

Hannah Chambers
 Nashua-Plainfield School
 Nashua, IA
 Nigeria, Factor 17: Sustainable Agriculture

Nigeria's New Oil

What is sustainable agriculture? Sustainable agriculture is the growing or producing of any plant, animal, or any products that use techniques that protect the environment and human health (GRACE Communications Foundation, 2016). Improving Nigeria's sustainable agriculture will help break down barriers holding them back from improving agriculture productivity and gaining access to markets and adequate nutrition. Nigeria's climate varies through the seasons; the seasons include rainy season and dry season. Rainy season begins in the coastal areas in February, and it travels north for the duration of the summer until about October. In October the dry season starts and that consists of high temperatures but low humidity. The dry season last lasts from about October to approximately April in the northern part of Nigeria (Mandi Titus, 2016). Nigeria is a very fast growing country and with this poverty levels are also rising. Poverty is a huge issue for Nigeria, and people cannot get enough money to support their families, and the agriculture yields are lacking because of the lack of sustainability. This is when something needs to be done. Nigeria is dense with resources such as oil, tin, iron, coal, limestone, zinc and lead (Organization of Petroleum Exporting Countries, 2016). Nigeria is widely known for its oil production. Nigeria is Africa's largest oil producer, producing 2.5 million barrels of crude oil a day (Nigerian National Petroleum Corporation, 2016). Although Nigeria is becoming more technically inclined, the agriculture is still very conventional, but according to Askinwumi Adesina, Nigeria's agriculture minister, "In Nigeria, we're making agriculture the new oil." (Olusen Obasanjo, 2014). With those efforts it is possible to put Nigeria's poverty to an end and begin a huge agriculture state that will support the environment and also support the people of Nigeria.

The average family size in Nigeria is approximately five people. The average diet includes starchy foods such as beans, potatoes, and corn. Rice is very popular but not enough is grown to supply Nigeria. Another main food is cassava. Cassava is rich in carbs and energy. The Nigerian diet is very different from ours as well as their education. Nigerian education includes many steps, and it is very different from our own. The first step is called Primary School. This is where the students typically go to for six years and then move on to the next step. The next step is Secondary Education; typically students will go for three years. From here, the students can decide if they want to continue and go to the next level. Nigeria is culturally diverse and is the most populated country in Africa. English is the official language in Nigeria; although, there are many languages that are spoken.

The average farm size for a rural Nigerian family is about two hectares. Some of the most common crops that they grow are beans, yams, rice, corn, peanuts, sugar cane, cotton and melons. Most of Nigerian food is raised by small farmers who can barely raise enough to feed their families. Nigerian farmers still rely on tools such as hoes and cutlass (Owlcation, 2016). Nigeria is a fast growing country and economy and has many good practices but is still touched by poverty immensely. Nigeria is dense with resources but still falls into poverty. "Some 70 percent of Nigerians live on less than US\$1.25 a day" (Investing in Rural People, 2014). Nigeria needs help learning how to utilize their resources. Ways that we could help them learn how to utilize their resources would be to go visit with them and show them what we do. Interacting and teaching each other things is the key to good relationship and just because we are more technically inclined doesn't mean that we can't learn a few things from them as well.

Some major barriers facing the Nigerians are that they are overpopulated; they have resources but not enough to supply the people who need it. Land is overused and overgrazed causing drought. The weather can be very unpredictable. Sometimes endless amounts of rain can fall and other times no rain at all can

fall, which is nature, but the Nigerians don't have the seed technology to survive their unpredictable weather. The farmers who work do not have access to machinery or disease resistant seed which causes the yield to stay low; therefore, they do not provide enough to contribute to their country or even enough to feed their families. These farmers soon fall into poverty and have nowhere to turn. It is very important that we help improve technology in both biological and mechanical ways.

The factor that I have chosen has a big effect on agriculture. My topic is sustainable agriculture. Some issues that Nigeria is struggling with especially are cassava (not yielding enough). Nigerians rely on cassava to feed their families and keep themselves alive (Michael Stulman, 2015). "Cassava is an important crop for two reasons: it is drought resistant and it's available all year, so it can mitigate food storages" (Michael Stulman, 2015). Cassava is also packed with calories and carbs which are the human body's energy or "fuel". Cassava is very easily grown with the type of equipment that the Nigerians have. Cassava is a bushy root crop that grows approximately three meters above the ground. Cassava is a perennial plant that can handle droughts and poor soil. The root only lasts about three to four days before it is rotten, so after harvest it has to be eaten quickly. It provides essential nutrients like carbohydrates. The plant is actually toxic sometimes but can be prepared a certain way to avoid problems (Darna L. Dufour, 2016). It provides carbohydrates and other nutrients, such as zinc, magnesium, riboflavin and vitamin B. Nigerian people need more and need help to make the most out of the cassava. Cassava can be cooked in a variety of ways and used in a variety of dishes.

Sustainable agriculture does have an effect on not producing enough food because Nigeria simply doesn't have the technology to help increase the yields and create machines to help them manage. It also affects how much income is collected; a bad harvest can cause families to force kids to stop school, sell all livestock they have and also put them in debt (Michael Stulman, 2015). They have a lot resting on these harvests. That is why we need to help them modify the plants to help make them better. With the right amount of research we could find a solution. Nigeria could then help its neighboring countries so poverty levels would drop for everyone. It is a domino effect and could save many people's lives by keeping them out of poverty.

The situation in Nigeria is urgent because the Nigerian people need help developing enough food to feed their families and help provide for the country's economy as well as feed the country's animals. Having enough food to feed all three factors would completely turn around the animal agriculture right now. Nigeria's environment is suffering from deforestation causing desertification, and erosion from water and wind. The forest is disappearing due to city expansion, road expansion, and agriculture. Some more environmental issues are soil degradation caused by oil spills. Oil spills poison food and water sources for Nigeria, therefore, causing many people to suffer.

With Nigeria's growing population, the food scarcity and poverty will grow also. Increasing technology and sustainable agriculture will help with keeping the country out of poverty. Agriculture provides 70%

of jobs in Nigeria. In 2050 Nigeria's population is estimated to be between 230 and 430 million people (Chinedum Nwajiuba, 2011). The following quote from Adam Robert Green describes Nigeria's mindset, "We were not looking at agriculture through the right lens. We were looking at agriculture as a developmental activity, like a social sector in which you manage poor people in rural areas. But agriculture is not a social sector. Agriculture is a business. Seed is a business, fertilizer is a business, storage, value added, logistics and transport – it is all about business"(Green, 2013). This quote shows that agriculture can be just as important to the economy as oil, maybe even more important. There are so many ways that everyone could benefit from agriculture. Like the quote said, "Seed is a business." Yes, seed is a business and could provide many jobs to the Nigerians.

Animal products in Nigeria are in great demand right now. The animal agriculture in Nigeria will need to

grow to meet the demand. Some of the most common animals that Nigerians grows are cattle, pigs, sheep, goat, horse and poultry (Anthony Etuk, 2013). While Nigeria's animal production is evolving, it still needs some help to meet the demand. Ways that would help Nigeria with their animal agriculture would be to teach them how to breed the animals, how to keep them healthy and show them the ways that we sustainably practice that. In 2001, Nigeria was estimated to have 19 million head of cattle, 26.5 million goat, 21.5 million sheep, 5.3 million pigs, 135 million chickens and 205,000 horses (Advameg Inc., 2016). Those numbers compared to the United States are low. Nigeria is twice the size of California so considering that, the numbers aren't bad, but there is still room for improvement.

Improving these factors would improve Nigeria's way of life. It would allow them to become more stable and well run. By fixing the problems, it will make Nigeria more independent, saving their school systems and saving their people by limiting poverty. Some things that should be done would be to educate the Nigerians about sustainable agriculture. By educating them, the Nigerians will be able to be more knowledgeable about the tools, seed or anything they are using. They will become more independent and educated making it easier for them to come up with new ways to implement sustainable agriculture. Recommendations should include putting up some hog confinements and using the manure as fertilizer and ultimately make healthier soil. Nigeria should also make roadways more accessible to make the moving of crop, livestock, and many other things easier to move. Another way to help Nigerian issues would be to see what neighboring countries can offer Nigeria. It is important for Nigeria to have good relations with their neighbors because it could help their sales in many ways.

Teaching the Nigerians about sustainable agriculture and helping them understand will help fix their problems. We can save Nigeria by helping them put an end to poverty and start an empire of agriculture. By increasing Nigeria's sustainable agriculture, they will be able to save their environment and save their people, and by teaching them the correct ways of agriculture we can hope that they will do the same for their fellow neighbors lowering all of Africa's poverty level. Nigeria's oil supply will always have a huge impact on their economy, but if we can make sustainable agriculture a necessity, it will make Nigeria better in many factors. Nigerians will learn how to control runoff, deforestation and make maintainable roadways that will help the small farmers get their goods to the markets. Sustainable agriculture goes farther than just making enough food; it can help with roadways, and making a better way of life. Nigerians can also start raising more animals and learning the relationship between manure and fertilization. By using the manure to fertilize their soil, the soils would be much healthier and more productive. The main goal in Nigeria is to put an end to poverty and help them utilize sustainable agriculture to save their land from deforestation, desertification, and many other environmental problems.

Nigeria is very diverse, so every region is going to need a different solution. We will need to accommodate these certain regions with different varieties of crop or total different crops. To know the right solution we need to witness there and get a feel for how the climate and weather actually is. We will have to do soils testing and try many different solutions, each time recognizing the outcome whether it good or bad. We will be learning right along side the Nigerians because we have never been in their county before. We can also help stop soil degradation due to oil spills by teaching them a more efficient and safe way to get oil. Overall helping them increase sustainable agriculture will help them greatly. Nothing is going to change overnight; people have to remember that this is going to be a long process and someday agriculture will fuel their economy just as oil does for them now.

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