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Zambia, Malnutrition

## **Zambia: Taking Route to Save Many**

Only 53% of the households in Zambia have enough food for the year. In Zambia, there are many problems, but the one that is taking most lives is malnutrition. With the collaboration of others, the lives of the people in Zambia could be saved. With the technology that is in the world, in addition to the education that could be brought there, malnutrition could decrease exponentially.

### **Zambia and its culture**

#### **a. Population**

Zambia has the population of 17.46 million, with 10,230,051 people (59%) that live in a rural area and 7,231,024 people (41%) who live in an urban area (Zambia Economy, 2018). 8.03 million (46%) of the population is the age of 0-14, 3.5 million (20%) are ages 15-24, 5.06 million (28.72%) are ages 25-54, and there are only .93 million (5.26%) people who are over the age of 55. With the average age of Zambians being 16, they are mostly in secondary school or at a job. In Zambia, there are more births than deaths. The birth and death rates are at 41.5 births in every 1,000 people and only 12.2 deaths in every 1,000 people. In America, the birth and death rates are 12.5 births in every 1,000 people and only 8.2 deaths per 1,000 people (Zambia Age Structure, 2018).

#### **b. Terrain**

Zambia is 290,587 square miles, which is comparable to Texas, Maryland, and West Virginia put together. Most of the population lives in the Line of Rail, a railway that connects many cities like Copperbelt, Livingstone, and the capital, Lusaka. Most of the people in Zambia do have access to roads and markets. Zambia has many rivers and lakes but most of the water is not clean. There are three main national parks in Zambia: Kafue National Park, Southern Luangwa National Park, and Northern Luangwa National Park.

#### **c. Politics**

Under the president of Edgar Lungu, Zambia has a presidential republic. Like the United States, it consists of executive, judicial, and legislative branches. The executive branch, which is the president, is elected every 5 years. Like in America, the judicial branch oversees the laws and how they are executed. They will be in office until they are 65 and then they have to retire. The legislative branch is also just like America's in function. They have an election every 5 years just like the executive branch. Although Zambia is set up similar to America, its people do not share the same freedoms. It is listed only as the 132<sup>nd</sup> freest country in the world (Zambia Economy, 2018). With the arrest of one of the head leaders in 2017, their economy has plummeted because of a drop in copper sales, their main business.

#### **d. Climate**

The Zambian climate is a tropical climate and it is rainy from October to April. They have three main seasons. From December to April, considered a rainy season, it averages 20 degrees Celsius (68 degrees Fahrenheit). From May to August, a cool, dry season, it averages 16 degrees Celsius (60.8 degrees Fahrenheit), and from September to November, a hot, dry season, it averages 30 degrees Celsius (86 degrees Fahrenheit). They have to depend on rain because they have poor soil. 6.6 million people are without clean water in Zambia. They have many hills and are on a high plateau.

#### **e. Agriculture and Exports**

In Zambia, farming is a fundamental source of food. However, with a tropical climate and three harsh seasons, it is hard to farm, so only 14% of the land is cultivated. Zambia's farms are 3.27 hectares, which is about 1.5 football fields. Also, with poor soil and either droughts or flooding, Zambia's agriculture is limited. Zambia's agriculture, based on the CIA, are corn, sorghum, rice, peanuts, sunflower seeds, vegetables, flowers, tobacco, cotton, sugarcane, cassava (manioc, tapioca), coffee; cattle, goats, pigs, poultry, milk, eggs, and hides. Based on the CIA, their exports are copper, cobalt, electricity; tobacco, flowers, and cotton. The main imports are machinery, transportation equipment, petroleum products, electricity, fertilizer, foodstuffs, and clothing. Zambia is very dependent on China, who buys their copper (The World Factbook: Zambia, 2018).

#### **f. Family**

An average family consists of 6-7 members and they would live in a circular, stone hut with a straw roof and an open window. The hut would be close to the father's family's hut or it would be the father's family's hut. Not only would the family have their own kids but most also foster. 14% of children under the age of 14 are fostered in Zambia (Banda). The families would grow most of their own food and cook on an outdoor stove.

A typical diet is corn, Nshima (ground corn), ifishashi (vegetables and peanut sauce), and Samp (maize and bean dish). The typical jobs in Zambia are clerk, mining, manufacturing, watchmen, and drivers. They have an average yearly wage of \$917 USD and have free healthcare. 140 out of 1,000 children are deceased before the age of 5 because of malnutrition and the lack of doctors. Also, only 36% have clean water and 50% do not have satisfactory sanitation (UNICEF, 2018).

#### **g. Education**

Zambia's school system is not like ours; it consists of Primary, Middle, Secondary, Vocational, and Tertiary Education. Primary Education is like our elementary schools except it is from age 7 to age 14. Middle Education focuses on getting kids ready for work. Most will head off to a job at the age of 13. To get to Secondary Education, they have to take an exam and then they will be admitted to Secondary Education. If they were not admitted, they would go to Vocational Education, a training school for different jobs. For the students who went to Secondary Education, they would have a chance to go to Tertiary Education, which is a college. Of the children that go to school, only 1 out of 4 will finish with a Tertiary Education (Education System in Zambia, 2012).

In 2010, Zambia's literacy rate was 83%. Most schools are overcrowded and have unqualified teachers, so it is harder to finish school with the resources they have. 13.37 million students go to high school in America, but in Zambia, only 18,000 students go to Secondary Education. They have a 1 to 49 ratio for teachers to students (Education System in Zambia).

## **Zambia's Problems**

### **a. Malnourishment**

There are many different problematic topics in Zambia such as education, trade, country conflicts, malnutrition, disease, sanitation, agriculture, climate adaptation, energy resources, and water cleanliness, but the main problems are education and malnutrition. Malnutrition is the lack of having enough food or not having the nutrients in the food. Malnutrition is a serious topic because 48% of the Zambian population is malnourished (Malnutrition in Zambia). The main contributions of malnutrition in Zambia are the lack of protein, energy, iodine, iron, and vitamin A (UNICEF, 2018). Malnutrition takes the lives of many, but it is more common in the rural areas because of the lack of doctors.

Malnutrition affects people differently. For example, breastfeeding is harder for the women. They do not have the nutrients the babies need in their milk. Malnutrition affects the elderly and children most. There are only 2.33% of the elderly left (UNICEF, 2018). Because of the problem, a lot of the population migrates into a suburban region, so they can have better access to doctors and to work.

### **b. Statistics**

45% of the children under the age of 5 are malnourished, and 25% of the children under the age of 5 are underweight. 70% of the children are food insecure, and of the 70%, 45% are malnourished. 15% are underweight; also, 5% are wasted. Wasted is a term used to describe a person, who is malnourished and is thinner than an average person. 54% of the children under the age of 5 have a Vitamin A deficiency, and 13% of the women able to bear a child have a Vitamin A deficiency. Anemia is a blood deficiency, which 53% of the children and 30% of the women able to bear a child have. 4% of the children ages 7-12 have an iron deficiency. 12% of babies are born with a low weight (UNICEF, 2018).

Based on the World Food Bank, out of the countries of Nigeria, Lesotho, Côte d'Ivoire, Kenya, Cameroon, Mauritania, Sao Tome and Principe, and Zambia, Zambia has higher rates of stunting than these countries (World Food Bank, 2018). Stunting is when a malnourished child is a smaller height than a child of an average child of the same age. 40% of the children under the age of 5 in Zambia are stunted, compared to the United States, in which only 2.1% are stunted. 70% of households do not have enough food to last them all of January and 67% don't have enough to last them February. Based on the Indaba Agricultural Policy Research Institute (IAPRI), 100% of households experience hunger in one or more months. In Zambia, the mean number of months a household will endure without food would be 1.6 months (IAPRI, 2018).

## **Solutions**

### **1. Overview**

All of the solutions below are not going to solve the issue at hand completely but will decrease it exponentially. They are all different ways of getting food to Zambia and/or to help make more food there. The solutions include crop rotation and group help.

### **2. Crop rotation**

Crop rotation is a harder solution than most of them. In Zambia, there are harsh climates and with poor sandy soil, it is hard to grow crops. If this solution worked, it would add nutrients to the soil and give nutrients that the people of Zambia need, like vitamin A. The World Food Bank would send seeds to Zambia with a booklet of when each crop should be planted. The Zambians would plant different plants

during each planting season. They need plants high in vitamin A, such as carrots, sweet potatoes, kale, spinach, and cantaloupe. They would separate their farms into four different sectors, so while one or two of them are being used, the others would have fertilizer or cover crops like clover to help with the nutrients.

For example, if they were given peas, squash, onions, and spinach, they would start by planting the peas because they will put nitrogen in the ground and they have long roots that will help make the soil stronger. Next they would plant spinach because they have shallow roots that will add nutrients to the soil that the beans didn't, since it had longer roots. After the spinach would be a root crop like onions. They have long roots and will add more layers to the soil that will make it able to keep water in it. Lastly they would plant squash that will take in any extra nutrients that are not needed in the soil.

This would be fueled by the government and donations from the community. The community would invest those donations through the World Food Bank which then supplies the seeds and tools, like shovels, greenhouses, fertilizer, and hoes.

Within every project like this, you need some policies. This would take some great effort into getting the soil back into shape. If a few Americans (1-2) would volunteer, they could help set up farms, help with building greenhouses, and teach the farmers on how to use the fertilizer and how to use irrigation to help with droughts. Those people may only be there for less than a month, just to get the farm started. They would need to be taught the culture of Zambia and would have someone to help with the culture and language barrier.

This solution uses the technology from the different tools and from the plants themselves, to make the soil stronger and more fertile and usable. In recent years, based on African Farming, Ghana started using crop rotation and it has raised their crop harvest from .8 per hectare to 2.4 per hectare (European Soil Data Centre, 2018). Based on Zambia's soil, some technology will not be as suitable for them, like rakes. Rakes are hard on their soil since it is so sandy. This solution is focused on the farmers of Zambia, but this solution can be taught to the citizens and it could spread through the citizens. As each person spreads it to their friends in other places or countries, it could help many other countries, with the help of the World Food Bank and the community.

### **3. Group help from the United States and other countries**

The next solution will require more people and money. This would not solve all the needs, but it will help with the biggest problem and lead to the solution of the other problems. Foreign aid can be used in many different ways, but the most useful would be developmental aid. The recommendation would be to send a group of doctors, teachers, leaders (governmental), students, and volunteers to Zambia. They would help with caring for malnutrition and other needs around Zambia, including agricultural education. The leaders of this plan would be the students, such as Borlaug Scholars. The students would also have government officials there to help with the needs of the community.

There are always people who think that we should fix our problem before we fix others. To convince them and the government that helping Zambia should be a priority, the group in charge would explain to them that as we help others they can help us with our problems. For example, Zambia is rich in oil and copper which could be traded with the US for our help with their food needs.

This plan would be funded directly by donations and research grants. The students would provide the leadership, organize the project, and do most of the face to face work with the Zambian farmers. The community would help with collecting the donations. The government would help with organizing the travel and communication to Zambia. The organizations and volunteers would be there to go to Zambia

with the leaders and government. There would be 50-100 people at a time; they would be there for three months, then another group would go in. To help with the culture, they would talk with someone directly from Zambia and would have someone to help with the language barriers. This project would be sustainable only with the help of the community, nationally and globally, and the plan would not be controlled by the government, but by the students.

### **Conclusion**

Malnutrition is taking too many lives in Zambia. Because of harsh weather conditions and the lack of education, the Zambian farms are not producing the food they need to survive. It will take coordination and collaboration with other countries and volunteers to retrain the Zambian farmers to overcome the lack of food.

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