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Guatemala: Agricultural Education for Food Security

Guatemala is a mountainous country of rolling hills, deep river valleys, and many volcanoes. The fertile country of temperate climate and rich volcanic soils is the home to people who suffer from malnutrition. Approximately 75 percent of Guatemala's population is living below the poverty line ("An Assessment of Poverty"). The land in Guatemala is fertile yet the people of Guatemala struggle for food security. There is potential for food security with agricultural education. Education would allow families to grow enough food to feed their families and help them take good care of the land. Although poverty is widespread in Guatemala, there is a higher percentage of poverty where there is also poor education.

The majority of rural people live in the western highlands where poverty is especially high. The Mayan people fought a 36 year civil war for civil rights, education, and economic opportunity. Peace accords were signed in 1996, yet the Mayan people still do not have equal rights and their education is poor. More than 90 percent of the indigenous population lives on an income that is lower than the poverty line ("An Assessment of Poverty"). With many Guatemalans below the poverty line, food security is only a small light at the end of a long tunnel, yet nevertheless a light.

I was first introduced to the absence of light in the tunnel of world food security when I visited Guatemala. The idea of a tropical trip was only a cherry to a huge pie that introduced me to how much of the world lives in poverty. I observed many families while in Guatemala and learned about subsistence farm families.

The farm family that I met did not have access to health care like many poor rural people because health care facilities focus on metropolitan areas. The families in Guatemala eat fresh food and the family I met even had a beautiful fruit tree growing in their yard which they generously shared with me. Fortunately, the two children in the family attended a local school. I got to attend their school for a day.

The children were happy to bring me along for their daily school routine. We started out the day eating a couple of eggs, a small amount of beans, chicken, and some tortillas. Then we got on a small horse pulled cart that brought us to the school. The horse pulled cart worked much like my bus works at home. The cart stopped at each house with school-aged children. Unlike the buses in the United States the cart in Guatemala also picks up the teachers. When we got to the school all of the students were happy to meet me and very friendly. The school was quaint but very well kept and organized. I was put into a class and I enjoyed listening to their lessons that were slightly foreign due to the fact that my Spanish is not very strong. Lunchtime was very fun and I enjoyed playing with all of the children. The day ended with another cart ride home. I then gave them my markers and we worked on their homework. This was a very educational day and I am glad that I got to see how Guatemala's school system works. The Guatemalan government mandates 6 years of schooling however only 41 percent of school aged children attend class.

On average every woman has 3.27 children in Guatemala (“Guatemala”). The composition of the farm family that I met consisted of two children, a mother who helped her husband farm, a grandmother who watched over the children, and a father who worked diligently to make a living for his family. Their farm was unlike any I had ever seen. They grew sugar cane, which is one of the country’s key agricultural exports also including coffee and bananas. The Farm plots in Guatemala range from 0.5 to 2 hectares (1.2 to 5 acres) per family (“Combating Soil Erosion”). This is a small amount of land compared to the large land areas that farmers in the United States have. Not only did the plants there look completely foreign to me but the size of fields was very small. The landscape is also very steep in some agricultural areas and hard to climb even without carrying produce from the fields.

While climbing a mountain in Guatemala, I observed farmers in the field loading donkeys and walking the donkeys down steep trails to carry large loads. The agricultural practices that I witnessed were not meant to give back to the land but to get the most they can from their small plots. The farm plots continue to get smaller as they are passed on from generation to generation. Critics blame transnational food corporations and their land monopolies for Latin America's painful agricultural paradox (Reilly 1). Although the consequences of the food corporations have far reaching implications to the well being of the amount of farm land the subsistence farm families own, there is still plenty of land to have agricultural success on. Other obstacles for farmers are the poor roads, limited access to markets and vulnerable to exploitation by intermediaries (“Rural poverty in Guatemala”). The small land plots do not provide enough food to feed the family due to the absence of education about agricultural practices to stop soil depletion and combat erosion.

All the farmers I meet were hard working and determined to succeed there was just something missing, like a child that wished to ride a bike but just did not have the ability to balance. Guatemala's farmers, just as the child who wishes to ride a bike, need education and guidance so that they will someday be able to sustainably balance on the wheels of success. If there was more education on sustainable agricultural practices then there would be more sustainable agriculture. Although, the investment in education may be costly the outcome will always be greater.

People are continuously more aware of the footprint we as humans leave and how much we take from the earth. We understand that agricultural practices are not always good for the land and much of the natural microorganisms in the soil have been pushed out with large amounts of pesticides and herbicides. We also are aware of the fact that we need agriculture so that we can survive. There is always more to learn and more technology to be developed to help produce food more efficiently. Farmers all over the world are realizing the need to give back to the land and they have implemented many practices that give back to the land. There are many farming practices that would benefit Guatemala's agriculture if the information was widely available to the farmers. Planting cover crops, practicing minimum tillage, composting, and terrace farming would all increase food availability. If we apply this modern technology on Guatemalan farms there will be a significant improvement in production yields.

The lack of agricultural education and technology is hurting the availability of food in Guatemala, but the environment is also taking a toll. Deforestation has put even more pressure on the land and has caused many problems with the watersheds of the Western Highlands do to erosion. The largest contributing factor to the deforestation is the demand for firewood. About 75 percent of all Central American

households use wood for fuel (“Combating Soil Erosion”). The practice of cutting down trees hurts the watershed and leads to the loss of valuable fertile land for growing crops. Furthermore, some of the people in Guatemala do not understand the significance of top soil. Top soil has the nutrients needed for agricultural success. Some farmers even gather the old plant material from the last crop for fuel instead of tilling it back into the soil to replenish the nutrients back into the soil. Producing the plant takes a lot out of the soil and when you do not return the plant to the soil there is no way the soil can continue to bare crops. Just as a library would not be able to provide educational materials if no one ever returned books, the land cannot produce crops if the nutrients are not returned. Of course, there is the option to buy more books or buy more fertilizer, this process is often expensive and takes a lot of labor. The idea of replenishing the soil of its healthy amount of compounds is often seen as too much work and not worth the labor. The soil is often fixed in the short term with herbicides and harmful fertilizers to get a fast and easy bountiful crop. This practice is not sustainable and damaging to the land and its long term well being. There is a need to educate the farmers so that they can return the dead plant material and even other compostable materials to the land. This would rebuild the organic matter in the soil and even provide a larger harvest to the farmer. There are a few organizations currently in Guatemala helping with the deforestation problem. Currently, an organization is working in Guatemala to provide more efficient stoves to Guatemalan families. These efficient stoves use 50- 70 percent less wood, benefiting the family and the environment alike (“Fuel Efficient Stoves”). The work of this organization and reforestation projects have defiantly advanced the current status of the deforestation problem. The progress is significantly hard to measure and often invisible to detect changes before the re-planted trees are half of a decade old however, educating people about the land and how to better take care of it is never a waste of time. With more time and education the environment will be on the right track to a good balance of providing produce to the farmer and staying healthy.

Major issues that are and will effect Guatemala all point to the importance of investing in agricultural education. As Population growth rises there will be an even larger amount of mouths to feed in Guatemala. This means that Guatemala must be able to produce higher yields using technology. The farm family that I met will need to work with their community to have fair trade so that all people in the community can have access to enough food. The need for improved implications of agricultural research is very important to preserve the land and its resources such as water. Farmers must practice healthy water conservation to protect the water for the whole community. Also, The demand for agricultural research has never been more important as the climate is changing. There must be a strong base of researches in many areas to be able to produce enough food.

There needs to be programs set into place to invest in the future of food security in Guatemala. All of the rural families in Guatemala must have opportunities to be trained in good land stewardship. The Guatemalan Food for Progress project by the Texas A&M System's Norman Borlaug institute has given Guatemalan farmers expertise and technical assistance in agroforestry and provided them with practical, hands-on instruction in improved methods of agricultural production (“Borlaug Institute helping Guatemalan”). The program is doing a great job and based on my research is taking all of the right steps to efficiently address the need for agriculture education in Guatemala. If this program continues to be funded by the U.S. Department of Agriculture and is supported by other organizations agricultural education will be wide spread by 2015. Just as the farmers pass down their land plots from generation to generation they will also pass on the legacy of practicing good land stewardship.

The training and education programs would never be possible without the U.S. Department of Agriculture. Of course, the education that the farm families need is not done and programs such as the Guatemalan Food for Progress project will continue to work with farmers to insure their food security. I would recommend that the appropriate role of organizations that wish to help farm families get better yields and take care of the land is to base its programs on education. Rural families are the key players to ensure a brighter agriculture future. They must be engaged in the program's lessons and teachings or else all of the teachings will have gone to waste. The farm families should be open to new technologies and farm practices. Even though the learning process may be difficult and full of change that is hard to endure, the farmers must delight in the fact that food security is much closer as they become more educated.

With hope for the future I find myself thinking about the kind farm family that I meet in Guatemala. Their generosity to me was heartwarming and I hope that educational programs will reach their community and all of the farming communities in Guatemala. As the Mayan people reach nearly two decades after they signed Peace accords in 1996 they are just now beginning to seeing a small light at the end of the food security tunnel and are finally receiving the much deserved education and civil rights that they fought a 36 year civil war to have. Training in land stewardship will allow the farmers to apply responsible farming practices to improve soil quality, prevent erosion, and re-plant trees where the land has suffered from deforestation.

The environment is always patient and for the most part can be reclaimed no matter what humans have done to degrade it. Unlike the environment, people are not as patient and if they are it can lead to malnutrition and death. To prevent malnutrition and death in Guatemala there needs to be awareness for the state of hunger that the people and environment of Guatemala is going through. Agriculture has come a long way and has established many great sustainable practices to better feed the world. With agricultural education and the application of improved technology increasing there is a closer reach to the food security. We need to use our technology to train Guatemalan farmers so that they can become good stewards of the land.

Works Cited

"Borlaug Institute helping Guatemalan forestry and agriculture." 2010 . 1-2. High Plains/Midwest AG Journal. Web. 13 Aug 2011.
<<http://www.hpj.com/archives/2010/apr10/apr5/0331BorlaughInstituteHelpsG.cfm>>

"COMBATING SOIL EROSION AND RURAL POVERTY IN GUATEMALA & HOW YOU CAN HELP." 2010 . 1-2. Strategies for International Development.. Web. 15 Aug 2011. <www.sidworld.org/publications/Guatemala.pdf>.

"Fuel Efficient Stoves." Servants 4 Him . Web. 14 Aug 2011.
<<http://www.servants4him.org/node/81>>.

"Guatemala: An Assessment of Poverty." 1-3. The World Bank . Web. 14 Aug 2011. <<http://go.worldbank.org/37PY9S2I50I>>.

"Guatemala." Central Intelligence Agency World Factbook. 5 July 2011.14 Aug 2011.
<<https://www.cia.gov/library/publications/the-world-factbook/geos/gt.html>>.

Reilly, Elena. "Agribusiness and the Land Crisis in Guatemala: No Peace without Agrarian Reform." May-June 1999: 1. Web. 10 Aug 2011.
<<http://www.cjd.org/paper/agri.html>>.

"Rural poverty in Guatemala." 2. Rural Poverty Portal. Web. 14 Aug 2011. <<http://www.ruralpovertyportal.org/web/guest/country/home/tags/guatemala>>.