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Education in Eritrea as an Investment for the Future

For many developed countries, the Millennium Development Goals presented by the World Bank seem relatively achievable. These goals include eradicating poverty and extreme hunger, improving primary education, and improving gender equality. For many less developed countries, these goals are no more than an idealistic dream that will not occur in the lifetimes of most of the current population. No place do the Millennium Development Goals seem less achievable than in Eritrea. This east African nation faces periods of drought, and struggles with an oppressive leader who severely limits the rights of Eritreans. Despite the numerous struggles Eritrea faces in achieving the Millennium Development Goals, the nation has a large population of youth that will be able to help Eritrea make progress on the goals. By improving the education of the young people of Eritrea, particularly the women, citizens of the nation will have the capacity to facilitate change in the oppressive aspects of the government, allowing for more developed countries and nongovernmental organizations (NGOs) to help fund further development projects.

Eritrea is a nation located in the part of eastern Africa commonly referred to as the Horn of Africa. This Pennsylvania sized nation has three neighbors: Sudan to the northwest, Ethiopia to the west and Djibouti to the southeast. All three countries share the land characteristics of a highlands ecosystem. To the east, Eritrea fringes the Red Sea with a coastal desert ecosystem. Most of Eritrea is relatively hot and dry, leading to periods of drought and famine, such as the crisis level famine Eritrea is currently experiencing. Since the 1980s, droughts have grown longer and more severe in Eritrea. Drought can be devastating for farmers but it also affects nomads, who, in times of drought, struggle to find grazing area for their livestock. During drought years, subsistence farmers migrate to the city to find food and water, but urban areas do not have the infrastructure to support the additional people. A severe drought occurred in 2004, when the seasonal rains were late and inadequate. Some places in Eritrea received no rainfall at all, resulting in crop failure and food shortages for the large majority of Eritreans who are subsistence farmers and rely on sufficient agricultural harvests. In 2004, over sixty percent of the country's population required food aid, but 600,000 of those in need of food did not receive any food. To cope with lessening food stores, many Eritreans ate their seeds and animals, leaving the farmer without seeds to plant and animals to raise in future years.

The population of Eritrea is slightly under six million, with nearly a quarter of the population living in urban areas that are growing by 5.2% per year. Multiple statistics demonstrate that Eritrea is in stage two of the demographic transition model indicating that the country is experiencing high population growth. Almost half of the population is fourteen or under with a median age of 18.7, indicating that a majority of the population is at or approaching childbearing age, leading to 2.47% annual population growth. Eritrea has a high risk of infectious diseases like bacterial diarrhea, hepatitis A, typhoid fever, and malaria, most likely caused by the fact that 39% of the population lives with unimproved water sources and 86% of the population live with unimproved sanitation facilities.

For the people of Eritrea, every day seems a formidable challenge. Nearly 80% of people in Eritrea are subsistence farmers, and half of all people live below the poverty line on \$1.25 US a day or \$456.25 US a

year. On average, 4.48 children are born to each woman, meaning that family size is fairly large. Early marriages are common, with girls marrying as early as ten. Adding to this daily struggle, only 58.6% of the population is literate, possibly as a result of the little time children spend in school. The average child in Eritrea attends school for 5 years, with boys spending more time in school than girls. Children are responsible for obtaining water, which can be over a kilometer away from the settlement. Specific farm practices vary among the various ethnicities and locations. The most common types of crops that are grown include sorghum, millet, barley, teff, corn, and wheat. Livestock includes goats, sheep, and cattle. The main staples of the diet are bread made from teff, meat, and dairy. Fishing is occasionally seen along Red Sea communities. Pastures and water sites are shared among a clan, which consists of several families. The size of the herd indicates social status.

Prior to World War II, Eritrea was an Italian colony. The British occupied the country from 1941 to 1952. The United Nations announced in 1952 that Eritrea and Ethiopia would become a federation, meaning Eritrea and Ethiopia would act as one country, with each making independent decisions. In the sixties, Ethiopia annexed Eritrea, spawning a thirty-two year struggle for Eritrean independence. After gaining independence in 1993, trouble with Ethiopia flared up again in 1998. The border war ended in 2000, after thousands of soldiers were killed from both countries.

A factor hindering Eritrea's development is the government of President Isaias Afwerki. After being elected by the transitional legislature, he has served as the leader since the country's independence in 1993. Afwerki has no intention of relinquishing power. He has postponed the next election for "three or four decades", since he believes that elections divide the people. Afwerki's government has been described as oppressive. One example is his control over the expansion of business and investment in new industries. A former citizen of Eritrea has a cousin who desired work with an airline company in Eritrea. However, he was prohibited by the government and received hostile threats. Another example of the oppressive government is evident in the policies toward the current drought. The regime censors all information about the drought and refuses help from international non-governmental organizations (NGOs) for the people. The Afwerki regime does not store food as an alternative to food aid, which leaves the Eritrean people to suffer from hunger during periods of drought. Reporters Without Borders ranks Eritrea lowest on the Press Freedom Index, a list that compares freedom of press among the world's nations, even lower than North Korea, which is traditionally associated with tightly controlled media.

Human Rights Watch, an independent organization that monitors human rights, is concerned about Eritrea due to mandatory service in the military, in which soldiers may serve indefinitely. Originally, soldiers joined to fight for independence or the preservation of Eritrea's boundaries, but now, people join the military in order to avoid imprisonment. Soldiers' lives are not much better than the lives of prisoners, since both face harsh treatment, torture, and forced labor. Female soldiers are sexually harassed and if they refuse, they are badly punished. If a soldier attempts to desert the army, the soldier's family can be punished as well. When youth leave home to serve in the military, a shortage is created in the industrial and agricultural work force.

Since the government of Eritrea banned international aid organizations, it is difficult to determine how groups like the United Nations and the World Bank can provide support. There is much support from Eritreans living abroad to remove president Afwerki from office and many have showed their support by holding rallies in various cities across the world. If the people living in Eritrea could connect with

Eritreans abroad, a new government could be established with fair policies that will help meet the other development goals. The subsistence farmers and urban poor must be educated so they can take part in planning this new government. Under a new government, international aid organizations may provide food aid to alleviate hunger and microloans to grow the economy and develop a level of food security.

Banning NGOs may not have harmed Eritrea in the long run. Too much food aid can hurt the agricultural sector. Receiving food at no cost hurts farmers trying to sell food at the market, as they cannot compete with free aid. Outcompeted local farmers may end up abandoning their farms and moving to the city, decreasing the number of food producers in the country. Due to the ban on food aid, Eritrea will not become dependent on aid, giving Eritrea an edge if the country ever does become industrialized. All food will originate domestically, thus building up the agricultural sector.

Limited education, low literacy rates, and lack of freedom of the press give President Isaias Afwerki the opportunity to spread his propaganda. When the president tells his people that international aid groups and NGOs are trying to harm them, the people believe him since they do not have reason to suspect that the president is anything but truthful. The president can further manipulate his people by enticing young people to join the military with the promise of food and money. As a result of limited education, Eritreans do not challenge the president's decision to ban international aid for food, leaving a multitude of people dying from starvation with no immediate relief. Many solutions to Eritrea's food security issues cannot be implemented currently due to President Afwerki's corrupt regime. The government cannot be changed by outside organizations without negative repercussions. The people of Eritrea must be educated in the hope that the next generation can change the corruption in the government. If all of the different minorities and groups in Eritrea are educated, all of the groups can have input as to how the government should be changed, making the government more stable and less corrupt.

The factor that could have the greatest impact on Eritrea's food security is investing in education and training to improve agriculture and technology. Currently, education is not a priority for the government, with just 2% of the GDP spent on education. Eritrea has shortages of skilled teachers at every level of education. Class size in Eritrea is high with a 45 to 1 student to teacher ratio, and with 63 students in an average classroom at the primary level. A 54 to 1 ratio and an average of 93 students per class exist at the secondary level. Many teachers do not want to teach in rural areas due to the lack of services, such as health care, markets, and roads. In the interest of improving the education system, the Minister of Education in Eritrea took a trip to Sudan to observe how they responded to similar challenges to education. The most notable difference in Sudan was the transformation of mobile schools to permanent structures, showing that flexibility is instrumental when dealing with nomadic education. The initiative in Sudan was so promising that UNICEF donated desks and other school supplies to help the developing schools. Providing education to nomadic children in Eritrea is a problem, where seasonal movements of nomadic families impede children from completing a basic education. Many must walk long distances in severe weather to go to school, with daily temperatures reaching above 100 degrees Fahrenheit. Estimates show that over 234,000 children ages 7-11 are not attending elementary school, with particularly low numbers among nomads and girls.

Two similar solutions that could help educate the nomads in Eritrea include embedding a teacher with the tribe and establishing 'trading post' schools. When a trained teacher is placed within the nomadic tribe, he or she can teach the children in the tribe on a regular basis, even when the tribe moves. The teacher

should preferably be of the same ethnicity of the tribe so he or she understands the traditional customs of the tribe, allowing the teacher to be accepted by the tribe. This method of education would be most beneficial to full time nomads who do not travel to the same place regularly. In contrast, the ‘trading post’ school is better suited to seminomadic tribes. In this system, a permanent school would be constructed in the two or three places where the tribe seasonally migrates, as well as several locations on the route between the two spots. Because the government banned NGOs (nongovernmental organizations) which would provide most of the funding and supplies to facilitate education programs, these solutions are impractical in Eritrea at this time.

Females do not receive the same level of education as males. On average, females spend two less years in school than males and males outnumber females in every level of education. Females have a higher dropout rate than males. Lack of education can limit a mother’s ability to care for herself during pregnancy and care for her child. The first thousand days of life, from conception to age two, is the only period in which the effects of under nutrition can be reversed. During this period, it is critical for mothers to receive enough calories to support herself and the baby, and vitamins, such as folic acid, iron and vitamin A. After the baby is born, it is important to breastfeed the baby for about six months. Many women living in rural villages receive a limited education, so they base their care on tribal superstitions, which sometimes can harm a growing child. With little food and water due to drought and tribal superstitions guiding child rearing, children in subsistence families sustain effects from undernourishment that can hinder their development.

Since women in developing countries such as Eritrea are primarily responsible for meeting the basic needs of a family, educating women is the best way to improve daily living conditions for the community. With more income and increased agricultural production, women can properly feed their children and themselves. Studies show that when women have access to the necessary resources, families are healthier, more children go to school, agricultural production increases, and income increases. For each completed year of a mother’s formal education, a child will stay in school four to six months longer.

Once women have the knowledge to improve their families, they need resources to facilitate agriculture in their community. Financial resources can be provided through microloans like the Hunger Project’s Microfinance Program, which gives women easy access to credit and training and stresses the importance of saving. The Microfinance Program is implemented in two phases: direct credit and rural bank. In the direct credit phase, a Revolving Loan Fund is given to a community that has loan committees: one that manages the women’s portion and another that manages the men’s portion. After four years in the direct credit phase, the operation can apply to become a rural bank, if it meets the government’s criteria for recognition. The Hunger Project helps the bank for the first two years, after which, the bank should be self-sufficient. To help encourage women’s leadership, only women participants can be elected to the bank board in the direct credit phase. Giving women loans instead of donations helps women retain a sense of pride when they pay back the loan. The loans also treat women as entrepreneurs, giving them a sense of independence. Despite the current success, the Hunger Project cannot invest in Eritrea because the government has banned all NGOs.

Educating women is one way Eritrea can increase food security for families. Improving the level of agricultural production during drought periods will allow children to remain in school longer, giving the next generation the tools needed to further innovate drought resistant agriculture. As Eritrean students

increase their level of education, they can conduct research to look at Eritrea's specific climate patterns and soil structure to develop an effective system to use and store rain from the rainy season to irrigate crops. One method to improve agriculture during a drought is to invest in drip irrigation systems. In certain places in Eritrea, the government has invested money to create micro-dams to support the irrigation systems, giving farmers the ability to have three farming seasons a year instead of only two and helping farmers to have a yearly food supply. Drip irrigation systems encounter problems such as the destruction of the system through clogging and mechanical damage by insects and rodents, and damage to the soil by increasing the salinity and clay content. The small diameter of the emitter of the drip irrigation system often clogs from root penetration, sand, dust and rust. Educated Eritreans will have the knowledge of machinery to fix the emitters, improving the functionality of the irrigation systems. Also, educated Eritreans can implement appropriate pest management systems to reduce damage to the irrigation system via rodents and insects. Through their studies, Eritrean students will have a vested interest to apply their knowledge to the success of Eritrea.

Native Eritreans can be educated with the skills needed to increase food production and processing, which would augment the economy. Eritrean researchers could develop a low cost way to preserve food using plentiful resources. An example of one such innovation is the Zeer pot fridge, which uses clay pots and sand to help extend the shelf life of perishable food items. Access to a simple form of refrigeration helps subsistence farmers make their food last longer. This is especially important in Eritrea in times of drought because it enables people to preserve food from the harvest periods. The Zeer fridge is a practical solution to short term food preservation, but is insufficient to keep food fresh for months at a time. To cope with long periods of harvestless drought, Eritrean researchers could develop methods for processing local food to extend the shelf life. Food processing research and manufacturing could provide many jobs for Eritreans and provide an opportunity for skilled professionals to remain in their native country while still doing meaningful research.

An engineer in Eritrea could help to organize projects to build paved roads and bridges that would help small-scale farmers bring their goods to the market in urban areas, thus providing urban dwellers with food and farmers with more money to buy food. Entrepreneurs and investors will see the benefit of a multitude of workers willing to work cheaply, bringing in more industry, providing people with more jobs, and strengthening the economy. Teachers would be more willing to travel away from the city to teach as a result of improved infrastructure and economy. Currently, many educated young people see no future for themselves and leave the country if possible, creating a 'brain drain' situation that has seen the exodus of the brightest people from Eritrea. President Afwerki considers the people who leave Eritrea to be westernized and prevents them from investing back in the country, thus taking away more talent and money from Eritrea. Despite the many possibilities that could arise through Eritrean based research, these proposals cannot be achieved in the current political climate.

While Eritrea clearly needs to improve its educational system, it has made gains since the early nineties. Some of the indicators of education for the Millennium Development Goals are literacy rate, primary completion rate (finishing fifth grade), and total enrollment. The percentage of the population that is undernourished has remained in the 60-70% range from 1990 to 2009. A realistic goal for Eritrea is to bring this percentage down to the 45%-55% range by 2015. The second development goal has seen some improvement, but numbers are still far below the levels in developed countries. The primary completion rate for primary school was 48%, in 2009, which is up from 23% in 1995. The World Bank provided

these statistics but did not specify why such improvements were occurring. A realistic goal for Eritrea is to have the primary completion rate to be 70% by 2015. In a small village of thirty children, this would mean 21 instead of 15 children completing fifth grade. It is realistic to believe that in five years, six more children from each small village of thirty will finish primary school. The total enrollment also increased from 20% in 1990 to 37% in 2009 and a good goal would be 55% by 2015. Continuing on the thirty children model, 17 children would enroll in school as opposed to 11. Again, it is realistic to believe that six more children in every village will enroll in school in five years. Even if only one more child from every village in Eritrea completes primary school, this would be a significant portion of the population who are now being educated. These children now have the tools to enable change in their own country.

The World Bank has eight Millennium Development Goals for the countries it serves: eradicate extreme poverty and hunger, achieve universal primary education, promote gender equality and empower women, reduce child mortality, improve maternal health, combat HIV/AIDS, malaria, and other diseases, ensure environmental sustainability and develop a global partnership for development. Eritrea has improved greatly in reducing child mortality rates and has low carbon dioxide emissions and low use of forest resources in the environmental sustainability category. All other categories continue to be a priority. It is unrealistic to think that Eritrea can bring its level of development to those of more developed countries by 2015. The main focus should be improving the first two development goals: eradicate extreme poverty and hunger and achieve universal primary education. Eritrea has not changed much in the last twenty years to eradicate extreme poverty and hunger.

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