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Guinea, Factor 6: Sustainable Agriculture

Guinea: Implementing Sustainable Agriculture Practices

Guinea is a country abundant with potential. Its mining economy is flourishing with prosperity. Its gold and diamond deposits are among one of the rarest and most valuable in the world, and it is one of the leading producers of bauxite. Unfortunately, as Guinea's mining economy continues to flourish and grow, its agriculture sector struggles to keep up with its growing population. Guinea is already importing 33% (Farm Lands of Africa) of its food and this number will only rise with a growing population and dated farming practices. Climatic conditions give Guinea's agriculture economy opportunity to thrive, but with arable land only at 11% and of that only 3% (Farm lands of Africa) currently under cultivation, complications arise. As its mining economy grows, less land is available for agriculture use and without a substantial soil reclamation project in place, depleted mine sites are left virtually unusable for agriculture use. Out dated agriculture practices currently being used, soil contamination, erosion, and eventually desertification are becoming major obstacles and are threatening to seize what arable land is left in Guinea. This poses a great threat to its population especially in rural areas, as 76 % (Vos) of its cultivated land base is populated with subsistence farmers. With the current lack of education and health care available to rural families, food security is going to continue being an issue with each new generation. However, with help there is hope and great potential for Guinea's agriculture sector. If the Government and large humanitarian organizations like United Nations and The World Food Bank provide aid in educating farmers on sustainable farming techniques and also concentrate on basic education for rural youth, many of the obstacles they face could be reversed.

A typical subsistence farm family in Guinea is quite poor. Each family is generally made up of a father and mother(s), as polygamy is widely practiced. Family sizes vary, and due to poor living conditions, maternal mortality rates are extremely high (610 deaths/1000 live births) (CIA World Factbook) and one in six children die before reaching the age of five (WFP). Often there will be a nephew or younger brother living in the household as a farm labourer. The father of the household controls the wives and the first or head wife resolves conflicts and oversees the discretion of labour in the household. Men work in the fields, or may travel away from home to find work. Women weed the fields, grow gardens, cook, clean and raise the children (Vos). Life expectancy is only 59.6 years of age (CIA World Factbook).

Rural Guinean families face food insecurity daily. Historically a typical day consisted of one main meal, which was very low in protein. An example of a typical meal is a sauce, made with groundnuts, okra and/or tomatoes, served over a staple carbohydrate like rice, millet, sorghum, or cassava. Rarely, a family may be treated to a meal with smoked fish, meat or poultry, but not enough to prevent malnutrition (Osborn). UN agencies such as World Food Programme, UNICEF, FAO and WHO have launched the REACH initiative (Renewed Efforts Against Child Hunger and Undernutrition) to accelerate effective interventions to reduce child malnutrition. From 2013-2017 the WFP aims to provide nutritional support to over 40,000 people a year, but with 139,200 children suffering from acute malnutrition, 609,696 from chronic malnutrition and

1,592,892 suffering from anemia, there is more that needs to be done (WFP Nutrition Programme).

Health care as North Americans know it, is virtually non-existent for rural Guinea's farm families. There are 0.1 physicians / 1000 patients and 0.3 hospital beds / 1000 population (CIA World Factbook). These numbers are very disturbing as there are many waterborne diseases and diseases spread through poor sanitation threatening the rural population, including Hepatitis A, Typhoid fever, Bacterial and Protozoa Diarrhea, Malaria, Schistosomiasis and currently in the summer of 2014 the largest Ebola outbreak in recent history. HIV and AIDS are also prominent illnesses that affect the people of Guinea. With malnutrition being such a problem in rural Guinea and the estimation that only 65% of the rural population have access to clean potable drinking water (CIA World Factbook), the rural population will continue being plagued with disease.

Education is free for children ages 7-13 but due to long distances to travel (up to 15km) and the need for child labour, very few farm children go to school (CIA World Factbook). Of 49% of children who are enrolled in school, 12% attend regularly (CIA World Factbook). Due to lack of education opportunities, only 41% of the population over 15 can read and write (CIA World Factbook).

Only 11% of the land in Guinea is arable, and of that only 3% is currently being farmed. Permanent crops like fruit trees account for 2.81% of that 3% base, leaving only 0.19% to be farmed with annual diversified crops. The average rural family in Guinea farms only 32 hectares (about 80 acres) (Eastwood, Lipton, Newell). For many farmers however, their entire field is no bigger than some people's gardens in developed countries. Farming practices are being passed down from generation to generation with very little improvements being made. The most commonly grown crops are rice, cassava, sweet potatoes, yams, corn, sugarcane, and peanuts. Most farms do not use crop rotations but farm the same plot with the same crop every year until the land is no longer producing and the farmer will move on to another field repeating the process. Most farmers use oxen to plow their fields and they harvest their crops by hand. Farmers are barely able to produce enough food for their families on a good year, let alone having enough to take to market to generate income.

Guinea's forested land is being threatened with over population. As wars in their own and neighboring countries are fought, many people have taken refuge in Guinea, this along with their already rapidly increasing population is pushing people into the forests to try and make a living off the land. The side effect of populating forests can be devastating to the land, trees are being clear cut, which results in soil erosion and heightens the threat of dust storms. With improper farming practices, desertification is slowly eating up what little arable land there is.

Some of the major barriers to improving the livelihood of rural Guinea farmers are; lack of education, lack of health care, lack of proper nutrition and lack of reliable transportation. A lack of education is preventing many rural Guinea families from lifting the veil of poverty that has blanketed them for generations. As it is in any developing country, education plays a vital role in the likelihood to succeed from poverty conditions. Many of the farmers are illiterate and with that comes an underlying ignorance to try new things or change their way of living. They don't understand how changing things such as farming techniques, better diets, or social ideals can

actually benefit them. In some of the most remote areas, they are very wary of the organizations who come to try and help, since they feel their security is being threatened. It is hard for any culture to change and adapt when there has been so little change over the course of many generations. The lack of proper nutrition resulting in widespread malnutrition, especially in the rural areas coupled with the lack of health care is keeping the fatality rates at alarming numbers. A better understanding of proper nutrition and the help to diversify their crops to accommodate their needs could greatly increase their health and reduce the amount of illnesses and their severity on the population.

Currently the majority of Guinean farmers do not practice sustainable agriculture techniques consequently they are causing damage to their soil. This begins the cycle of food insecurity, malnutrition, illness, poverty and all those factors combined result in the lack of opportunity for education for their children and themselves. This cycle repeats itself with each new generation.

If Guinea's dated farming practices continue, Guinea will be unable to produce any amount of food and their agricultural imports will be drastically increased. Although farming techniques are slowly improving, they are not being advanced quickly enough to keep up with Guinea's growing population. If trends continue the way they currently are, the rural farm family will continue to struggle and subsistence farmers will be forced to leave their farm, and move into an urban settlement where they will have more access to food. Current farming practices are causing soil contamination and erosion, and deforestation. It is leaving the environment vulnerable to major issues like desertification and extreme climate change. If the farmers in each individual region are unable to adapt to small environmental changes, they will soon be unable to produce sufficient amounts of food to feed their own families let alone having a surplus to take to market.

Traditionally women have been particularly disadvantaged when it came to advancing agriculture techniques because they were often excluded from the decision making process. As a result of being excluded they often found themselves exposed to food insecurity (WFP Rural Development).

Research expenditures saw a drastic decline (69%) from 2000 -2008 due to lack of sponsorship. Although from 2008-2011 there was an increase of 34%, expenditures are still substantially lower than they were in 2000. Many PhD- qualified researchers are approaching retirement age, while two-thirds of Guinean's researchers only hold BSc (Stads, Béavogui, Domgho). Trends for sustainable agriculture practices are slowly improving, but not as quickly as the environment is degrading.

If sustainable agriculture techniques are developed, and more people are educated on preventing desertification, soil contamination and soil erosion, farmers will gain the opportunity to increase yields and produce more food. As future generations take over family farms, improved farming methods will aid in the production of more nutritional food, while also increasing yields. Women will benefit substantially from an increase in agriculture production and sustainability as they will have better food security and more nutritional food, especially through their child bearing years. This will decrease the maternal mortality rates. If villages are able to increase their quality of living, and reduce their veil of poverty it will enable them to foresee a future where they may be

able to prosper and grow successfully, stopping or at least slowing down the rapid urbanization of already overcrowded cities.

There are many major issues that can and will affect the progression of sustainable agriculture in Guinea. Climatic variances can be devastating in any agriculture region of the world. In Guinea, where they are underdeveloped, climate changes like increased temperatures, flash flooding, and/or drought etc., are that much more devastating as they don't have the technology to make adaptation possible. As the population grows, and once forested land becomes urbanized, natural habitats are removed, and the soil is left vulnerable to erosion. As the top soil erodes in dust storms, desertification becomes a possibility, and the land eventually becomes incapable of supporting vegetation growth. As population increases more food is needed, but less land is available for agriculture use as it will be needed to be developed for housing projects. Only 65% (CIA World Factbook) of Guinea's rural population has access to clean potable drinking water. Waterborne diseases are extremely predominant among the rural population. As a family member may become ill, it will affect the entire family farm due to decreased amount of farm labourers making sustainable agriculture with current methods even harder to attain. If rural areas had more access to potable water it would not only increase their health, it would also increase their productivity during the drier seasons as they would be able to produce more diversified crops. As population grows, pollution will become more of a problem due to more contaminated water sources and more contaminated land.

If Guinean farmers had access to fertilizers, chemicals and grain genetics that have been adapted to suit Guinea's soil and climatic conditions, they would have the opportunity to increase their crop yields. They would also have the ability to farm land continuously without depleting the soil of all its natural nutrients. Many soil reclamation processes have been installed in more developed countries to reverse the effects of mining on land. By passing laws that state that mining companies need to return land to their natural state after the mine site is no longer in use, Guinean farmers may have the opportunity to recover some of the farmland that has already been destroyed. Being educated on the benefits of a diversified crop rotation that may include cereals, oil seeds, and legumes is a necessity. For farmers to learn advanced farming techniques they need to have the opportunity to educate themselves. Currently many Guineans have difficulty allowing themselves to become educated, because they cannot afford to take the time away from their fields and risk producing less food. For the hungry, every day is about finding enough food to survive (WFP Rural Development). Following the United Nations Millennium Development Goals, Guinea would be able to build a successful sustainable agriculture program to teach farmers how to maximize the agriculture potential of their fields if they were able to achieve universal primary education. Working closely with programs like FFT (Food-for-Training) Guinea would be able to educate farmers to be able to produce more diversified nutritional yields off of their current farmland, in turn allowing farm children to attend school because their labour will not be needed as much on the farm.

By increasing attendance of rural farm children at school, they will have the ability as they grow older to learn new technological ideas that will allow them to farm more sustainably in the future. Learning basic education as a child, such as reading, writing, and basic mathematical calculations, will make learning easier as an adult because they will understand how to adapt, and

realize that change isn't necessarily bad. In some of the most isolated parts of Guinea, where the closest school may be up to 15 miles away, most children do not attend school. They have never experienced change, and are wary of anything unknown, including people, and view them as a threat. To be able to lift the veil of poverty from Guinea, the government needs to enlist more teachers to travel to these remote villages and hold intensive basic education classes for children during the agriculture "slow" season. If there was no school building in the village, the teacher could hold classes in any available building or safe environment for students to learn closer to where they live. To encourage more students to attend, they could offer youth food to eat while they were at school and possibly even food to take home to their families. A humanitarian organization like Plan Canada or World Vision could provide students with desks, uniforms, school supplies and even bikes to make transportation more manageable.

According to Conakry (AllAfrica), Guinea has the potential to be the bread-basket of Western Africa by 2025. BY educating farmers, and allowing them the power to produce more food, Guinea will slowly lift its veil of poverty. The more food available to people, rates of malnutrition will decrease and people will become healthier because they will have stronger immune systems. They will also become more aware, adapt better and learn new ideas. If people are more aware they will better understand the need for advanced health care, therefore the quality of health care in Guinea will drastically increase. When people are more aware, healthier, and able to accomplish more, the economy will become stronger. Guineans will have more opportunities, more resources, and a higher consumption rate because the more money accessible to them, the more they will spend. Guinea has the potential to become a thriving, successful country, but first we need to educate Guineans of all ages (AllAfrica).

Farm Lands of Africa Ltd. are working to bring modern agriculture production to Western Africa through providing advanced seeds that are adapted to grow in Western Africa's climate. They work a substantial amount in Guinea breeding rice that will help Guinean farmers achieve greater yields. They are also working to diversify crops that are grown to allow the soil to replenish some of its nutrients like nitrogen. If given an increased amount of funding, Farm Lands of Africa Ltd. would be able to increase the amount of adapted seeds supplied to farmers, allowing more farmers to produce greater amounts of food.

World Food Programme (WFP) is working with rural Guinean farmers through Food-For-Assets (FFA) and Food-For-Training (FFT). They provide food to rural farmers and in return the farmers to come to their clinics and learn. They work directly with women, as they find that 80% (WFP Rural Development) work in the agriculture sector, and have the biggest impact on the children. If WFP was able to provide more training and food to an increased amount of the population, Guinea would be able to solve many issues like food insecurity quicker. Currently though WFP is only capable of helping a small percentage of Guinea's farming population.

Organizations such as the World Bank and United Nations can help provide funding to allow Guineans to purchase advanced seeds, fertilizers and other chemicals that would assist in production and increased yields. Governments can help implement certain ideas by publishing the findings of researchers that they have employed. They could also work to develop programs that will allow farmers to learn advanced farming techniques through demonstrations presented

verbally due to the amount of illiterate people in Guinea. Looking ahead to the future generations, Guinea will have a more sustainable agriculture industry if they work to make schooling more accessible to rural children by decreasing the amount of travel required. Rural families are the key elements in implementing these ideas. If farmers don't attend any demonstrations, or change their farming techniques to allow advancement to take place, Guinea will continue to be unable to make enough food to support its entire country. Parents need to encourage their children to attend school; otherwise a large percentage of Guineans will continue to be illiterate with no hope for the future.

One of the main reasons that many humanitarian organizations are not as successful as they could possibly be is, based on this philosophy: "Give a man a fish, and he will eat for a day, or teach a man to fish and he will eat everyday". Yes, people do need food, but more importantly we need to know how to make our own food. By supporting the education of Guineans not only on sustainable farming techniques but also youth on basic education, we will allow them the opportunity to realize food security.

Foreign countries have entered Guinea, gained access to the mineral rights and are mining the land. They are pocketing their profits, but are not helping to develop the country in the ways that they should be. The European Union, the United States, and the United Kingdom governments are pushing for the awareness of the use of the premiums mining and oil companies are paying to the Government. France has also slowly provided more aid to Guinea as they are a major resource-extracting country from Guinea (Cobain and Hirsch).

With advanced farming techniques in practice, Guineans will be capable of growing enough food to support their entire country and possibly becoming an industry leader for rice production. If trends continue the way they are though, Guinea will eventually become desert, incapable of supporting any vegetation despite the torrential down pours they receive in rainy season. Lack of education is not only preventing advancements in technology and sustainable agriculture practices currently, it will also hinder farmers in the future. Illnesses resulting from poor sanitation and/or waterborne diseases can be prevented by improving the overall quality of life achievable through sustainable agriculture practices. The majority of Guinean farmers practice dated agriculture techniques. As organizations like World Food Programme develop and implement educational opportunities for subsistence farmers, many refuse to attempt improved practices for fear that they will not produce as much food. For the hungry, every day is about finding enough food to survive (WFP Rural Development). If the government and large organizations keep working together to help bring Guinean farmers food and educational support eventually the future generations of Guinean farmers could realize sustainable agriculture.

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