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Drastic Climate Change and Prolonged Drought Issues Face Ethiopia

Ethiopia has always been a poor country, but due to climate change and prolonged drought it is now extremely poverty-stricken and its people are deprived of many of their basic needs. Ethiopia is of high elevation situated on a central plateau divided by the Great Rift Valley. It is a country that is supported by many rivers. The Blue Nile has its source in the Ethiopian highlands. The mountainous region of the country is centrally located sloping down to drier flatlands on the eastern edge. Most farms are located between five thousand and eight thousand feet in the temperate climate zone. Ethiopia is known for its outstanding coffee. After 1997 studies have shown a steady decrease in rainfall amounts in the months from March to September, the typical growing season of many crops. Yearly trends do not always depict this as an annual decrease. Extreme flooding in the non-growing seasons are to blame for these normal-looking statistics. If trends continue water shortages will result in deepening poverty and food insecurity. This would be devastating in a country where over eighty percent of the population is rural. Typical families in this country are rural farming families that sustain themselves through basic agricultural practices. Many are pastoralist livestock producers, others crop farmers. Both are poor to low- average paying occupations. Over seventy-seven percent of the population survives on less than a United States currency of two dollars a day. Almost almost half of that population lives on a meager one dollar and twenty five cents a day. These are average wages for a person working in Ethiopia. On average a typical family has five or more children and the mortality rate for infants is approximately eighty-one per one thousand live births. The women and children are also very much involved in the daily activities of the farm life. Some women even run their own farms and make a living for their families as the sole bread winners of the household. These farms produce very little crop variety, and some have only about two small fields. In recent years, certain potato varieties have done well with the lack of rain and shortened growing season, but now with even less rain they can no longer grow. Farmers make little to no profits on the harvest and struggle to provide enough food for themselves and their families for even four months of the year. If the effects of climate change and drought are resolved, the situation would lead to better food security, a rise in the economy, and a better well-being for the people of Ethiopia.

In the past year, food insecurity in Ethiopia rose to effect about fifty-one percent of the population. A farmer that cannot produce enough to feed a family can definitely not make a profit on a harvest overall. No one should have to be faced with that moral decision. Do I feed my starving family now or try to make a profit for better financial security later? Most farmers try to feed their families first. This also effects more urbanized areas in the country. Since few harvests actually make it to market, it is hard to purchase a needed meal there as well. When the amount of crops available are low this makes them more valuable and forces the price up. In Ethiopia the crop prices are so high, that no one can afford to buy them. In a vicious cycle farmers cannot afford to buy more seed and others cannot buy the food because of the price.

Women and children are most greatly affected by the situation. A child attending school would be burdened with the knowledge that his family is struggling, while he receives an education, a rare extravagance in Ethiopia. Most parents however, will keep the child home so he may search for trees to be used as an energy source. This situation will greatly hurt the future of Ethiopia. With a population of eighty-five million, approximately forty-three percent of the population over the age of fifteen can read and write. The children continue to be under-educated and this will make the problem harder to fix in the upcoming generations. The women are also burdened with a heavy load. Women do much of the fieldwork alone or alongside their husbands. These weather conditions create a much greater workload for women as their daily chores are harder to accomplish. Their normal jobs of cooking, cleaning, and tending to the crops are magnified. They also face the problem of what to eat and prepare for meals when

there is nothing. The answer to that question is usually potatoes left over from the small crop from past seasons.

Another part of the population that is greatly affected by the drought are the pastoralists. Pastoralists are people who pasture livestock for a living. Pastoralists make up a very large part of the rural workers in Ethiopia alongside the farmers. Many of the pastoralists of Ethiopia raise cattle, which are a good meat-producing animal that does well under average climate conditions. The drought has effected mainly their ability to produce enough grass for their livestock. The heat also takes a major toll on the livestock's health as well. With the rising temperatures and lack of moisture the cattle become easily overheated. This can lead to loss of life and decreased body mass, as well as a lessened tolerance to illness. To try and combat these issues, those who can afford it, are switching to more weather-tolerant livestock breeds such as camels and goats. This is a difficult change to make because very few can afford the expenses needed to make the transition.

Another factors that will effect the the issue of poverty and crop deficiency in Ethiopia is the increasing energy demand. Small scale forestry is the main way of producing materials for burning to create energy in Ethiopia. This deforestation significantly reduces the number of trees in the area which can, in turn, produce typically warmer climates. There is also a lack of oxygen flow created by decreasing tree populations. This combined with drought weather, depletes the amount of moisture in the air. A lack of trees can also cause the air to become filled with too much carbon dioxide which is unhealthy to inhale in high amounts. An increase in the amounts of carbon dioxide also hinders the plants' natural ability to filter out other harmful chemicals in the air.

Unless the climate changes, the problem will not fix itself. If rain amounts follow the current trend, they will continue to decrease. Some farmers reported only one rainfall of less than an inch in the 2010 growing season. When the rains do fall, it is nearly impossible for the dry, stone-like ground to absorb the water. These rains often come as a hard pelting rain in short bursts. This causes flooding of the rivers in the area and further damages the crops. It flattens the already brittle fields and produces flash flooding which creates many other expenses. It also washes away any potentially productive soil and further increases the flood risk as the thick silt on the river bottom deepens and leaves the water no where to go except over the banks.

In addressing this problem, there are several things which can be done. Different ways to recondition the soil must be considered. One way to put back the nutrients is to alternate crops. In the midwest region of the United States, we plant a field with a corn crop one growing season which takes a large amount of nitrogen from the soil. We then plant the field the next growing season with a crop of soybeans to replenish the soil with nitrogen and give the soil time to absorb some of the nutrients. Minor improvements could again make the potato and other drought-resistant crops viable again. Eventually the original crops could be reintroduced and made profitable.

An alternative to the meager rainfall that could be implemented is irrigation. Water could be pumped through a pipe system and added in controlled amounts to the crops during the growing season. This could also be used to help maintain grass year round in the pastoralists' fields. The issue to be addressed first on this matter would be where to get the water. There are plenty of rivers running through Ethiopia that could be easily adapted to fit these needs, though one must consider that wherever the pipes start taking water from along the rivers, everyone down stream from that point will have their water supply significantly reduced. This could create a different problem that would require attention.

In regards to the issue of energy production, Ethiopia needs to work on reforestation and forest conservation. This must be implemented as soon as possible to ensure that the new saplings can survive. If the drought becomes significantly worse, then the soil will be too hard and dry to support new growth.

The current surviving forests need to be preserved in case of this occurrence. The mature trees can more easily adapt to changing climates. There must be a program in which communities are ensured that there will be a positive return for them if they maintain their forests. We need to show them how alternative resources can be used. They need to build on already established good habits such as conservation practices already in existence. Ethiopians will need to be personally informed and believe that there are people who care about their futures. We need to make the people see the importance of planting new trees and protecting the existing forests, and explain to them the long term benefits. Solar and wind energy sources offer another solution to energy production. Solar energy, in particular, benefits countries in Equatorial regions.

Another helpful way to put the farmers back on track is to establish a loan system. We need to create a low-interest banking system in which people in need can take out a loan and deposit their savings into an account. This account will gain interest and will eventually accumulate enough to pay off the loan. When the farmers are back on their feet they can keep the account and continue using practical saving habits. This would prove an easy way for them to keep track of expenses for crops and of profits as well. The money transactions would need to be handled through a reputable banking system or company and could ensure better money management for the people and government alike.

The best way to get to know a problem is at the source, the people. The Ethiopian government should play a large part in the organization of the resources, though other groups such as the United Nations and Oxfam. Committees would need to be appointed to carry out the tasks. These committees should consist of: a team of meteorologists and climatologists to conduct studies in the field and study climate trends; fundraising teams to help procure money, grants, and donations to offset the costs of the changes; country leaders to oversee development and implementation and to give input into specific aspects of the country's culture as well as to pass legislation and make decisions for the country as a whole; diplomats and public speakers to help alert the media and stimulate world-wide participation; a panel of conservationists, extension agents, and agronomists working to solve some of the soil and water problems; and a panel of farmers, pastoralists, and poor urban-dwellers to give insight into the daily challenges which need to be properly addressed and prioritized.

As well as creating committees to fix the problem, actions to maintain the consistency and longevity of the solutions must also be taken into account. In the United States, we have agriculture classes in school and groups such as Future Farmers of America. We are able to learn about ways to better the future of our country through agricultural techniques to insure better crops and livestock. We learn how to use those skills to become leaders and better citizens. Ethiopia could greatly benefit from such programs. It would better the future as well as improve the curriculum in the education system. More children might feel the need for an education if classes to improve their future livelihoods were implemented. This would eventually create a stronger economy as it opened up more job opportunities for educated people. Colleges would be highly beneficial to an area of educated people. Colleges with degrees in agronomy, animal sciences, and food nutrition or dietary studies would be able to take them on to higher education opportunities and improve the country as a whole. Children are every nation's future and must therefore be nurtured and given every opportunity available to succeed. Educated people are better citizens, employees, politicians, parents, and family leaders.

The farmers and pastoralists of Ethiopia as a whole should have the opportunity to be educated about the best agricultural practices. Extension services should be implemented throughout the country to better educate the people on how to conserve resources, be more efficient, and make a better profit. The services provided now are only provided for the more financially well-off. The agents are often under educated themselves. These services should be made more cost-effective and should be led by educated and reputable groups. Other ways to study the issues would be to have more in depth studies done at least once a year in which the Ethiopians themselves can give their own input.

The problems Ethiopia face are too great to be accomplished by only the local efforts. Global support will be necessary. One example of international cooperation is that the United States Agency for International Development recently teamed up with the World Food Programme and local farmers to produce chickpeas and develop local enterprises to use the crop to produce a food supplement for malnourished children in Ethiopia. "What's different about this is that the need on the humanitarian side is dovetailing so perfectly with the business plan on the corporate side" said the World Food Programme's director Nancy Roman. The first crop of chickpeas will be harvested in 2012. It is hoped that six hundred and fifty tons will be harvested that year, growing to twelve hundred tons in 2014.

Ethiopia is facing widespread loss of agricultural productivity due to changing climate and drought. This puts a large amount of strain on the well-being of the population. Nutrition and health have suffered, as they are not able to produce enough to make a profit and sustain themselves. If the issues faced are not resolved then Ethiopia will experience extreme population decrease due to lower birth rates and higher death rates. It is time that the international community comes to the aid of Ethiopia in the form of low interest loans to the farmers and rural workers. In addition, the local extension services need to be redesigned and staffed by qualified people. Educational institutions need to focus on classes in agronomy, horticulture, and animal sciences. Both extension services and educational institutions need to focus specifically on reconditioning the soil, water and soil conservation, introducing drought-resistant crops, and erosion control. New energy sources need to be developed such as solar and wind, and traditional resources managed more wisely. The involvement of the Ethiopian people is crucial to the success of these solutions. If the effects of climate change and drought are resolved, the situation would lead to better food security, a rise in the economy, and a better well-being for the people of Ethiopia. It would also have many other unconsidered benefits. Food security is the main goal here. Once properly nourished and with the knowledge that no matter how small or how poor-quality, there will always be food on the table, they can begin to move on and move ahead in more advanced ways of thinking. The economy would eventually become better as markets improve because of the increase in harvest yield. These two factors would finally allow the third to gradually take its place. A country's well-being is important. The better the moral of a people, the easier it is for the majority to cooperate when positive change is taking place. That simple peace of mind is something that more fortunate people take for granted, such as the fact that our children do not have to go to school hungry, or that they are able to attend school at all. The farmers must first find some inner peace with their misfortunes and be able to cope with the emotional toll brought on by the drought. Gradually they will be able to accept and find happiness when better years begin. This would be a great step in showing what global united with local efforts can do to help people in need.

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