World Nutrition Situation 5th Report). Studies also show in the UN Standing Committee on Nutrition that under nutrition results in adults having lower incomes. With all these different variables, including climatic conditions shortening food production, malnutrition will continue to go up by as much as 20 percent (International Food Policy Research Institute). Though food is scarce, so is potable water, resulting in many water-borne diseases spreading throughout villages of Chad. It is a continual cycle that brings many disadvantages. World Food Programme helps fight these disadvantages by giving malnourished people the nutrients they need to live and through this they are saving lives. For families in Chad, they need to be able to have sufficient healthcare as well as a healthy environment for them to flourish and become a healthier country as a whole.

Furthermore, in order for Chad to have healthcare that would be evident in the lives of the citizens, the government needs to take a stronger role in their leadership rather than depending on France to get the job done. Chad receives most of their foreign aid from France, which supplies an average of 30 percent of their National Budget (Jon G. A bbink). Though Chad is a lacking country, it needs to be able to take more of an independent role to run a sufficient government, and can use aid when circumstances prove they need the help. Yes, Chad is in need of help, but they need to be able to fulfill their role as a government so there citizens are able to count on them to help them grow as a country. Government

without funds and social programs has forced citizens to rely on their own resources; however, some are assisted by foreign nongovernmental organizations, such as Doctors without Borders and various missionary organizations that travel to Chad (Jon G. A bink). The rural population of Chad is poorly organized, and isolated from social safety nets as well as poverty programs (IFAD). Increasingly, government policies and investments in poverty reduction tend to favor urban over rural areas which leads to much doubt in the rural population (IFAD). Those who are the poorest generally suffer the worst health, which leads to the rural population needing the most health benefits. Over time healthcare should improve in Chad, and on top of that, they need to improve their education on living healthier lifestyles.

In addition, Chad needs greater education on proper sanitation and hygiene. Health is a major risk factor in Chad because of where they live, the genetics of the families, the low income, and poor education (World Fact Book). These are all known as “Social Determinants of Health” (World Fact Book). Environmentally, many different outbreaks occur due to the weather changes across Chad. For instance, the disease Meningococcal, a bacterium that causes cerebrospinal meningitis, occurs during the dry season which last from, November through June (David Goldberg). In March of 2011, it was reported that 57 deaths occurred from this bacterium. On the other hand, during the rainy season, Cholera, an acute intestinal infection characterized by severe diarrhea and cramp, has caused many deaths and is still very evident today(David Goldberg). Both are obtained from contaminated drinking water as well as poor sanitation in rural villages across Chad. Another major epidemic across the country of Chad is African Trypanosomiasis, a sleeping sickness, which is usually found in rural areas. All of these diseases could be cured, but due to limited medical facilities (healthcare) as well as the unavailability of different medicines, people cannot be cured and suffer the consequences due to this.

Furthermore, there is only one doctor per 38,000 people in Chad where as in the United States there is one doctor per 1,000 people (Jon G. A bink). Due to these circumstances, there needs to be more organizations and programs that allow doctors to go to rural areas across Chad to teach better sanitation and hygiene, and also to perform medical tasks to help stop epidemics spread throughout the country. Doctors without Borders is a great program that helps provide assistance for those in need and is in more than 60 different countries including Chad. They help fight against epidemics as well as malnutrition and have saved countless lives due to their outstanding work. Medical care is a major disadvantage for Chad, so by creating more organizations like Doctors without Borders, many more lives could be saved creating a better future for the younger generations to come. There are many different agencies and colleges trying to promote this cause; however, there needs to be more programs promoting education on healthier life styles to create a healthier environment in Chad. These programs need to be able to travel from village to village and cover as much ground as possible so those in rural areas can learn how to stop the spread of diseases and be taught as much as possible. One out of every five children does not attend school in Chad, and due to this, they are not taught the necessities of living. Education in Chad does not have to consist of math courses and history, but rather health classes that teach better sanitation and hygiene. By having better education, living conditions could improve, and over time, the living rate will increase as well as the happiness in citizens across Chad. Along with this, Chad needs to have better access to potable water in rural villages.

In order for Chad to have potable water, the sanitation and water systems across the country need to improve. Sanitation is a system to improve and maintain a healthy lifestyle and environment and on top of that, it creates the education on better hygiene. This is one of Chad’s downfalls. Chad’s availability to water is a low percentage of 27 percent and even lower is the access to water which is 21 percent. This is four times lower than the United States access and availability to water. Mainly focusing on the rural population, there is only 4 percent of the population who have access to an improved sanitation facility, and 43 percent only have access to an improved water source(World Statistics). In comparison, the United States has 100 percent all the way across the board for water sanitation as well as access to safe water facilities (World Statistics). The major water source in Chad is Lake Chad with almost 11 million

people relying on the lake for their livelihood. It also helps to produce economical and social development opportunities. With Lake Chad's accelerated shrinkage from being sixth largest to one-tenth its size in the past years, it has caused many problems to unfold. First, due to Lake Chad shrinking, there is a dramatic decrease in freshwater available for potable water use. Agro-chemicals due to commercial cotton and rice production has polluted the remaining water causing low viability of biological resources to be able to regenerate rates of plant and animal life (FaoWater). This leads to the loss of biodiversity of plants and turning once an open water system into a marshy environment (FaoWater). The main tributaries in Lake Chad are the Logone-Chari River systems that provide 90 percent of the water being fed into the lake. Although these rivers provide a high percentage of water, water is diverted for irrigation causing a reduced flow into Lake Chad (Nation Master). The Bank, an organization aiming to help rural Chad seek water supply, has been working to increase water supply and sanitation financing throughout rural Chad (African Development Bank). This type of organization is what is needed to increase the likelihood that Chad, by 2015, will have access to clean water sources near rural villages. Even if Chad were water-abundant, they would still face the scarcity due to having heavy population pressure, and excessive pollution. However, on the other hand, Chad has an insufficient infrastructure that ultimately prevents people from accessing the water. This is a major malfunction across the world with Chad suffering the worst.

In addition, the transaction of food and waterborne diseases is a major threat to the rural population of Chad. Food and waterborne diseases are spread mainly by individuals drinking from wells or rivers with no protection against surface water contamination. Along with this, the absence of waste disposals increases the high incidence of waterborne diseases. Many researchers have declared that Chad is at a degree of high risk for food and waterborne diseases including bacterial and protozoan, diarrhea, Hepatitis A, and typhoid fever. These could easily be treated, but with the lack of education in Chad, the transmission of these diseases is continuous. Poor personal hygiene and dehydration are two of the main reasons why waterborne diseases are spread throughout. When rainy season is underway, outbreaks of Cholera around Chad emerge. During this past year, the outbreak has killed more than a hundred people and will continue to worsen as the rainy season continues (Winnie Mutch). Cholera can be contained by ingesting food or drinking water that is contaminated (Winnie Mutch). On the other hand, when dry season occurs, people turn to drinking surface water without any filtering because of having no access to running water, resulting in the ingestion of contaminated water. Food security is also affected by waterborne diseases in a roundabout way. With many people drinking the contaminated water, they are becoming ill and with much labor force needed, food production decreases (Central Intelligence Agency). This cycle will continue to worsen if techniques of stopping this epidemic do not happen in the villages soon.

Pursuing this further, there are many different techniques that can be taught to the rural areas of Chad on food preparation. With this said, sanitation is the main technique for food preparation that can help save lives in Chad. First, many rural villagers wash their fruits and vegetables in contaminated water. This will cause the spread of pathogens and ultimately harm many individuals. By washing the fruits and vegetables in running water, there will be a less of a chance of spreading diseases and will end up decreasing the amount of people being malnourished because they won't be suffering the consequences of becoming ill after eating something as harmless as a fruit. With this comes the idea that proper cooking of drinking water and food are very essential. Techniques for this include building runways for water to flow down after heavy rain falls and also cooking food on sanitized cooking spaces. By building runways for water, it can fertilizers from being present in the water due to not being run off from rivers, and can then be used for drinking water as long as it has not sat still for a considerable amount of time. Many rural areas in Chad do not have access to soap to clean off spaces for preparing food, but by using the runoff water, they will be able to use this to "clean" an open space so preparing food can be done safely. One main technique that may seem easy to many, but unfortunately not to others, is washing hands before preparing food and drinking water. In rural areas, hard labor in fields is common and with this comes the

fertilizers that are being touched by many of the workers. These fertilizers can then be spread onto the food they are preparing and can cause many illnesses as well. Promoting hygiene education can help these techniques come about, and this trend will then generally improve the living conditions of the villages. Along with that, organizations need to promote the cause by raising awareness around the world.

Furthermore, investments need to be made in order for Chad to be able to solve this situation by 2015. There are several different organizations out there that are helping to fight the scarcity of water in Chad as well as the medical issues taking place there. Doctors without Borders contribute much of their time and volunteer work to help Chadians, but more help is still needed. Another well known organization that could help Chad become a more developed country in the next few years is the Clinton Global Initiative. Its purpose is to create effective ideas with the resources countries have as well as minimize poverty. This institute has helped Chad in many ways, including ensuring thousands of patients to be able to have access to health services and creating opportunities for children to attend schooling. More organizations like this need to become present in the lives of citizens of Chad because they spark hope in the people and allow others a chance to give back and help developing countries.

In conclusion, by resolving and improving this factor, Chad will increase their access to potable water, have a better understanding of sanitation and hygiene, and will stop the transmitting of food and waterborne diseases. With the solutions expressed throughout this essay, it is evident that Chad can and will improve in the next few years with the help from others. Knowing that thirty-six to forty percent of the Children in Chad are suffering from malnutrition on a daily basis, there needs to be urgency within organizations and governmental funds to help improve Chad (Jon G. A bbink). With a population of over 10,758, 945 people, and over 80 percent living under the poverty line (Central Intelligence Agency), Chad is in danger of collapsing as a country. While looking at Chad as a whole, it is easy to overlook the rural villages. Those who live in rural villages are ignored by the government and tend to live more poverty stricken than those living in the urban environment in Chad. Along with that, the government of Chad in the next years coming will have to take more of a leadership role with improving the lives of the citizens. However, until the government of Chad gets back on their feet, the help of other countries such as France and the United States will have to take the leadership role and support Chad. "Witnessing the extreme poverty in remote parts of Africa can make you feel sad and powerless until you realize how little it takes to change these people's lives fundamentally in sustainable ways", was once stated by John Legend and holds true meaning to Chad. By helping Chad little by little, it will help them immensely and give the rural villagers the chance to live a more healthy sufficient life.

Works Cited

"Adaptive Water Management in the Lake Chad Basin." *FaoWater*. Ed. Edith Mahabir. Fao.org, 16 Aug. 2009. Web. 15 Aug. 2011.

"African Development Bank." *African Development Bank - Building Today, a Better Africa Tomorrow*. Ed. Rue Joseph Anoma., African Development Bank Group, 2011. Web. 14 July 2011.

"Chad - Infrastructure, Power, and Communications." *Encyclopedia of the Nations - Information about Countries of the World, United Nations, and World Leaders*. Advameg.inc, 2011. Web. 18 Aug. 2011.

"Chad." *Wikipedia, the Free Encyclopedia*. Wikimedia Foundation, Inc., June-July 2011. Web. 14 July 2011.

Goldberg, David. "MD Travel Health." *MD Travel Health*. MDtravelhealth, 2011. Web. 27 July 2011.

"Health Impacts of the Global Food Security Crisis." *WHO*. Ed. Margaret Chan. United Nations, 2011. Web. 20 July 2011.

IFAD. "Rural Poverty Portal." Rural Poverty Portal. IFAD, 2005-2009. Web. 14 July 2011.

Jon G. A. Bbink. "Culture of Chad - History, People, Clothing, Traditions, Women, Beliefs, Food, Family, Social." *Countries and Their Cultures*. Jon G. A Bbink, 2011. Web. 14 July 2011.

Kamara, A and H Sally, *Water Management Options for Food Security in South Africa: Scenarios, Simulations and Policy Implications*. Development Southern Africa, Vol.21, No.2 June, 2004.

United States. Central Intelligence Agency. Directorate of Intelligence. *The World Factbook*. Central Intelligence Agency, 20 July 2011. Web. 25 July 2011.

"World Statistics." *Nation Master*. Rapid Intelligence, 2003-2011. Web. 20 July 2011.

