

Nick Grandstaff
Emmetsburg High School
Emmetsburg, Iowa
Zimbabwe, Factor 2: Water Scarcity

Zimbabwe: Water is Scarce, but Potential is Overflowing

Zimbabwe, a landlocked country, as first was recorded, was populated by the Khoisan people, dating back to 200 B.C. (South African History Online). These first inhabitants controlled the territory for many years and their economy thrived on trade and agriculture. They used their primary resources of gold and agrarian-based products to help create strong trade networks throughout Africa. By the mid-nineteenth century, the descendants of the Nguni and Zulu tribes had established a powerful warrior kingdom in the territory that Zimbabwe now rests upon. The warriors were fierce, and at one point moved Portuguese forces off the Zimbabwe plateau by force of arms. For many centuries Zimbabwe remained in this state. In 1858 the king of Zimbabwe, King Mzilikazi, befriended European missionaries. As a result, British settlers came to the area, and the British South African Company was formed (Zimbabwe Embassy). The British settlers set up a fort in what is currently the capital, Harare, and began mining the land. Shortly after the occupation of Zimbabwe, the British changed Zimbabwe's name to Rhodesia. The Land Apportionment Act of 1930 allowed white colonists to take the native's land, often at gunpoint, without compensation for the land. At the beginning of this land grabbing, natives retaliated in a war called the "First Chimurenga War" of 1896-1897. Unfortunately, this attack was led by spirit mediums and failed miserably. The prisoners of war taken by the English were brutally tortured, as were civilians (Humanities 360). In the time following the war there was apartheid in Zimbabwe, and the white minority were hated by the indigenous population. Segregation followed, and blacks in Zimbabwe were excluded from many rights including: suffrage, ability to participate in government, proper schooling, and the ability to live in upscale neighborhoods with the whites. In 1970, the Second Chimurenga, or Liberation war, began. This was preceded by the Chinhoyi Battle in 1966. After fighting for nine years the Zimbabweans were able to gain their independence from the British on April 18, 1979. The first president of the newly formed country was Robert Mugabe (History Today). Shortly after gaining independence, many white farmers fled the country, in fear that the strong discrimination and hate they had shown towards the native Zimbabweans would come back and haunt them. In this time the white population in Zimbabwe dropped from 250,000 colonists to 100,000 (BBC World News). After gaining control, Mugabe went on to redistribute land to soldiers and his political allies by creating the Department of Rural Development. It is worth noting that the people Mugabe gave land to many of his friends whom had little knowledge of agrarian practices and the land they held was unproductive. As a result of the loss of ground efficiency, the country began in a downward spiral that continues today. When the white farmers left, they took with them not only their prejudices, but also their agricultural knowledge. Now Zimbabwe is behind. Not just in their agricultural practices, but also in their economy and government. Robert Mugabe remains in power after many rigged elections and the country is suffering under his presidency. The once great "Breadbasket of Africa" has slid into complacency (Continental News Network).

Today in Zimbabwe, a country of just over thirteen million people (CIA Factbook), the most basic needs are critical issues. In their country, insufficient water is a problem that effects nearly all households. The affects range from loss of crops for farmers, to the challenge of supplying an entire country with enough food for the people. With the life expectancy currently sitting at fifty-four years old (CIA Factbook), Zimbabwe rests in the bottom five percent of the world for life expectancy. All social classes are affected by the lack of basic needs, such as water scarcity, and as a result, people are unable to reach some of the most basic needs such as food and water. The largest issue that plagues Zimbabwe is its geographic location. In five year cycles Zimbabwe is hit with strong droughts that are caused by ocean patterns

(GAIA Case Study). These droughts leave the country with famine and the burning question, *what must we do to stop this disastrous cycle?*

A typical family in Zimbabwe is composed of two parents and three to four children (CIA Factbook). Marriages are not generally arranged, but families are very involved in wedding celebrations. Polygyny is a common practice among citizens of this nation, but it is becoming less popular because of land restrictions and income. Divorce in Zimbabwe is also common; unfortunately, it causes the wife to carry on a stigma to her next marriage. Children in Zimbabwe are raised primarily by their mother (Zimbabwe Embassy). The majority of a young person's life is spent in the home or on the family's land. Respect is a well taught principle; youth learn many of their morals from elders and extended family. Young people are encouraged to take up adult responsibilities by age eight, whether it is cattle herding or caring for the home. Children begin primary school around age seven. For a Zimbabwean child the walk to school might last up to an hour. After finishing seven years at a primary school a child may take an exam to enter secondary schooling (U.S. Department of State). To graduate secondary schooling, there are two tests administered. These tests are the "Ordinary Level Certificate Examination" which is given after four years of secondary schooling and the "Advanced Level Certificate Examination", to graduate after seven years. College is common, but if a person is unable to achieve the grades needed they will not be socially neglected (Zimbabwe Embassy).

Much of the food Zimbabweans consume is from native crops and maize-based. Due to the recent droughts, often times the maize is imported. The staple food is called mealie-meal, which is used to make thick, gritty porridge. These porridges are sometimes seasoned with available meat and vegetables. Onions, tomatoes, and local nuts are used to make sauces for the porridge. The maize flour is also used to make a creamy drink called "maheu." Maheu can be sweetened with sugar to make a sweeter drink or fermented to be made into alcoholic beverages (Our Africa). Sorghum produced on small farms also be used to make another a type of beer. Snacks in the country include dried fruit, fried cakes, and roasted maize that is bought by travelers.

Health care in Zimbabwe is uncommon with only two-thirds of the population able to afford this luxury. The majority of health care is dealt in the public sector. The main supplier of health care is "Primary Health Care", which supplies citizens with child health services, immunization programs, disease control, water sanitation, and curative care (Our Africa). Zimbabwe also utilizes their past medical "experience" in an association called the "Zimbabwe National Traditional Healer's Association of N'anga". This group uses the help of spirit mediums to help cure sickness or psychological disease. Medical personnel are generally trained in the country at one of two teaching hospitals in Zimbabwe: the Harare and Mpilo Hospitals. Unfortunately, many of Zimbabwe's doctors and nurses are leaving the country for better economic opportunities of surrounding countries (UNICEF).

Agriculture is the main industry of Zimbabwe, employing nearly seventy percent of its population, and accounting for twenty-five percent of the country's gross domestic product. Up until the 1980s mineral exports were a large industry, then foreign demand began declining because of South Africa's newly created economy. Also, until 1992, Zimbabwe was self-sufficient in grain production, but since then droughts and the country's poor economic choices have caused the state to import much of its maize. On January 4, 2014, Zimbabwe's agriculture ministry announced that it would be importing one hundred fifty thousand tons of corn from South Africa to help improve food security. Last year Zimbabwe produced eight hundred thousand tons of corn, but consumption is slightly above two million tons annually (GAIA Case Study Zimbabwe). The country of Zimbabwe is predicted to have a food deficit of nearly five hundred thousand tons in 2014.

There are two types of farmers in Zimbabwe, large and small scale farmers. The large farmers control eleven million hectares of land, which is generally better suited for farming and has more potential for economic distribution. The country also has a large amount of small scale farmers; seventy-five percent

of this industry is women smallholder crop farmers (Nationmaster.com). There are one million, three hundred thousand small scale farmers in Zimbabwe who control around twenty-one million hectares of land. Most of their land is located in dry, unproductive areas, with little infrastructure to help farmers distribute their goods.

Although agriculture is Zimbabwe's primary industry, their agricultural technology is far behind. Only thirty-seven percent of Zimbabwe's land receives enough rainfall suitable for agriculture. It is easy to see that if Zimbabwe wants to feed its population it has to make strides in agricultural technology. These changes should have been put into effect years ago, considering Zimbabwe boasts Africa's highest literacy of 90.7% of the population having the ability to read and write (CIA Factbook). About three percent of the arable area in Zimbabwe was in smallholder irrigation schemes after the country gained independence. The country has had irrigation stretching back to ancient times, most notably the systems of Inyanga (World Press). When the British first set up their colonial settlements, missionaries encouraged irrigation and set up a few systems near mission stations. When government first formed in Rhodesia, irrigation practices were supported by the government and funding was available. Unfortunately, these government-supported irrigation practices were run by "irrigation officers" and could not be used off of white colonist's farms. Infrastructure also played a large part in stunting the growth of irrigation in early Zimbabwe. Even though the government supported white farmers with funding assistance, there were only seventy formal irrigation systems in Zimbabwe. According to the World Food Program at least two million people will need food assistance during the hunger season next year.

Geological issues that are facing Zimbabwe on their path to food security include a recent drought that has left the country in shambles, and Zimbabwe's location in relation to the Equator. In 2013, a drought hit Zimbabwe, leaving famine and increased sickness in its wake (New York Times). Unfortunately, this was not the first time that a large drought cycle has hit Zimbabwe. Some of the most recent droughts that affected Zimbabwe and their farmers have struck in the years 1997, 2001-2002, and 2007-2008 (Agricultural Extension System in Zimbabwe). These droughts have been reoccurring in the country's history, and scientists believe they are tied to the El Nino and La Nina ocean currents. In recent years the droughts have been coming closer together. Scientists suggest the industrial wastes from Europe and North America have a connection to the droughts (GAIA Case Study).

Many of the issues that have caused Zimbabwe's food insecure state are tied to policies and decisions made by President Mugabe and his political party, the ZANU-PF. Mugabe first became Zimbabwe's president in 1980. Since then, he has remained in control of the government. His main adversary, Morgan Tsvangirai, has accused Mugabe of rigging elections, but he has never taken Mugabe to court claiming that he would not get a fair trial (BBC World News). In the time that Mugabe was president he has made many changes, most notably redistributing land from white farmers to the native Zimbabweans. The change of land ownership caused many problems. Instead of taking the land in an orderly manner, the government went on a blitz killing and injuring countless white farmers while removing them from their own land (CIA Fact Book). After the redistribution of land, Mugabe continued making many controversial economic decisions.

There are many factors that limit small farmers in production. The largest factor is lack of reliable water. The water scarcity that the country faces does not just hurt crops, but it also affects cattle farmers. The unclean water makes it difficult to sustain cattle herds. Zimbabwe's livestock industry is based on small herds maintained by small farmers. Up to 70% of farmers in Zimbabwe own cattle, so water scarcity affects a majority of the population (Zimbabwe World Press). Limited resources have made it hard for small farmers to purchase antibiotics and reliable food. In result of disease Zimbabwe's beef industry has not grown more than 3% since 1985 (GAIA Case Study). Market bans have been another hurdle that Zimbabwean beef producers have had to face. In recent years the government has had many restrictions placed on farmers including: fences, market bans, slaughter and quarantine controls (Relief Web). These

restrictions have been put in place to help a few exporters, and as a result have added costs and inconveniences for the small farmer. Free range grazing is the main means of keeping a herd in Zimbabwe. Unfortunately if a farmer wants to export, breeds of the cows must be determined prior to sale, and this is hard when cattle are not fenced in and kept in separate herds. In result of Zimbabwe's poor government cattle producers are hit by these restrictions. The dairy industry is most hit by these limitations. Also, as a result of the grazing systems, water for cattle is obtained from rivers and boreholes, and is often susceptible to diseases (Zimbabwe). Even though rivers can carry diseases, farmers must continue using them because of heat stress in Zimbabwean cattle. In especially dry seasons, rivers may dry up forcing farmers to seek unreliable wells for their cattle's liquid nourishment.

Factors that limit plant production are diversified and come from many sources. Irrigation in Zimbabwe is one factor that limits production. When white colonist first settled in Zimbabwe they claimed much of the land, and as a result native black farmers were forced to work in town at wage paying jobs. For a few generations this removed the Zimbabweans from their original land. In that time the colonists were able to set up large complex irrigation systems that included center pivots (Zimbabwe Embassy). These large structures suited the large tracts of land well, but when Zimbabwe's land was redistributed it was nearly impossible to continue to use these large systems where multiple small farms had taken their place. Consequently, the small farmers did not use the center pivots and they went unused. What once had been a successful agricultural area, had become a barren, inefficient, newly independent country. Another factor that limits the country in receiving enough water for agriculture is the economic issues. Zimbabwe has had numerous attempts over the years to set up irrigation funds and reserves, yet all of the plans have failed. Even though the country is suffering from water scarcity, the government has set aside just thirty-six thousand U.S. dollars in the last year for assistance in irrigation and water security (Zimbabwe).

Some solutions that Zimbabwean farmers might consider include ownership, activism, and knowledge. The first step to food security in Zimbabwe is for farmers to document their ownership of land. Small farmers in Zimbabwe have lots of potential, but the country's history holds them back. When land was being redistributed in the 1980s, it was often taken by city dwellers that did not know much about farming. Their lack of knowledge was caused when white farmers set up large farms and took away agricultural employment opportunities in the 1920s. These newly minted farmers, often times, did not actually have ownership of their land, so they couldn't apply for loans. In result, farmers do not have access to funds to pay for technological advancements that could help them make their land more productive. Eventually stemming from this is a low demand for technology, which has caused thousands of scientists to emigrate from Zimbabwe for more economically stable, neighboring countries. The second step would be encouraging farmers to become activists. If farmers take part in their "democratic" government, there is sure to be a change. In many situations throughout history, workers have been able to help governments develop new programs that help both the farmer and the production of food. Finally, encouraging farmers to expand their agricultural knowledge. Zimbabwean farmers need to have a greater knowledge of better and more advanced agricultural systems. When farmers learn more about already applied solutions to other problems, they can use that knowledge and apply it to their own. Some ways to encourage proper agricultural education is setting up extension services in Zimbabwe.

Zimbabwe is a much challenged country both economically and geographically, but fortunately most of their serious issues stem from the government. Some recommendations I might suggest to Zimbabwe's government are based around investment in agriculture. Because Zimbabwe's government is quite corrupt at this time and many bad decisions are being made, my first suggestion would be to seek more representation in government from farmers and people that live in rural areas. With further insights, government workers could better understand and address problems related to agriculture. Zimbabwe is an agrarian country and with seventy percent of its population working in agriculture, it should not be difficult to find people with information on local problems they face. My second suggestion would be to invest in irrigation. As of 2014, Zimbabwe's government is importing large amounts of food (GAIA

Case Study). If they continue to seek other countries' help, their own gross domestic product will never grow. The government would be wise to kick start this new industry and help the majority of the population at the same time. According to Forbes, the Lindsay Irrigation Corps has made sizable gains lately selling irrigation equipment. Zack's Consensus Estimate of the Lindsay's Irrigation Corps 2013 stock increased from \$4.12 to \$5.01 in 2014 (Zacks.com). This is a good increase and either the government or a daring entrepreneur could capitalize on this opportunity. A final suggestion for Zimbabwe is to learn and teach farmers about water conservation. Water conservation will make agricultural efficiency rise and will help farmers stretch their resources. Water is not wasted often now, but seventy-five percent of the current irrigation systems are overhead sprinkler systems. These systems leave opportunity for precious water to evaporate and create further inefficiencies in agriculture. Luckily, seven percent of irrigation systems are under micro-irrigation systems (drip) and are the most efficient available (Zimbabwe). Greater output will come from the small farmer's plots only after steps in this direction are made. By learning about water conservation and being able to buy the equipment, farmers can prosper.

In conclusion, by upgrading agricultural technology and investing in agriculture many things will change. Household income, the country's gross domestic product, and food security would each increase drastically. Again, agricultural technology is an absolute must if Zimbabwe wants to thrive. The country faces many battles coming from the government and geological factors, but with advancements, they can become non-factors. By replacing inefficient gravity irrigation systems with newer, more functional systems such as drip lines, small farmers can make more profits and feed their families. In addition, with more small scale irrigation systems, farmers would not have to give up land to larger farmers. When farmers are able to farm their own land it creates a pride which will lead to advancement and the beginning of a rebuilt Zimbabwe. The changes in this technology cannot just start in the upper classes, but also have some investment from the working classes. If working class citizens stay in Zimbabwe instead of emigrating for jobs, it could lead to more technology and answers. Also, if Zimbabwe's government is able invest some of their money in agriculture, although it may not pay off now, could lead to big gains in the future. These gains would not just affect Zimbabwe either. The country has recently been broken off from assistance from the European Union and United States, because of suspected rigged polls (BBC World News). But, if Zimbabwe is able to increase its maize production and reduce political corruption, they can regain the world's favor. Being supported by the world will be a definite positive, because it will create a sense of unity between Zimbabwe and Africa, and also develop interdependence with the world. Interdependence benefits everyone, and will help Zimbabwe just as much as it would any other country. Zimbabwe can reap the benefits of trade with many trade organizations, creating more income for this currently impoverished country. Also, with interdependence, Zimbabwe can seek assistance from neighboring countries and the world during times of crisis. Norman Borlaug had a dream when he created the World Food Prize, and that dream is for countries to encourage agricultural technology and peace to overcome food insecurities. Zimbabwe has the opportunity to not only help their country produce more food, but reclaim the title of "The Breadbasket of Africa" (Continental News Network). As it is plain to see Zimbabwe has plenty of potential. It is only a matter of harnessing their resources to a common goal for this once great nation to return to its past prestige.

Works Cited

GAIA Case Study Zimbabwe: Drought." GAIA Case Study Zimbabwe: Drought. N.p., n.d. Web. 16 Feb. 2014. <<http://www.ess.co.at/GAIA/CASES/ZIM/drought.html>>.

"The Agricultural Extension System In Zimbabwe." The Agricultural Extension System in Zimbabwe. N.p., n.d. Web. 16 Feb. 2014. <<http://www.fao.org/docrep/005/ac913e/ac913e05.htm>>.

"Home - Rural Poverty Portal." Rural Poverty Portal. N.p., n.d. Web. 16 Feb. 2014. <<http://www.ruralpovertyportal.org/country/home/tags/zimbabwe>>.

"Zimbabwe." UNICEF. N.p., n.d. Web. 16 Feb. 2014.

http://www.unicef.org/infobycountry/zimbabwe_56573.html.

Central Intelligence Agency. Central Intelligence Agency, n.d. Web. 14 Feb. 2014.

<<https://www.cia.gov/library/publications/the-world-factbook/geos/cf.html>>.

"Famine Early Warning Systems Network." Zimbabwe. N.p., n.d. Web. 16 Feb. 2014.

<<http://www.fews.net/southern-africa/zimbabwe/food-security-outlook/fri-2014-01-31>>.

The Independent. Independent Digital News and Media, n.d. Web. 20 Feb. 2014.

<<http://www.independent.co.uk/news/world/africa/thank-you-mr-mugabe-zimbabwes-forced-land-redistribution-led-to-huge-controversy--but-it-has-transformed-the-lives-of-thousands-of-small-farmers-8923229.html>>.

"Economy Watch - Follow The Money." Zimbabwe Trade, Exports and Imports. N.p., n.d. Web. 20 Feb. 2014. <http://www.economywatch.com/world_economy/zimbabwe/export-import.html>.

"Zimbabwe Agriculture Stats: NationMaster.com." NationMaster.com. NationMaster, n.d. Web. 04 Mar. 2014. <<http://www.nationmaster.com/country-info/profiles/zimbabwe/agriculture>>.

MAFUNDIKWA, ISH. "All Africa." AllAfrica.com: Zimbabwe's Farmers Struggle to Feed the Nation. N.p., 19 Feb. 2014. Web. 05 Mar. 2014. <<http://allafrica.com/stories/201402191485.html?>>.

Ndlovu, T. "Cattle Breeding Management Practices in the Gwayi Smallholder Farming Area of South-Western Zimbabwe." Cattle Breeding Management Practices in the Gwayi Smallholder Farming Area of South-Western Zimbabwe. N.p., 11 Dec. 2007. Web. 05 Mar. 2014.

<<http://lrrd.org/lrrd19/12/ndeb19183.htm>>.

"Zimbabwe Profile." BBC News. N.p., 21 May 2013. Web. 05 Mar. 2014.

<<http://www.bbc.com/news/world-africa-14113255>>.

"Geography." Infoplease. Infoplease, n.d. Web. 05 Mar. 2014.

<<http://www.infoplease.com/country/zimbabwe.html>>.

Cross, E. "Zimbabwe's Beef Industry." ZimbabweLand. N.p., n.d. Web. 05 Mar. 2014.

<<http://zimbabweland.wordpress.com/2012/02/18/zimbabwes-beef-industry/>>.

"Zimbabwe: Food Assistance Needed to Stave Off Hunger Crisis, Officials Say." The New York Times. The New York Times, 03 Jan. 2014. Web. 06 Mar. 2014.

<http://www.nytimes.com/2014/01/04/world/africa/zimbabwe-food-assistance-needed-to-stave-off-hunger-crisis-officials-say.html?_r=0>.

"A Brief History of Zimbabwe." A Brief History of Zimbabwe. N.p., n.d. Web. 06 Mar. 2014.

<<http://www.zimembassy.se/history.html>>.

Zacks.com. "Still Time To Harvest Growth From This Agricultural Equipment Maker." Forbes. Forbes Magazine, 05 Feb. 2013. Web. 08 Mar. 2014. <<http://www.forbes.com/sites/zacks/2013/02/05/still-time-to-harvest-growth-from-this-agricultural-equipment-maker/>>.

Richardson, Craig. "What About the Droughts?" Center For Global Development. N.p., n.d. Web. 09 Mar. 2014. <<http://www.cgdev.org/page/what-about-droughts>>.

Latham, Brian. "Hunger Stalks Zimbabwe as Drought With Floods Hit Food Crops." *Bloomberg.com*. Bloomberg, 6 Dec. 2013. Web. 09 Mar. 2014. <<http://www.bloomberg.com/news/2013-12-05/hunger-stalks-zimbabwe-as-drought-combined-with-floods-hit-crops.html>>.

Wofford, Taylor. "Mugabe: Whites Can't Own Land in Zimbabwe." *Newsweek*. Newsweek, 7 July 2014. Web. 11 July 2014. <<http://www.newsweek.com/mugabe-whites-cant-own-land-zimbabwe-257529>>.

Chabwinja, Stewart. "Zimbabwe: Fix the Economic Rot First." *AllAfrica.com*. N.p., 11 July 2014. Web. 11 July 2014. <<http://allafrica.com/stories/201407111430.html?page=2>>.

Mbiba, Lloyd. "We Used to Get Drunk on £1: Tsvangirai - Nehanda Radio." *Nehanda Radio*. Daily News, 11 July 2014. Web. 11 July 2014. <<http://nehandaradio.com/2014/07/11/used-get-drunk-1-tsvangirai/>>.

"Zimbabwe, The Former Bread Basket Of Africa." Continental News Network. Continental News Network, 17 Apr. 2011. Web. 15 July 2014. <<http://allnewsnetwork.wordpress.com/2011/04/17/zimbabwe-the-former-bread-basket-of-africa/>>.

Mitchell, Francesca. "South African History Online." *Khoisan Identity*. N.p., Sept. 2001. Web. 16 July 2014. <<http://www.sahistory.org.za/topic/khoisan-identity>>.

Welford, John. "The First Chimurenga in Zimbabwe." *By John Welford*. *Humanities* 360, 19 May 2009. Web. 16 July 2014. <<http://www.humanities360.com/index.php/the-first-chimurenga-in-zimbabwe-41819/>>.

Moorcraft, Paul. "Rhodesia's War of Independence." *History Today*. History Today, 1990. Web. 16 July 2014. <<http://www.historytoday.com/paul-moorcraft/rhodesias-war-independence>>.

"Embassy of the United States Harare, Zimbabwe." *Zimbabwe Education Profile*. U.S. Department of State, July 2008. Web. 16 July 2014. <http://harare.usembassy.gov/zimbabwe_educational_profile.html>.

"Food & Daily Life." *Our Africa*. Ourafrica.org, n.d. Web. 13 July 2014. <<http://www.our-africa.org/zimbabwe/food-daily-life>>.

"Poverty & Healthcare." *Our Africa*. N.p., n.d. Web. 16 July 2014. <<http://www.our-africa.org/zimbabwe/poverty-healthcare>>.

Scoones, Ian. "Irrigating Zimbabwe: Time for Some New Thinking." *ZimbabweLand*. World Press, 30 Sept. 2013. Web. 16 July 2014. <<http://zimbabweLand.wordpress.com/2013/09/30/irrigating-zimbabwe-time-for-some-new-thinking/>>.

"Zimbabwe's Beef Industry Brings Few Gains for Farmers." *ReliefWeb*. IRIN, 4 Sept. 2013. Web. 16 July 2014. <<http://reliefweb.int/report/zimbabwe/zimbabwes-beef-industry-brings-few-gains-farmers>>.