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Shedding a Light of Hope on Hungry Ethiopia

Malnourishment is a major issue in the country of Ethiopia. The problem of malnourishment is being exacerbated by environmental factors including deforestation and drought, and by a lack of nutrition education and poor awareness of Ethiopia's problems. Measures by both the government and non-governmental organizations should be taken to alleviate the causes of malnourishment.

Ethiopia is a country on the east coast of Africa in the region known as the "Horn of Africa." It borders Somalia on the east, Sudan on the west, Kenya on the south, and Eritrea and Djibouti on the north. The nation has a high plateau at the center, and this plateau is divided by the Great Rift Valley. The west part of this highlands region gets rain during the summer, but the east part and the lowlands are mostly hot and dry (Ethiopia Guide). Although 80% of Ethiopians make their living through agriculture, Ethiopia's geographic condition is not suitable for farming due to sporadic rainfall and infertile soil quality that has arisen from manmade and environmental catastrophes. Consequently, 44% of the population lives below the poverty line, most of which are small-scale farmers (Rural Poverty Portal). Currently, more than 12 million people in Ethiopia are either chronically or temporarily food insecure, and according to the World Food Programme (WFP), in 2008, more than 35% of Ethiopia's population was undernourished (2009 Hunger Map).

Typical rural Ethiopian farm families are often large and extremely poor. Ethiopia is one of the poorest nations on earth. The average gross national annual income (GNI) per capita in Ethiopia is US\$280. That means that the average family in Ethiopia lives on just a few dollars per day. In fact, rural families live on less than US\$.50 per person per day (Rural Poverty Portal). In 2003, the fertility rate in Ethiopia was 6.8, which means that on average, a woman will give birth to 6.8 children. The infant mortality rate is 69 death in 1,000 births, and the mortality rate under 5 years of age is 1.7 in 100 (Population, Health 2003). Using those statistics, a "typical" subsistence farm family in Ethiopia would consist of a mother and a father and four or five surviving children and the family would be living on just \$4 to \$5 per day.

Because primary school education is compulsory, 90% of primary school aged children are enrolled in school until the age of 13, however the literacy rate among adults is only 36%. (Rural Poverty Portal). In a typical rural family, children under the age of 13 would probably attend school. And if they live in an area with a Food for Education program, they would get to eat at least once balanced meal per day. Children over the age of 13 would most likely not attend school and may not have the same opportunities for daily meals as their younger siblings.

More than half of Ethiopia's small farmers have less than one hectare of land (Rural Poverty Portal). A typical farm family would grow different crops depending on if they lived in the highlands or the lowlands. The majority of land in Ethiopia (86%) is planted with grains, which is a staple food in the Ethiopian diet. The most common grains grown in the cooler highland areas are teff, wheat, barley, whereas sorghum, corn, and millet are grown commonly in the hotter, semi-arid lowland areas (Crop Characteristics).

Other staples in the Ethiopian diet include tubers and root crops like potatoes and sweet potatoes, pulses like chickpeas and lentils, and oil seeds like sunflower seeds. Consumption of meat in rural areas is very low, but some rural herders do include milk as a staple in their diet (Nutrition Country Profiles). Because of the poor state of agriculture in Ethiopia, the meager portions in the average Ethiopian's diet does not adequately support the physical activity of a typical Ethiopian farmer, resulting in malnourishment. It is also likely that the typical rural Ethiopian family suffers from iodine deficiency as only 20% of households consume iodized salt. Iodine deficiency, which can be avoided

by consuming iodized salt, causes thyroid gland problems and goiter (Ethiopia Statistics). Additionally, anemia is a problem for many rural Ethiopians. Anemia is an iron deficiency, and it occurs when a diet is low in foods of animal origin. Nutrition education may be one of the only ways to combat many of these diet related malnourishment problems (Nutrition Country Profiles).

The typical subsistence farm family would not have access to health care to help combat their malnourishment. In 2001, health care spending was estimated to be US\$4.50 per person per day in Ethiopia, compared with \$10 per person per day in other sub-Saharan African countries. There are only 20 trained health care providers per 100,000 people in Ethiopia, and that imbalance is even higher in rural areas. Serious health issues like HIV/AIDS and malnourishment are so high, and the access to health care is so low that, in 2003, the life expectancy of an adult in Ethiopia (male or female) was only 43 years, twenty years lower than the world's life expectancy rate. (Country Profile: Ethiopia). A lack of access to health care means that farm families in Ethiopia do not have access to an important source of nutrition information.

The biggest barriers for a typical rural family in Ethiopia to improve their situation are the environmental problems of deforestation and soil infertility that cause poor farm production, education about diet and proper nutrition, and poor access to health care. Because current conditions in Ethiopia are extremely severe, it is quite surprising to learn that this was not always the case. Fifty years ago, soil infertility and drought, which are two main causes of Ethiopia's malnourishment, were not nearly as big of a problem.

Drought in Ethiopia is exacerbated not because the country as a whole lacks water, but because the water distribution within the country is adverse. In fact, Ethiopia has Africa's second largest water source in Africa. But those water sources are concentrated in particular regions and not shared throughout the country. The Great Rift Valley region in the southwest Ethiopia gets over 2,000mm of rainfall annually; on the other hand, dry part of the country, such as northeast Ogaden region, get less than 200mm every year (Ground Water). Insufficient irrigation systems in Ethiopia add to the problem. The percent of irrigated farmland out of total amount of arable land is less than 1 percent (United Nations 2)

While drought is causing an enormously deleterious effect on malnourishment, soil erosion and infertility are also major factors affecting farming conditions. According to the Food and Agriculture Organization of the United Nation's profile of Ethiopia, soils of the Ethiopian highlands were at one time naturally very fertile because they come from decomposed remains of volcanic lava (United Nations 1). A 30-year-old farmer from western Ethiopia also remembers that the land in his village once used to be full of wildlife, and not at all desolate (Haileselassie).

But today, soil erosion and deforestation has resulted in an epidemic of malnourishment, especially for children in Ethiopia. Between 2003 and 2008, 38% of children under five were moderate or severely underweight. 51% of children under five were suffering from moderate to severe stunted growth as a result of malnutrition (Ethiopia Statistics). 15% of Ethiopia's population are considered Food Insecure and had a high reliance on food aid. An estimated 75,000 children are affected by severe acute malnutrition and 6.2 Million people required emergency food aid in 2009 (United Nations 2).

The seriousness of the situation in Ethiopia demands that both the government and the non-governmental organizations combine efforts to solve this issue.

The Ethiopian government should continue to take initiative. Currently, several aid programs are being conducted throughout Ethiopia, including Managing Environmental Resources to Enable Transitions to more Sustainable Livelihoods through Partnerships and Land Users' Solidarity (MERET-PLUS), a joint program by the Ethiopian government and the United Nations World Food. MERET-PLUS employed farmers to plant trees in hillside farms and paid them in grains that could be used as fertilizers for their lands. This program proved to be effective when several forested areas were

established across the country. (Hergesheimer) Continuing this program would help combat the deforestation that is causing erosion and reducing the fertility of the land. Over time, this program could have an impact on crop production, which could help reduce malnutrition.

Similarly, with the help of the World Food Programme, Ethiopian Ministry of Health also has been conducting Children in Local Development (CHILD)/Food for Education (FFE) program. This program is currently providing meals to 770 schools in 130 districts, thereby feeding over 400,000 children in the Afar, Amhara, Oromiya, Southern People's Region, Somali and Tigray regions of Ethiopia. According to Jakob Mikkelsen, a WFP representative in Ethiopia, this program has been beneficial as the number of students who enrolled in WFP-assisted schools rose by 7% from 2006 to 2007. Attendance rates of those schools are very high, around 91.5%. Furthermore, school drop-out rates in WFP-assisted schools (9% for girls and 11% for boys) proved to be lower than those in other schools (11.25% for girls and 12.26 for boys) (Lambers). Programs like the Food For Education program help to alleviate malnourishment in two ways. First, the program helps the children now by providing them with one balanced meal every day. Second, the program will reduce malnourishment long term by encouraging children to come to school where they will be able to get an education which will increase their ability to provide for themselves.

Although these governmental programs seem practical, they are actually very complex and challenging. The recent global economical crisis, high food prices and low donation rates have impeded these campaigns from progressing smoothly. Mikkelsen says that while resource allocation to Ethiopia's program diminished by 43% from 2006 to 2007, the cost of this program rose by 50% since early 2007. Also, a WFP report from 2009 showed that donor contribution rates have fallen by 50% since 2007. (Lambers) This information reflects the importance of people being engaged in solving this issue.

While continuing its cooperation with WFP, the Ethiopian government ought to bring an end to deforestation. Previously mentioned were numerous advantages that trees provide to make land arable. However, these trees are currently being threatened by intense rates of deforestation. Between 1990 and 2000, Ethiopia lost an average of 0.93% of its forests per year. The deforestation rate has increased continued to increase since 2000. Overall, from 1990 to 2005, 14.0% of Ethiopia's forests, which is over 2 million hectares, were cut down. The Ethiopian government should recognize the significance of trees to food-producing environment and implement strict legislation to prohibit any further deforestation (Butler).

Government organizations cannot solve the problem of malnourishment alone. At the same time, non-governmental organizations should also be encouraged to take active steps towards resolving the situation in Ethiopia. Non-governmental organizations can undertake jobs such as arranging community-to-community or school-to-school service programs. Similar to Invisible Children program, where a school outside of Uganda is paired up with a Ugandan "sister school" to help improve education environments in Uganda (Invisible Children), a non-Ethiopian school or a community can get together with an Ethiopian school or community to assist the Ethiopian counterpart in terms of agricultural as well as nutritional conditions. A likely element of the program could include pairs of schools joining efforts to create school gardens in the Ethiopian schools. Through the school gardens, schoolchildren will not only gain opportunities to learn effective farming techniques at a young age, but they will also be able to grow some food that can be used for the school meal system.

Non-governmental organizations must fund-raise to support their efforts. The necessity of financial support to governmental programs was already emphasized. Non-governmental groups may add on to the Ethiopian government's efforts to collect money needed to make all the projects viable. There can be various ways non-governmental organizations can take part in this process; those organizations can sell traditional Ethiopian accessories or products in foreign countries so that the profit from this trade will go back to Ethiopia to help malnourished people. Such method can be very helpful since it will advertise Ethiopian culture while generating money as well.

Finally, one crucial project for which the governmental and non-governmental organizations must work together is the improvement of the irrigation system. As referred to earlier, drought in Ethiopia is a big problem because water is unequally distributed within the nation. This suggests that once a beneficial irrigation system is established, the drought issue in Ethiopia will be tremendously mitigated. A successful irrigation structure had been experimented in Benin, West Africa, and the same method may be adapted in Ethiopia. Constructed in certain villages of the region were solar-powered drip irrigation systems that used photovoltaic power to deliver water. These pumps were beneficial because water hauling, which used to be done by human labor, could be done by solar power. Also, maintenance figures of these pumps would be less than oil- or gasoline- fueled pumps since they use solar power. These irrigation systems will be comparably undemanding to apply to Ethiopia because there are plenty of major water sources in Ethiopia such as the river basins and Rift valley lakes, including Wabi-Shebelle, Genale Rivers, and the Ziway Lake (United Nations 1)

The case study that was recently conducted in rural Benin illustrates the effect that these solutions will bring to Ethiopia's hunger and malnourishment. The study in Benin was conducted after establishing just the solar-powered irrigation systems, but just these changes brought stunning results to this West-African community; it was found that those irrigation systems brought average 1.9 metric tons more produce per month. In addition, during the dry season, when vegetables are less abundant, vegetable consumption rose from 500 grams to 750 grams per person per day (Stanford University).

Surprisingly successful results like this one in Benin implies that the crisis in Ethiopia will be even more improved if all other implementations such as deforestation prevention and integrated programs by governmental and non-governmental organizations are adopted along with advanced irrigation systems. Once Ethiopia acquires better irrigation and loses fewer trees, the overall environment for agriculture will be transformed. Then, this improved environment will obviously contribute to farmers harvesting surplus of crops, satisfactorily feeding their own families and selling the leftover to gain economic profit. This economic profit will eventually lead them to purchase a variety of foods that will provide enough nutrition for all the members of the family, who will farm for another year of flourishing harvest.

Malnutrition in Ethiopia is an important issue that requires attention and support in the 21st century. While some parts of this globe have tens of tons of leftover food and food garbage every day, other parts of the world are craving for just one wholesome meal a day. Adults who are undernourished will lose the chance to work properly, and therefore, they will be unable to raise their children in a healthy environment. Those children who live with hunger and inadequate diet in their youths will be more concerned about affording their food when they need to safely focus on learning. Consequently, these people will be physically and intellectually inferior to those who had had healthy diet and secure education, losing the opportunity to contribute to domestic and global development. This vicious cycle will go on and on for generations unless people initiate a determined move to alleviate this situation. Progress is being made through well-designed programs such as the World Food Programme's projects and some non-governmental organizations. However, this is not enough. More awareness should be promoted around the globe, and further movements must be instigated. This is not a problem that threatens just current Ethiopia; it is a problem that concerns Earth's safe and sound future.

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