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Malnutrition

### **Malnutrition in Ethiopia**

Every ten seconds a child dies from hunger related causes (WFP). This problem is especially prevalent in Ethiopia where 28% of childhood deaths are caused by malnutrition (UNICEF). The Federal Republic of Ethiopia is a large country in East Africa with a population of around 105,000,000 citizens (Worldometers). Ethiopia is a democratic nation that is mostly rural, with 85% of their population farming. As a result, the country is dependent on agriculture. Even with this dependency on agriculture, food security is still a large issue because their agriculture is largely dependent on rain, “natural events such as droughts and floods usually trigger food insecurity in Ethiopia, where over 85 per cent of the population is dependent of rain-fed substance agriculture and livestock husbandry , resulting in an increased number of children with acute malnutrition,” (UNICEF). An estimated 38% of children do not have proper nutrition. Malnutrition is the foremost cause of death in children under 5 (Results for Development). Most Ethiopians also lack access to healthcare, clean water, and proper sanitation (Export.gov). All of these factors contribute to the problem of malnutrition within the population (especially the youngest population) of Ethiopia. Something must be done to lower the staggering numbers of people who suffer and die from malnutrition.

Ethiopia is a farming nation made up of mostly small sustenance farmers that rely on their crops to survive and feed their families-. The average farm size in Ethiopia is about 3 to 6 acres, compared to the average size in the US of about 440 acres (US Farm Data). The culture in Ethiopia is largely centered around family. Usually, 3 generations will live together. The older couple, their sons and sons’ wives, and their grandchildren (Cultural Atlas). They are also known as one of the poorest countries in the world. The average salary of someone in Ethiopia is approximately \$2,876 USD (Average Salary Survey) compared to the average American salary of \$56,516 USD (CNBC). On an average day, Ethiopians will eat one or two meals with occasional snacks. Their meals usually consist of a thick spicy stew and spongy bread. They also eat a lot of cereals and root crops (Adoption Nutrition). The family, probably, is engaged in agriculture like most of the country and lives on a small farm growing their own food or cash crops to sell for a profit (FAO). One major factor that keeps families from getting proper food and nutrition is simply that farmers cannot grow enough food in the climate. The climate is mostly desert and they often have droughts (Climates To Travel). The droughts make the farmers unable to grow their crops so they do not have enough food if they are sustenance farmers and they cannot make the income they need if they are relying on the growing cash crops to feed their families.

Most Ethiopians feed themselves through subsistence farming with old tools and technologies. According to John Bliss, “Farmers in rural Ethiopia till their fields with oxen, and modern tools like tractors or even long-handled hoes are rare”(Bliss). When you think about using oxen for farm work and lack of proper tools you might think about a farm that existed hundreds of years ago however in Ethiopia

those practices are still commonly used to this day. This shows that Ethiopians lack access to proper tools and education that could increase their productivity and yields. Most of the farmers have no way to store their crops for long periods of time (Baye). Most of the crops grown for subsistence are grains but Ethiopians with a little more money can have small herds of cattle that they can use for meat or milk (Baye). Even Ethiopians below the poverty line still can own oxen. They are very important and allow a farmer to work their fields. If a farmer cannot afford a pair of oxen he might rent them to plow his fields (Baye). Arguably, the most important crop to Ethiopians is Tef. It is the main ingredient of Injera, a popular spongy flatbread in that area (Teff). Farmers are also known to grow 6-10 crops in the same small plot of land (Baye). Major issues with Ethiopian agriculture include, improper land preparation and lack of special seed selection. This leads to Ethiopia having very low yields (Baye). These problems mean that currently, agriculture in Ethiopia is inefficient and cannot properly feed its population with the resources available at present. This problem will only get worse in the coming years as the food supply globally will have to increase by 70% by 2050 (Norero). The technologies in place now are not able to sustain the countries current population, let alone the significant population increase expected. A change has to be made for Ethiopia to be able to sustain itself now and in the future.

One of the biggest challenges Ethiopia faces is malnutrition. An estimated 38% of children are malnourished and malnourishment is the biggest cause of death in children under the age of 5 (Results for Development). This seems large but compared to 2000 when 58% of children were malnourished, the problem is getting better (UNICEF). There are two kinds of malnutrition, Severe Acute Malnutrition (SAM), where people are not able to get the amount of calories that they need to function, and different deficiencies in individual vitamins and minerals. An estimated 2 million people worldwide are suffering from “hidden hunger” which means they get a proper amount of calories but do not have access to essential vitamins and minerals that they need (Hefferon). Some common deficiencies that Ethiopians face are Calcium, Iron, Iodine, Vitamin A, Vitamin D, and Zinc. These deficiencies are serious and can cause weak bones, anemia, impaired immune function, etc. (Adoption Nutrition). It is important for these individuals to have access to a variety of nutritious foods to get all of the proper vitamins so their bodies can function. Certain vitamin deficiencies happen because Ethiopians cannot grow a large variety of foods so they are missing essential vitamins and minerals. Aid from the UN, as well as other independent organizations, have been improving access to nutritious food in Ethiopia, however, we still must continue to work as hunger is nowhere near eradicated. Action needs to be taken now especially because of climate change. Drought can greatly impact Ethiopian’s ability to feed themselves and their families.

Appropriate solutions to eradicate malnutrition must be affordable, and easy to implement into the patient’s every day lives. For example, refeeding individuals in a clinic does not work for the majority of people who suffer in Ethiopia. This is because they cannot spend significant amounts of time in the clinics due to the need for them to work in their fields or provide for their families. Individuals need a solution that can be implemented at home. Also, a solution is needed that is sustainable. While refeeding will help the individual now, these nutrients must be present in their diets regularly so they do not get malnourished again. Home solutions will also prevent others from becoming malnourished. It is important to have a complete, well thought out plan so when it is being implemented one know what to expect. Everything from the government to the religion of the people must be taken into consideration for a plan to work.

One solution is for private charities and organizations to provide RUTF and vitamin supplements to children and families. Ready-To-Use therapeutic foods or RUTFs are individual packs of a paste that have the vitamins needed to prevent malnourishment. One carton of these packets will treat SAM (Severe Acute Malnutrition) in one child if administered regularly for 6-8 weeks. (UNICEF). This is a short term solution that can be quickly implemented while other strategies are being employed. Supplement use of vitamin A in developing countries has been effective already. UNICEF and other organizations have programs that help provide needed supplements to children and mothers (Shrimpton). For iron deficiencies, there is a product called the Lucky Iron Fish. This product is a fish shaped piece of iron when boiled with a little bit of acid releases the iron, then you simply drink the water. A singular fish costs only \$35 dollars and can last for five years. This is much cheaper than iron pills and can be reused over and over again. Lucky Iron Fish works with different humanitarian organizations to buy and distribute these 'fish' they work with organizations such as Peace Corp, Global Medic, and Free to Shine, with the help of these organizations Lucky Iron Fish has been distributed in 88 different countries (Lucky Iron Fish). This product can make a significant impact in Ethiopia since iron deficiency is one of the important nutrients missing from the Ethiopian diet. These products and supplements can help with the individual nutrient deficiencies with which these people are struggling. UNICEF also distributes approximately 80% of the RUTF so with more funding from donations they would be able to reach more children (UNICEF). The company that produces the Lucky Iron Fish uses part of the proceeds from their sales to donate iron fish to those in need in developing nations. Funding for this solution needs to come from a variety of sources. It can be from everyday people having fundraisers or asking for donations instead of birthday presents. Funding from the government to help out their people who are most vulnerable. However, potentially the biggest impact can come from major corporations. These companies and the individuals that run the companies, have great amounts of wealth. If they give funding to organizations that provide these life saving measures then there will be a great impact. Even if supplies are available to do this work and help children, there is the issue of getting the supplies to the people in need. A way to do this is to hire locals to hand out the medications. This solution is efficient because the locals know the area and most likely know where the people who need these life saving supplies are. Not only is the malnutrition problem being helped, but by hiring locals, the economy is being supported. By supporting the economy, we are able to lift people out of poverty while providing this service. This is not a long term solution for eradicating malnutrition because it only fixes the effects not the actual problem itself. However, this will save thousands of lives while the other solutions can be implemented.

Another solution is to grow genetically modified crops. These crops can be modified to be drought resistant which can help in the desert climate. They can also produce a higher yield from the same amount of plants. These hybrid seeds keep the genetic diversity which will help in the event of a pest infestation or heavy rains because of their biological differences (Scientific American). The USDA is currently looking to modify corn that will be drought resistant and can yield 7-10 more bushels per acre (Scientific American). This could greatly impact the people of Ethiopia because they could get more food without doing any more work. They would still be able to feed themselves in times of drought. This would have a major impact because the demand for food in Africa is expected to double by 2050 (Madakadze). In addition, it is possible to genetically modify crops to have more vitamins and minerals.

Scientists have already been able to add iron, vitamin A, and zinc, some of the key nutrients that Ethiopians need (Hefferon). They wouldn't even need to eat a large amount to receive the nutritional benefit, "about 150 grams of (Golden Rice) provides the recommended Vitamin A for a child," (Norero). A setback in this issue is that most GM seeds are patented and are not affordable to those who would benefit from them. If companies would be willing to work with organizations that provide support to developing countries they might be able to help out with the prices. Individual NGOs would have to help by distributing the seeds to farmers. Also, the crops created for humanitarian reasons such as Golden Rice and Golden Bananas will be released royalty free so the farmers will be able to grow these crops (Norero). Another setback to this solution is that many people have prejudices about GMOs because they are not properly informed on the subjects or aware of the strict government regulations. According to Daniel Norero from Cornell University's Alliance for Science, "Unfortunately, it (Golden Rice) has not yet been authorized for cultivation in any of the countries where it is needed. This is partly due to the excessive regulation of GM crops and the strong opposition of environmental movements," (Norero). The public's opinion should not stop these crops from being available to save many lives. Golden Rice has, "passed different biosafety and human consumption tests, and has been approved for human consumption by the regulatory agencies of four developed countries," (Norero). Society's fear of GMOs has cost an estimated 1.4 million lives in the last decade in India alone (Norero). This stigma of GMOs can be avoided by educating the public about the benefits of GMOs and sharing the scientific studies that have been done proving their safety. A report from the National Academies of Science, Engineering, and Medicine reviewed hundreds of studies on GE crops and they, "found no substantial evidence that foods from GE crops were less safe than foods from non-GE crops," (Lynas). The public fear of GMOs has almost no scientific basis so why are we still letting people's fears stop us from providing life saving foods to those in need?

Overall, it is important that in a global family of nations, we recognize the needs of other countries and provide them support as needed. Many organizations such as UNICEF and Research for Development have been giving support to those in need and making a huge impact as well as government programs that are helping get essential food and vitamins. The situation in Ethiopia has certainly improved over the years, but it is still a major issue. There are still millions in Ethiopia alone that lack access to food, water, and proper sanitation on a daily basis. We must not forget as we get in our cars, turn on our television, or get in the shower, how lucky we are and how we can help others that are not as fortunate. You can help by donating to organizations that provide support to these developing countries that need them most or donating your time and volunteering for one of these organizations. Another way that we can all help out is to spread the word to others. Recently, the younger generations have been calling for change and making it happen by getting their message out through social media, if we were to shed light on the situation happening and get it more attention people who were not aware it was even happening will want to help. The next generation is not waiting for change, we are making it happen. If corporations and NGOs pay attention and reach out to the younger generations, like the World Food Prize is, they will get new ideas and passionate people that could help solve the issue. It is always said that the children are the future so we must listen to them and harness their energy for good so we can make the most change happen. The most important thing to remember is that this situation is happening all over the world and we must not ignore the problem and do all we can to help those who are less fortunate than ourselves.

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