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Ethiopia: Factor 11

Ethiopia's Simple Solution to a Big Problem

Ethiopia has productive farm land that is ideal for livestock and vegetables, unfortunately poor farming practices and deforestation has put the land in threat of desertification. When education is difficult to provide and the population is made up of mostly small share holder farmers it is a challenge to improve food security.

Ethiopia's economy is rising, this glimmering sight of hope and optimism could be the beginning to improve the welfare of Ethiopians if it is matched with correct long term agriculture developments and investments. Any assistance given to Ethiopian farmers needs to take into account the lack of infrastructure, education, and use of modern technologies.

Most families consists of one father and one mother as with an a high average of children per household of five to six children ("Family Planning: Ethiopia"). The common Ethiopian diet is mostly cereals such as, sorghum, maize and teff, as well as root plants like potatoes and sweet potatoes. Meat consumption is low despite the abundance of livestock being raised in Ethiopia ("Federal Democratic Republic of Ethiopia"). Ethiopia has a literacy rate of sixty percent ("Education in Ethiopia"). Almost eight million Ethiopian do not regularly attend school. The most common cause (sixty-nine percent) for absences is because the parents do not have the money to pay the fees. The second issue is limited access to school materials required at schools, this represented 29% of the absences ("In Ethiopia, better education for a better future"). Ethiopia is known for its exports in livestock and grains ("Agriculture in Ethiopia"). A bad agricultural marketing system contributes to the difficulty of marketing products. Ineffective transportation of goods results in spoilage. Bad production methods result in poor product quality. Limited access to rural housing results in poor living standards. Increased amount of draughts have affected the output of crops and land ("Rural Poverty in Ethiopia").

Small share holder farmers make up most of the work force in Ethiopia they typically don't have direct access to the marketplace. The lack of infrastructure cripples the farmers ability to market crops for maximum profits. Most smallholder farmers make up the poor in Ethiopia. The trading of goods is very ineffective and ends up making the families receive less money for their labor. Since the transportation is bad it makes it very hard for farmers to make a living from farming; this is why farmers make up most of the poor. Since quantity and quality of land are what determine the price and output of crops the degradation of land is very taxing on the small farmer. Only fifteen percent of the workforce engages in wage labor the other eighty-five works in subsistence farming which is a very unreliable and unstable source of income (Highland Restoration in Ethiopia).

As our world has evolved, we have overcome many problems that have stood in our way to becoming better. For example, we are actively looking for solutions to fixing our water supply, the energy crisis, and world hunger. Something that does not get enough attention is world hunger. More than eleven million children die each year from preventable health issues such as malaria, diarrhea and pneumonia from poor water or unsafe foods. Most illnesses that impact the children could easily be prevented by improving food safety, food nutrition and access to safe nutritious foods. A staggering ninety-eight percent of world hunger occurs in countries listed as developing. Those who go hungry either do not have sufficient land to grow food or money to purchase it. Ethiopia has a lot of potential to solve this problem with thirteen percent arable land (Africa: Ethiopia). This is a great opportunity for Ethiopia to utilize their land, because twenty-eight percent of all child mortality in Ethiopia is the result of malnutrition (10

Things Everyone Should Know About Hunger In Ethiopia). A simple and attainable solution is to create an outreach program that helps develop community gardens and develop horticulture, food preparation, and nutrition classes for the locals.

Why have these ideas that seem so simple not been implemented in Ethiopia before? This is simply because they lack consistent and stable education and technology to follow through with teaching each kid. Resources are also very limited; farmers do not have access to modern fertilizers and pesticides farmers in developed countries. Most of Ethiopia's farmers lack the tools and machinery to farm foods with the efficiency of farmers in developed countries. For most small shareholder farmers their technology isn't much more advanced than machetes and wooden plows. Without these tools and modern technology, it is almost impossible to increase their crop yields. In fact, food production has actually decreased since the 1960's (Gish, Cultures of the World: Ethiopia). This is most likely due to the fact that the population is steadily increasing. With more people for the land to support, it poses a challenge to sustainably manage the land for long term production. Additionally, more lands that are not currently in prouduction will be converted to farmlan. Often times the lands thare converted end up being forests, wetlands, and watersheds, if these lands are not correctly transformed into agricultural use soil erosion, and water pollution are an extreme risk. Ethiopia's climate is known for monsoonal rains, which challenges all areas of farming—especially clean water and erosion proof soils. Since agriculture supports the Ethiopian economy, droughts it is critical for the people to have a stable and longterm land use plans. To best serve the Ethiopian people the infrastructure must be taken into consideration, conveniences such as transportation, refrigeration, and distribution methods do not exist in Ethiopia. However, if each small village had a well engineered and implemented community garden with the correct crops, they would need less help from neighboring villages and could support themselves.

One benefit of these gardens and horticulture classes is the education the community would be receiving. Adults would not be the only group of people learning about the gardens, but also children. Traditionally, Ethiopians live in large families. This should make it easier to get more people involved in this project. It is necessary that we get this information out to as many people as possible because it can provide the people of Ethiopia with non-expensive, nutritional food. By providing Ethiopians with educational classes, they now have the opportunity to self-sustain their community with gardens. This will give them more food security. The motivation for this community to take care of their garden is that is supplies them with food that they do not have to import. In this country, women are typical left to tend to housework while the men go to work. This is why we will be directing these classes towards women, though the classes are offered to everyone. Also, by teaching children, this will influence the children to grow and produce crops because of the knowledge they were given in these classes. Hopefully, by doing this, we ensure a better future for the food security of Ethiopia because the future generations have the proper knowledge to support their families and their country.

The second benefit is that these gardens are a cost effective way to provide Ethiopians with a constant food source. Due to Ethiopia's dry climate, the garden would grow crops with deep root systems so money would not be spent on water. Deep root systems allow these plants can take water from deep in the soil, so they do not need to be watered as much. For example: tomatoes, squash, melons, and beans will be grown (Scott, Some Vegetables Require Less Water Than Others). More specifically, genetically modified organisms (GMO) such as dark star cucumbers are a great idea because they are bred to survive in dry climates (Scott, Some Vegetables Requie Less Water Than Others). These crops were also chosen because they provide many nutrients. Because Ethiopians' diet consists of mostly grains, the nutrients will strengthen their bodies. The tomatoes and squash provide vitamin C, the melons provide vitamin A and antioxidants, and the beans provide protein. It is crucial to give Ethiopians antioxidants because this will help prevent disease and keep their immune strong. The protein is also very important because this will give their bodies' long lasting strength. Another way the gardens are cost effective is due to the use

of integrated pest management (IPM). This will help save costs because we will not need to purchase insecticide for them. Also, the price of hiring someone to teach these classes is very high. Instead, volunteers will be offered an opportunity to educate them. This way, the educators are cost free. The idea is that, eventually, the gardens and classes will pay for themselves and start to actually save money.

Integrated Pest Management (IPM) will be a very important part of these gardens. One way IPM will be used is by planting pest-resistant varieties of crops. For example, Park Whopper Improved tomatoes are resistant to Verticillium and Fusarium wilt. They are also resistant to tobacco mosaic virus. All the diseases mentioned are common problems for tomato growers. Another way of IPM that will be implemented will be the use of diatomaceous earth. This is a natural, organic garden pest control. It is spread over the top of the soil, and when insects crawl on top of it, it scratches the insect. Once the insect is scratched, it becomes very dehydrated and dies. This is a very effective way to get rid of unwanted pests. The best thing about diatomaceous earth is that it does not harm earthworms (Integrated Pest Management). This means that the worms may still aerate the soil to keep the plants oxygenated. Natural Control is also a good way to keep pests out of crops. Pests are used to an environment that is undisturbed. A simple way of disturbing their habitat is to rake the soil frequently. IPM is not just one method of pest management. It is a serious of steps that keep pests and unwanted diseases away. IPM not only makes the produce healthier, but it also saves money and protects the environment.

The last major benefit that this offers is the healthy lifestyle that comes from growing your own fresh produce. This provides residents with a little bit more food security. Ethiopian's diets consist of mostly grains, tubers, and root crops (Federal Democratic Republic of Ethiopia). Unfortunately, this means that these people do not have a varied diet. They are very limited to the kinds of food they eat. This means that malnutrition is very common. Two out of every five children born suffer from stunting. Stunting means that the child is short for his or her age and their body does not grow to its full potential (10 Things Everyone Should Know About Hunger In Ethiopia, 2013). Stunting happens when children miss out on important nutrients and proteins while in the womb or during the first five years of their lives. If mothers were provided with adequate nutrients, the percentage of kids with stunting would decrease dramatically. Stunting may not seem like a life threatening illness, but stunted children achieve one year less of school than normal children because of limited brain function. If we eliminate stunting by giving the children the right nutrients they need to grow, this will help children receive a better education. As an effect of better education, hopefully Ethiopia will begin to invent technologies of their own.

Since 1980, Ethiopia has had one of the shortest average lifespans, lowest literacy rates, and highest rates of infant deaths (Fradin, Enchantment of the World: Ethiopia).This solution has the potential to solve all three of these problems. These gardens and educational classes not only provide a great opportunity to secure a nutritional food source, but also give the community a chance to learn more about these plants so that they can become more efficient in producing their own crops. Ethiopia is a great place to implement this because they have land that can be used for growing fruits and vegetables. Not only is it important to educate as many people as possible, but it's also simple! It is important that we utilize every chance we get to improve our community. It is our responsibility to share our knowledge and leave our world a better place than we were brought into. Though many problems face the world today, it is important to take one step at a time to better our local and worldwide communities.

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