Elsa Luchsinger Chicago High School for Agricultural Sciences Chicago, IL Zimbabwe, Factor 12 Human Diseases

Zimbabwe is a land locked country in Southern Africa with a family dynamic dominated by the males. In fact, it is not uncommon for men to take more than one wife. Urban and rural families are distinct in size and roles, but on average, there are approximately 4.2 persons per household which is a number that has declined. Food is derived from their rich agricultural traditions and includes a diet of maize, or "mealie meal" which is maize mixed with cornmeal. According to a 2014 International demographic report, over 42% of the population is rural families that rely on their own farming for food.

Conservation farming is prevalent in Zimbabwe based upon the farmer's individual geography and natural ecology. Conservation Farming takes advantage of natural ecological processes to conserve moisture, enhance soil fertility, and improve an average soil structure, and to reduce soil erosion and the presence of diseases and pests. Conservation Farming involves very little soil disturbance, enabling naturally-occurring soil flora and fauna to flourish." (Fenelli) Crops grown through this process include cotton, tobacco, corn and soybeans. Food security is not a given as family support themselves through subsistence living – surviving on their own food. Refrigeration is limited so dairy products are consumed as available. Making a living off crops is difficult, it would be rare to find a Zimbabwe farmer with an income over six figures. Women are responsible for the children and domestic duties so supplemental incomes are rare and dependent on limited materials. The major barrier to improving agricultural productivity and higher wages is access to resources, including land to grow nutritional products. Additionally, Zimbabwe has a major health crisis and their food security is greatly impacted by human diseases.

During the time of September 30, 1987, the country of Zimbabwe became greatly affected by HIV. HIV is a disease that can be referred to as Human Immunodeficiency Virus. HIV is extremely dangerous, as it interferes with the body's ability to fight off certain infections. HIV can be spread through the contact of blood, semen, rectal fluids, and additional fluids that secrete from the body. Those affected by the HIV infection reflect a rate of 15% of the entire population. Being obstructed by a disease like this can easily damage an individual's life, as well as others around them. An extremely poor suited system of health care, especially when it comes to the many outbreaks that have been faced and continue to become more dangerous, are still not being focused on in the way they should be. Families are often attending to individual health issues that take away their ability to keep a family fed. United Nations estimates from 2014 indicate over 1.6 million Zimbabwe adults live with aids; more frightening, is the data for orphans due to adult AIDS deaths is at 570,000.³ The need for families to tend to the sick and dying, impacts their time and efforts to farm and improve agricultural conditions.

In 2013, Zimbabwe suffered a cholera outbreak in the city of Harre, with a population of 2 million. Drinking water had been supplied from wells that had been contaminated with sewage. The sanitation crisis has not been properly addressed which will continue to put the country at risk. Water filtration for farming is almost nonexistent. Zimbabwe experienced a similar incident in 2008 when over 4200 people died and 100,000 were infected. The disease is easily preventable, provided the government addresses their own infrastructure. Until that is addressed, human disease will always be a factor for Zimbabwe securing a safe food supply.

According to a Human Right's Special Report, a safe water supply has been ignored by a government impacted by decades of neglect and corruption.

Access to adequate health care has allowed the prevalence of human diseases to remain a factor for precarious food supplies in Zimbabwe. The issue with medical aid can be determined as an input of why human diseases like those present in this case is not helpful towards for Zimbabwe's health situation. A 2015 report through the Premier Service Medical Society found that only 1.6 doctors are present throughout the country to attend to every 10,000 people. Those who are in need of immediate care know that the level of opportunity to get a possible screening, or examination is slim to none. Many physicians are not being paid the proper amounts, which is causing problems with the availability of medical services. Therefore, those who are not receiving the amounts they need to perform their techniques do not feel the need to attend to any patient's. Private Doctors who have reached out to the government, as for one who claims he hadn't gotten paid in over a year, had calculated an outrageous \$150,000 owed. Those who are patients are suffering from the unfair distribution, causing a greater possibility of severe infection, or worse, death. The access to adequate health needs is more prevalent and severe in the rural, farming areas of Zimbabwe. Families are focused on addressing basic medical needs rather than expanding their income and food production.

Any measurable trend to improve access for health services in Zimbabwe is not apparent. The country is lacking in the development of a sound infrastructure properly managed by the government. Dr. Robert Weinstein, a Cook County physician and international expert in infectious diseases stated that local Zimbabwe farmers need to consider earthworms and crickets both for sustainable food, and that these are natural proteins that do not have infected agents. More and more health experts are recommending alternative solutions. Weinstein explained that local farmers would rather continue to address both their food needs and medical needs as they know only too well that any other medical help will always 'be on the way.' (Weinstein) Weinstein further explained that along with HIV and cholera issues, this region continues to be at risk for significant other airborne diseases that the health community can only marginally address given lack of resources and financial incentive for providers. The lack of attention to this matter has just spiraled the food crisis out of control since the government and economy must address the escalating health crisis. The medical community is unable to eliminate any health risk until the government steps in.

The government needs to address the country's medical crisis and lack of resources. In order to control, manage and eliminate disease, a systematic program must be in place. Instead, the population remains at risk. Improving this factor would increase the stability of the economy and security and quality of food as well as economic opportunities for development and marketing. However, the Zimbabwe economy has been in a free fall since 2013 which has led to the government paying for maize imports. Additionally, the climate changes will prevent success of food production. "I will now need to sell my goats and chickens to generate income," Moyo said when an international aid group visited his farm in the country's capital, Harare. Many more farmers in the drought-prone south of the country are facing the same situation, with the April/May 2015 maize harvest – Zimbabwe's staple crop – reportedly written off in entire districts. (Mhondoro-Ngezi). Lack of food will continue the cycle of poor nutrition, health and poor medical resources.

Based upon my research, there must be a more aggressive approach to sending skilled medical providers to Zimbabwe, even in a voluntary capacity. The medical community takes an oath to serve, and given the escalating health crisis, Zimbabwe may also serve the medical community by providing research and data to eliminate the spread of diseases. The local government has demonstrated that they are unable to manage both the food crisis and spread of disease; therefore, they should work with the international community for the available health experts to adequately serve the underserved. Groups are available, such as Doctors Without Borders that not only want to address medical needs, but also teach families how to survive on their own. The medical community must work with educational communities as well to further ignite a loan forgiveness program that would encourage new medical graduates to obtain experience in underserved countries. As far back as 2003, research completed through Grinnell College,

Iowa, researched and identified that Zimbabwe's healthcare system would greatly benefit knowledgeable from a government subsidized program. Not only would a standard of living with new marketable skills be developed, but the government would pay doctors and healthcare would be accessible and less costly or free to poor communities.

Good responsible government leaders must address this crisis first hand. Leaders need to find mechanisms to communicate and educate those without a voice. Otherwise, those with knowledge must act responsibly in exposing the crisis in Zimbabwe through the media. Government leaders may react just to eliminate the attention drawn upon by their own failures. This may encourage local citizens to become more involved in the political process to change those that take power. While this may be a challenge, since the rural population outnumbers the urban population, their collective voice may make a difference.

Zimbabwe is a land locked nation, therefore, a clean water supply is imperative both for food security and to eliminate health as an ongoing risk factor. Cholera is spread through water. Humans, animals and plants rely on water. The government must engage in a responsible infrastructure. An investment must be made to ppromote improved hygiene practices, including appropriate use and maintenance of the sanitation facilities. Local projects are underway to secure a water supply in rural areas. Organized efforts to implement small preventive measures will help increase sanitation while improving health benefits and reduce other high cost interventions. According to an assessment form the Global Water Supply and Sanitation Report, costs of several homemade latrine and water securing devices are minimal after an initial launch period, so that public intervention need not require public expenditure. (Cairncross)

Voluntary medical programs and private benefactors intervening to help Zimbabwe with their health and food crisis will require a change in government politics. Leaders must engage and address their poor population if they want to have a chance as surviving as an independent country. The national government was unable to preserve corn as a major natural resources. The fact that this food source must be imported, highlights the need for new leaders and economic management. The government failed to address the HIV crisis, cholera, and now additional airborne pathogens. International support and aid must continue in order to improve the food security for a typical family in Zimbabwe.

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