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Kenya

Global warming, disease, war, both natural and human made disasters are only a few dilemmas that need our attention as inhabitants of this world, our home. September 11, 2000, better known as 9-11, revealed terrorism as another significant issue. A few years later, hurricane Katrina shook the United States leaving New Orleans in a devastating condition. Problems within the U.S. are ongoing, but there is an even bigger problem that many people don't consider. World hunger is an ever-growing issue due to many factors. Countries such as ours are fortunate and can depend on a stable work force and social aid for putting food on the table at night, but sadly this is not true for many less developed countries. In some countries many sit around the table at the end of the day with little or no food. To date, one out of every three kids suffers from malnutrition and go to bed hungry. In countries such as Kenya, Africa, this is the case. There are many factors to contribute to Kenya's condition including educational deficiencies, deforestation, poor farming techniques, the families in Kenya struggle to find day-to-day agricultural success.

Education as we know it is a critical part of our culture, development, and future. We may follow the traditional path of elementary through high school and then possibly college. In an educated Kenyan family there are typically two to four children, all receiving schooling. Under this circumstance a family can provide for themselves economically. In contrast, the uneducated family has anywhere from five to eight children. In these families children are not treated as the future but rather an extra hand in earning income for food.

Education is essential to change. Problem areas such as deforestation and poor farming practices are two main areas that could benefit from increased information, demonstrations, and useful education. A promising approach towards increased education would be one that brings together youth and adults within communities to share and implement new ideas.

In Iowa I am part of an organization known as FFI or Food & Fitness Initiative. This organization was started and funded by the Kellogg Company in order to combat the obesity rates and improve nutrition in the United States. Each of four targeted states are funded and given directions to create goals to make a difference within communities with hopes of expansion throughout the state. Each state involved has developed ideas unique to their region and situation. Though plans are diverse, all is focused around one key idea, Youth Adult Partnerships or YAPs. This collaboration, between young and experienced, embraces needed cooperation and equal voice. For those of us involved, we have found strengthened relationships and results. To increase change for the future of Kenya, new agricultural practices are essential. It may be advantageous to bring youth to the forefront of needed change. Through youth and adult agricultural education sessions and demonstrations, the partnership will better both small communities and Kenya as a whole. Meeting with groups of people, young and experienced, improved communication and leadership will help build relations among the people, while solving farming issues. Through these meetings, demonstrations can be done to share possibilities.

In addition to adult and youth agricultural meetings, partnerships with fertilizer and pesticide companies and Kenya's government, would be essential. Assistance awarded to farmers, programs developed, with support of these companies, desired agricultural improvement would begin. Information can be shared to educate farmers on responsible and minimal use of chemicals. Demonstrations can be done to show various practices. For example, containers can show harvested maize; one with organic pesticides, the other with chemical pesticides, and another with maize normally grown without any chemicals.

Demonstration examples may also include common insects such as the grasshopper. After seeing the data, the product, and finally the insects avoiding the treated maize the hope is that farmers will be encouraged to begin to alter practices. Willingness to change demands support. A program that could provide farmers with enough fertilizer, pesticide, for a half an acre of their land would be a great start. Once harvest comes along and they are bringing in as many bushels in one-half acre as they are in two acres without the applied fertilizers and/or pesticides they will realize the benefits and see profit. Once seeing success they may realize the potential and benefit of applying this practice to their entire crop. Since money is an issue for small farmers in Kenya, they will benefit by harvesting surplus grain. This is also good for the fertilizer and pesticide companies because for what little they are going to give away they will be bringing in new customers and revenue. By introducing Youth and Adult Partnerships and partnering with fertilizer and pesticide companies there can only be great rewards and promising results for everyone alike.

Pests are a major problem in Kenya. In Kenya's highlands insects are responsible for 42-57% crop loss in maize and beans alone. Pesticides would sharply decrease this percentage but since organic farming is the largest agricultural practice in Kenya, and Africa a whole, pesticides are not used largely because of cost. Utilizing cost effective and environmentally friendly organic solutions is possible. One method for pest control is the combination of soap, ground up chilies or chili powder, and vegetable oil, which is incredibly effective at diverting pests and also other animals that threaten crops. The ladybug is a natural predator of the aphid, which damages crops on a large scale. Ladybugs are effective at neutralizing the problem while not becoming a pest to the farmers. Natural predators are an effective method which shows results. However, in dealing with natural predators one must be both careful and very respectful of the new organism to avoid any chance of the new organism over taking the native species.

YAP's program is designed with the intention of meeting with many individuals at once and going through a forum process that will open their eyes. Kenyan people are not ignorant. The reason that they don't alter current practices focuses on money. Organic farmers may not apply fertilizers or change ways because of their income situation. According to an interview with Tanzanian citizen, Innocent Lyimo, the government is willing to try new things as long as it is justified and shows promise.

Deforestation has been one of Kenya's biggest problems over the years. Losses of large forests such as the Mau, the largest indigenous forest in East Africa, have direct and immediate effects. Deforestation has caused 6.5 million Kenyans to suffer from starvation and affects 15 million Kenyans as a whole. The rivers flowing out of the Mau were main sources of irrigation and now seven major rivers are drying up or totally dried out. The lack of water leaves livestock struggling to survive and threatens the farmer's livelihood. This condition worsens daily. Until stricter laws against illegal logging or efforts to replant trees are implemented, Kenya will continue to suffer. The current logging industry in Kenya has created a situation that is not advantageous to the land but puts food on the table.

A program for educating logging companies is essential. Trading lumber creates income but could easily be expanded to create a replenished country. For every tree that is taken, two saplings must replace it. In this way the forests can start to come back, which will increase rain fall, soil quality, and allow loggers to stay in business and to continue providing for their families. These people want options, support, and change.

While deforestation is a major issue in Kenya, it is also an issue that will one day affect us as a nation and also world because of global warming. The rain forests in Africa are one of the largest carbon dioxide consumers in the world and every day more and more of this precious natural enemy of global warming dissipates. Illegal logging is one of the most profitable careers in Africa due to the constant demand for lumber and because it clears more farm land for people who desperately need food and income. Bad farming techniques also allow carbon and nutrients in the soil to escape. Without carbon crops cannot

grow properly.

Planting trees helps reverse carbon loss. One idea is to plant trees into square plots within areas designated for crops. During planting four trees are planted a square grid with the crops in the center, each plot being from a half an acre to an acre. By using this model farmers gain better soil quality, soil less prone to erosion and a harvest of fruit. Another useful practice includes planting cover crops, which protect the soil from erosion during normal growing seasons while using nutrients such as manure, compost or biosolids to fertilize crops. From this outlook the square tree plots isn't such a far-fetched idea, and with fertilizer the land could quickly turn around in just a matter of years. Two main trees to be used are the tamarind and fig tree. Both of these trees are extremely resilient in degraded soils and don't require large amount of water such as dates and other trees. They also do very well in semi-dry and aired climates as well as in humid tropical and both are sensitive to frost, which is not a problem for Kenya. There are also other benefits with these to trees for example the tamarind trees fruits have been used for medical purposes such as malaria, fever gastric and digestion problems and are also known better yet for being a diuretic and laxative. Figs are much of the same and when dried are rich in fiber, copper, manganese, magnesium, potassium, calcium, and vitamin K. In this situation both have needed nutrients for humans and also benefit the soil as well.

Money is the main issue influencing ineffective farming habits. The typical small Kenyan farmer farms two hectares, each hectare is about the size of two football fields, and these farmers are also responsible for 75% of Kenya's total production. The main crops that are grown in Kenya are cassava, biggest crop, maize, second biggest crop, beans, potatoes, sorghum, fruit, excreta. Farming practices used consist of breaking the soil, which allows crop residue to return to soil and also bring up rich nutrients that young crops crave. Sadly though this also cause the soil to become aerated and blow away. Desertification is a large problem because of this. Currently less than 8% of Africa's land is farmed, less than 20% is suitable for farming and 80% is considered unfit for crops. Income for 56% of Kenya's is less than one U.S. dollar today and for most of their population food is raised, grown, and/or bought in local markets. As far as community gardens go, they exist but it is not a practice that is largely found.

One of Kenya's main agricultural problems is its soil, which is red, arid or contains clay. Both of the soil types have its pros and cons. For example, red soil is good compared to clay because it allows for water, nutrients, and oxygen to get into and move through it with ease. Clay's particles and sentiments are much closer held together in a solid chunk which makes the nutrients and supplies needed for healthy crop development to stay at the top of the soil. This makes it difficult for deep-rooted plants to obtain what they need. The down side of red soil however is that its particles are too far apart which causes the nutrients and water to just drain straight through the soil and the plant only has a limited time were it can actually absorb what it is given. For red soil we would for the first year break the soil and mix into the soil a compost mixture between straw and animal manure. Another option is bio-solids, which is incredibly rich in nutrients and easily combined with other organic practices, such as compost. This provides a surplus of nutrients and nitrogen from decomposing straw returning carbon to the soil while holding it in place, preventing loss of nutrients. After just a few years of doing this the ground would be rich and fertile. Afterwards, the farmer would focus on practices to keep the rich soil in the topsoil instead of drying out and blowing away in the winds creating new/adding to previous deserts.

If attention is not given and ways changed, Kenya will continue to struggle to provide for its people. This will not only affect Kenya but continued challenges and stress may influence relationships and support in other areas of Africa as well. There is hope through the government, because they see that these areas are problems and want to see change. This continues to be true among the people as well. They want to provide a better and healthier future for their children and loved ones but the possibility of a worsened situation scares even the strongest people. This fear contributes to the lack of change. There is one ever-growing truth; Africa's forests are disappearing, the 20% of farmable land is rapidly going arid and

turning into desert, and most of all more and more people and children are going hungry every year. The only way to possibly turn this around is by educating the people with the facts, exploring history to find the problems and correct them so that they may better their future, create partnerships/relationships to connect the people. Finally, get the government and other big companies on board to provide support and resources to make it happen. Once everyone is working together, not for profit or recognition but for the betterment of Africa, the country will continue to provide for themselves and their families in more effective ways. It may be true that Kenya has some time before complete devastation actually will occur, but by acting now we can support a new direction in the form of partnerships and sustainable agricultural practices resulting in better farm practices and improved soil conditions. Change takes time; support and planning but we have the ideas, the support, and the initiative. Now is the time to act.

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