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Developing Sustainable Agriculture to Enhance Food Production: Niger

One of the most impoverished countries in the world is Niger which is located in West Africa. The population is just over 16 million people. Niamey is the capitol, and is home to more than 500,000 citizens(1). Its location along the Niger River, has resulted in its large, diverse population. The majority of the population is Hausa which accounts for 53 percent of the total population. There are five main ethnic groups through-out the country, all with their own language and religion. These groups consist of Hausa (, 53 percent); Zarma-Songhai (, 21 percent); Tuareg (,10 percent); the Kanuri (,4.4 percent); and Arabs, Tubu, and Gourmantche (1.6 percent). While there is ethnic diversity amongst the citizens of Niger they all suffer in the same way. A disastrous flood season combined with severe drought causes the people of this country constant hardship. Most of these people live in houses usually consisting of sun-dried mud brick, though some resort to tents. This then leads to the question of Lord Adair; “How is Niger going to feed a population growing from 11 million today to a projected 50 million in 2050 in a semi-arid country that may be facing adverse climate change(2)?” One of the hottest countries in the world, most of Niger’s land is composed of arid desert, and a small percentage of the southern region is known to be tropical in climate with the third largest river in Africa flowing through it called the Niger River(6). However, poor farming techniques will be a huge contributor to possibly cause a severe famine across the majority of Niger.

In Niger, the average family consists of about 20 people. Polygamy is a legal and common practice and each man may have up to four wives. Given that most men have an average of two wives; Niger has one of the highest birth rates in the world (10). In 2009, the birth rate was 50.6 births per 1,000 people. Also, for every 1,000 children born each year, 262 of them fail to reach their fifth birthday. Since this is the case, women feel a desire to compensate for their lost children. This leads to them having an average of eight children in their lifetime. This is not the only reason for extreme high birth rates. The Islam religion does not allow for women of this county to turn men down. If done they will be out casted from their villages, and so the strive for survival is weakened. When you include poverty with this standard of religion; it becomes the reason for the death of so many children. Seventy-six percent of women in Niger are married and start having children before they are eighteen years old (3). A result of this is overpopulation. In addition to overpopulation, only eleven percent of the land is arable. Currently the farms in Niger range from 1.5 hectares to 2.0 hectares. Most farms are smallholder facilities that are normally operated by the women of the family. The crops they grow over the course of a year are usually just enough to feed their families. The tools for agricultural use for most farming villages only include simple hand tools and rely on animal tracking. Most of the other food produced is staple foods. Some of their staple foods include millets, cowpeas, and a drought resistant guinea corn. Since the total population is over 16 million people with only a small percentage of land usable for agricultural practices, the people of Niger must make efficient use of their land. However, every three seconds a child in Niger dies of hunger-related causes. With a poverty level of 63

percent and 70 percent of the total population living off of less than one dollar a day, this country's agricultural practices definitely need improvement and assistance.

In developing countries, it is common to have a large percentage of the population affected by HIV/AIDS. A lack of healthcare is of deep concern in this country, as it contributes to many deaths. Most of the country lacks the knowledge or is unaware of how important their health is. As a result of lack of knowledge, serious diseases strike this nation often. These diseases include diphtheria, pertussis, measles and tetanus and effect the country in the worst way while taking an abundance of lives. Break-outs of infective maladies are a result of unsanitary living. Niger only has 38 medical centers across the country including only a handful of dispensaries (198). These vendors proved to be insufficient in 2005 when they were unable to handle the food crisis or the increasing health care problems. The parents of many children are getting weak, sick, or even dying from diseases such as HIV/AIDS. This results in increased drop-out rates. When a child loses their parents, they are often forced to leave school to help care for their siblings. Now these children have to help forage for leaves and unripe berries to mash down and boil so they have a source of food for their younger siblings. This causes education to be left off the list of priorities for many people of Niger. Within Niger, the literacy rate of the overall population is 13.6 percent. Only 29 percent of the population is enrolled in primary education while 7 percent are enrolled in secondary education (5). Of course these statistics are totally unacceptable for Niger to ever be able to improve the living conditions and quality of life for its citizens.

The root of a poor healthcare system and education system is an unstable government system. Because of the many different ethnic groups many conflicts occur in politics. To claim their independence, Niger suffered austere military rule. Thirty-three long years later, after they finally claimed their independence from France, the citizens of Niger held their first free and open elections. In 1993, Hamani Diori became the first president of Niger. In Tuareg tribes ended a five-year peace accord. They accused their government of not bringing economic aid as they were promised. At that point, Niger created the National Reconciliation Council. The council effected a transition to civilian rule in December 1999. Today Niger is a Republic in which the President is elected and the Prime Minister is appointed. United, these two pillars ensure peace and political stability within Niger. The president serves a five year term. Niger has universal adult suffrage which means that every adult has the right to vote. Also, 83 Deputies are elected in the same way as the President. Government has a huge impact on hunger and literacy rates as well as the health care system. With the people of Niger living on less than a dollar a day, this country's government is not meeting the needs of its people. The article "Hunger Crisis in Niger: Starvation by Market" says "the market respects demand, not need (4)." Currently, the Niger government has the support of the World Bank in strengthening local governance capacities in urban and rural communities to promote sustainable land and natural resources management throughout the country. They are undertaking this project with the hopes of together improving food security, diversifying income opportunities, and improving individual livelihoods (13). While I do think that this is a great start to improving this country, there is more that can be done to improve their agriculture production.

After thoroughly researching the situation, the obstacle I have chosen to address is the problem of sustainable agriculture. The region is known for the growth of millet, rice, sorghum, cassava, and cow peas. Since only 0.01 percent of the land is used for permanent crop production

and they become more dependent on food to be imported, a solution is needed. What if there was a way to show them improving sustainable farming techniques? Is there a way to reach out and teach Niger's youth, tomorrow's leaders, and save the agricultural incomes in this country? And finally, is there a way to start these small stake holder farmers off to make their production sustainable over time?

If you could reach out to the children, Niger's future leaders, and build their knowledge of successful sustainable production methods, then agricultural production in the future would increase. The result is a rippling effect on the entire country. The idea of planting the seed in the youth minds could benefit Niger in so many different ways. I understand that this solution is not an easy one and it will not show results overnight, but over a long period of time this idea of introducing sustainable farming techniques in the schools through the use of school garden test plots for the students to gain knowledge in a hands on method could impact this country's future. By having the knowledge for successful crop production, farmers can improve more land. Future farms will then increase in size causing more job availability. The amount of crop production would be higher than ever resulting in a higher profit, bringing money back to these farmers' pockets. I think giving the people of Niger the opportunity to farm and nurture themselves would help decrease the amount of diseases. Fewer people would be starving. This could increase literacy rates because more kids could attend school, instead of foraging for their next meal. With the knowledge for themselves to have the power of survival in their own hands this would not only increase productivity to lower poverty levels, but at the same time work on making their homes sustainable. Without this type of opportunity young people wanting to implement new sustainable farming techniques will have very little help to improve production to feed their next generation.

Livestock are the main source of income for most Nigerians. These animals graze on the ground leaving their waste, which in turn poisons the soil's nutrients. The people need the same soil to grow crops, but the soil is now ruined. However, Nigerians are forced to sell their livestock prior to the flood season. Over the course of a year, the average rainfall for Niger is 23 inches. The city of Gaya accumulates 850 mm of rain during the months of June, July, August, and September and experiences a drought the rest of the year. The animals are usually in poor condition by this time, which results in lower prices. Often the money raised from selling livestock is not enough to feed their family, so they eat the animals themselves. This results in economic decline (8).

Over the hunger season, millions of people starve and die; however, birth rates continue to stay high. Niger is in the biggest famine while being the poorest country in the world. A child is dying every three seconds because they are becoming more and more over populated.

My solution is to bring agriculture knowledge to these students at their own school and in their own community. This learning strategy has worked very well in America through agricultural education and the FFA. By offering educational hands on lessons in school gardens these students will get the opportunity to learn sustainable methods of farming that will suit the agriculture of their region. My non-profit corporation would provide every lesson and give demonstrations and supports to schools all over Niger. Because the primary schools deal with young children my lesson plans are made for them to understand. What they learn and see with

their own eyes allows them to know it works, and encourages them to bring their new knowledge home and share it with their family. To open up these schools resources to the community, providing these small stake holder farms with the tools they need to kick off their farms would be the next step. My non-profit would offer farming care packages that include: empty paint drums filled with seeds, fertilizer and other necessary farming needs depending on the region. Their training must be offered to them in such a way that it shows respect for people and their culture. Local citizens will be encouraged to work with the non-profit to complete distribution of supplies and they will be encouraged to become "Garden Champions" for their local school and help the students to maintain their test gardens as well as start their own. If one village raised 35 4' by 4' square foot gardens, squared off either by either wood or stones, they could bring in 62 pounds of their own fresh produce every two weeks. In this way they will become part of the sustainable solution for their own hunger. By getting the people of Niger directly involved, my project will then become sustained by the citizens when they use their knowledge to produce, save, and reuse the seeds they are given to make a profit for their family.

To execute this project I would create a joint non-profit organization between Rain for the Sahel and Sahara, Hand up Africa and SNV. Rain for the Sahel and Sahara is part of the combined organization because they know how to bring the interactive agriculture lesson plans to the primary schools to teach Niger's youth correct farming techniques this including: farming techniques that fit the regions climate, different strategies for harvesting and selling, how to keep nutrients in the soil so the following planting season the soil will be fertilized, best ways of marketing their productions, and also how to save and store enough seeds to use to make their farm sustainable year after year (14). In this way we will be giving Niger the opportunity for education that will last them a life time and benefit the future of farming all across the country, but this joint non-profit would not stop there. The Hand up Africa would help by providing any kind of farming equipment necessary for the local farmer so that they could be successful including their first set of seeds to give them that push in the right direction with the knowledge they have now gained (10). One of the main things that they would be asked is to provide five gallon paint cans, a bag of "Silica Gel" and a small flow thru bag of some kind (15). This serving as an inexpensive tool to give farmers to help store their seeds to save and plant following years. This would give farmers the beginning of the materials needed for them to become sustainable in their agricultural production. Last but surly not least of the three non-profits is SNV. SNV would help these farmers create effective and sustainable linkages between producer organizations and other stakeholders in the value chain (12). Also they provide farmers with any new innovative updated research that may be useful in keeping their farms sustainable over times and changes. Each group already exists in Niger but when combined together the belief is that they will create a strong foundation to provide the positive steps in agriculture that would provide a platform for success by future farmers in Niger.

I am working with these non-profits to help them with their funding I would write a grant to the government for this project. Even though this is a non-governmental project since they have been given money by the World Bank for projects just like this, this would give an incredible opportunity to help this country build a stronger bond from a citizen to government stand point.

My belief is that my idea could positively impact Niger for years to come. By giving the people knowledge and a push that they need to survive, thousands of lives will be saved while building up agriculture in this country. I realize that the use of drought resistant seeds and the improved practices coming with the use of technology to improve plant lines and production chemicals, such as fertilizer will also be very important contributors to the success of increased agricultural production in Niger (7). The bottom line is that the citizens of Niger are suffering. Regardless of whose fault it is or what caused this famine, it is our job to see that something is done. Much of the rest of the world has already managed to progress while leaving these people in the dust. Well, I am here to say all people are important. The people of Niger need our help and it is time to take more action. We must work together to make sure new technologies and innovations are available to all people of the world. I humbly suggest this plan of action for sustainable agriculture as a contribution to help Niger continue its' efforts to improve the lives of its' people.

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