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Nigeria: Building a Future in Sustainable Agriculture

Introduction:

What exactly is sustainable agriculture and why is it so important? According to the Sustainable Agriculture Research and Education program (a branch of the United States Department of Agriculture), sustainable agriculture is the developing of new innovative strategies to produce and distribute food, fuel and fiber sustainability. (“What Is Sustainable Agriculture?”) By striving for these three unique approaches, we can accomplish the goals of profit, stewardship, and quality of life. There are several methods that can be used to improve the three unique approaches of sustainable agriculture. To show a few, here are some examples from the Sustainable Agriculture Research & Education publication. A cattle rancher might divide his farmland into paddocks in a rotational grazing system to better manage soil and water resources while improving animal productivity. A field crop farmer might implement a rotation to break up pest cycles, improve soil fertility and cut costs, or use cover crops. A fruit and vegetable grower might try a new marketing approach such as selling directly to restaurants in a nearby city to gain a larger share of the consumer food dollar. (“What Is Sustainable Agriculture?”) Sustainable agriculture means successful management of resources for agriculture to satisfy the changing human needs of our growing world population, while maintaining or enhancing the quality of environment and conserving natural resources.

Nigeria is located in Western Africa between Benin and Cameroon and borders the Gulf of Guinea. Nigeria’s population in 2011 roughly sat at 162 million people making it the world’s seventh most populated country. Eighty percent of the Nigerian economy is dependent on the petroleum sector for the provision of public finance. As people become alert of the employment opportunities that the oil industry provides, homes and farms have been left for what has been referred to as the “streets of gold” in the cities. This causes a serious problem with Nigeria’s expected population projected to be 230 and 430 million people by the year 2050. Even though Nigeria is the world’s largest producer of cassava, yam and cowpea, it is evident that it is a food-deficit nation that imports large amounts of grain, livestock products and fish. (“Rural Poverty in Nigeria”) Much of Nigeria’s land has been farmed under the bush fallow system. This is when the land is left idle for a period of time to allow natural regeneration of soil fertility. The agricultural holdings are small and scattered, and farming is carried out with simple tools. Large-scale agriculture is not common.

The average family farm in Nigeria cannot seem to keep this country afloat on food security with the rising population becoming dependent on imported foods. Insecure land tenure, scarcities of funds and credit, labor scarcity despite overall high unemployment and stagnant technology have crippled its further development. (“Nigeria’s Agriculture and Food Security Challenges”) This is one of the main reasons why young people from the rural areas would rather try their luck in urban regions.

The government of Nigeria resembles the United States quite a bit, but still has its own individuality. A president who is popularly elected for a four-year term and is eligible for a second term governs the Nigerian people. The National Assembly consists of 109-seat Senate and a 360-seat House of Representatives. The country also is divided into 36 states and the federal capital territory. The Nigerian culture is multi-ethnic with over 250 languages spoken. Value to different types of arts, such as, pottery, painting, cloth weaving and glass and metal works are of high importance to their society.

Body:

Family is extremely important in Nigeria. Emphasis has been placed on male members of the family more because of their rights to both family inheritance and extension of family lineage and name. Unlike the men, the women are described by their biological sex and family responsibilities and their beauty is only seen through these myopic lenses. (“The Family Lifestyle in Nigeria”) The average household size in Nigeria is five people with the rural areas being somewhat higher than the urban areas. Rural infrastructure in Nigeria has long been neglected. Investments in health, education and water supply have been focused largely on the cities. As a result, the rural population has extremely limited access to services such as schools and health centers, and about half of the population lacks access to safe drinking water. (“Rural Poverty in Nigeria”) Unfortunately, illiteracy is still a problem being faced in Nigeria. The country provides free, government-supported education, but attendance is not compulsory at any level. The education system consists of six years of primary school, three years of junior secondary school, three years of senior secondary school, and four years of university education leading to a bachelor’s degree. Nigerian cuisine is known for its richness and variety. Many different spices, herbs and flavorings are used in conjunction with palm oil to create deeply laced sauces and soups.

Small-scale farmers who cultivate small plots of land and depend on rainfall rather than irrigation systems produce about 90 percent of Nigeria’s food. That is an enormous percentage for small-scale farmers to produce when a majority of the people have left their homes and farms for the cities. Women play a major role in the production, processing and marketing of food crops. Yet, women and households headed solely by women are often the most chronically poor members of rural communities. Men have higher social status and, as a result, more access to schooling and training. In recent decades, the number of men migrating from rural areas in search of employment has increased, and the number of households headed solely by women has grown substantially. (“Rural Poverty in Nigeria”) Major crops grown include: beans, sesame, cashew nuts, cassava, cocoa beans, groundnuts, maize, palm oil, cowpea, rice, soybeans, and yams. The bush fallow system, a type of subsistence agriculture in which land is cultivated for a period of time and then left uncultivated for several years so that its fertility will be restored, is a common strategy that is widely used in Nigeria.

The Youths Initiative for Sustainable Agriculture, also known as the YISA, is an Agro-knowledge based organization of young graduates of Agricultural discipline and other youths interested in agriculture. This group is championing a course for sustainable agricultural practices that will bring the needed revolution to the agricultural sector of Nigeria through our individual farming operations and youth agricultural re-orientation program. The organization thrives to change the present status of Nigerian youth, from the “street roaming graduates” to form the army of youths that will practice and sustain agricultural production and marketing in Nigeria. (“About YISA”) I think this union will continue to make positive difference in the lives of the Nigerian people if it endures to flourish. In the past year, the YISA group has been roughly updating their blog once a month sharing about crop development, government issues, and partnerships. Recently the Youth Collaborative Community Agriculture Programme (YOCCAP) received support from the Government of the United States through the U.S. Ambassador’s Self Help Project. (“Youth Initiative for Sustainable Agriculture Partners with U.S. Government on Community Empowerment Scheme through Agriculture.”) This organization is expected to use the money to set-up a Community Agricultural Skills Acquisition Center for women and youth. While the blogging is a step in the right direction, I think this organization needs to help get this information to the hands of every farm family.

A question may arise asking what precisely is the problem that is weakening agriculture in Nigeria. To be frank, there are several factors. Nigeria’s population is growing, and the country’s food security challenges will grow with it. At the current growth rate of domestic food production, Nigeria is unable to feed its growing population. Domestic food production will have to expand at a faster rate. Another

problem that will weaken agriculture is the possibility that Nigeria's urban population will soon outstrip the rural population. The population shift to urban centers is projected to become even more pronounced in the future. Despite its roots, the urban population is disconnected from the food production system and will have to rely on the market for food supply. This supply will have to come from domestic production or imported food. ("Nigeria's Agriculture and Food Security Challenges")

The lack of local innovation, especially in mechanization that is appropriate to the ecology is a result from agricultural technology development that continues to rely on human labor for farm power will also most likely be a reason to weaken agriculture. The last element that I am going to state that I think will weaken agriculture in Nigeria is that employment and income will have to be created for a large and growing youth population. With modern research and technology, agriculture provides a great opportunity to turn rural poverty and stagnation into development. At least in theory, the rural youth could produce the food that the urban youth consume. However, this would assume that the urban youth have the required purchasing power. A different scenario may play out in which the rural youth do not benefit, where big agribusiness produces the bulk of food for urban centers. ("Nigeria's Agriculture and Food Security Challenges")

Costa Rica's sustainable agriculture would be a perfect role model for Nigeria to follow. Costa Rica uses crop rotation to achieve their goal of being the first carbon-neutral country by 2021. A benefit of Costa Rica using crop rotation is that each crop has a different harvesting period providing food and income year-round. This method also reduces soil erosion, a major environmental issue in Costa Rica. Instead of using chemicals to prevent pests, many of these farmers harvest plants such as lemongrass and citrus, natural pest repellents. A newer technology method that sustainable farmers in Costa Rica are beginning to employ is the use of plug-flow anaerobic digesters. These machines are long, narrow, insulated, and heated tanks made of reinforced concrete, steel or fiberglass with a gas tight cover to capture the biogas. Biogas produced by the digester is used to heat the digester to the desired temperature. Excess biogas can be used to run an engine generator. Heat can also be recovered from the engine generator and used for space or floor heating, water heating or steam production to offset the cost of purchased electricity, propane, natural gas, or gas oil used on the farm for daily operations.

Other than the underlying problems enunciated above, Nigeria faces three contending complications that need to be resolved. They are:

1. The Nigerian economy is for over 80 % dependent on the petroleum sector for the provision of public finance. Despite its significance to the nation economy, the oil sector has not spurred real economic growth, has created very few jobs and its wealth has been distributed amongst a small elite. A nation policy framework is needed to diversify Nigeria's economy away from a mono-product one, which is heavily dependent on petroleum mining and export. It is well accepted that the agricultural sector will be a key sector in this pursuit. ("Nigeria's Agriculture and Food Security Challenges")
2. The rural economy is profoundly dependent on smallholder producers, whose primary need is household subsistence. They produce little marketable surplus. Since at least 1972, the target group of the Nation Accelerated Food Production Program has been this category of farmers. The aim was to help them raise output, productivity, and income and thus break out of a cycle of poverty. ("Nigeria's Agriculture and Food Security Challenges")
3. The third issue is whether a green agricultural sector can assure food security for a growing population of Nigerians. The current controversies around different interpretations of what constitutes a green economy provides an opportunity for refocusing the policy thrust and refine

strategies for an agricultural sector that is predominately low carbon, resource efficient and socially inclusive. This will include more sustainable agricultural practices that protect the soil and use fewer external inputs. (“Nigeria’s Agriculture and Food Security Challenges”)

Several factors can help improve sustainable agriculture in Nigeria. Below are several recommendations that I think would greatly help make a difference to move the country forward.

1. Appropriate technology can not only increase productivity and improve efficiency but also reduce GHG emissions. Thus, the magnifying effect of green development affects positively on agricultural output and on the environment. (“Nigeria’s Agriculture and Food Security Challenges”)
2. Policy measures should be designed to reduce carbon footprints, encourage waste conversion, use energy-efficient means of production and employ renewable energy from wind farms, solar, small-scale hydro and biomass. (“Nigeria’s Agriculture and Food Security Challenges”)
3. The government needs to guarantee land tenure security and land access in the face of changing population dynamics, migration, and potential competition between agri-business and smallholder and subsistence producers. This will also require adequate investments and funding incentives. (“Nigeria’s Agriculture and Food Security Challenges”)
4. There is a need for the identification of agro-technologies for improved soil management that reduce carbon emissions while increasing production. Considering that Nigeria’s agricultural sector is mostly rain-fed, increased investment and extension for irrigation facilities, including water harvesting and precision drop systems may be an option for some farmers. (“Nigeria’s Agriculture and Food Security Challenges”)
5. It would generally be helpful to encourage a reduction in chemical use in crop and livestock production, including fishing. This would have immediate positive health effects, but could also result in an increase in farm employment. These jobs would help improve food security, reduce poverty and lead to a better distribution of the benefits of green development in the agricultural sector. (“Nigeria’s Agriculture and Food Security Challenges”)

After evaluating and reading the above recommendations, my recommendations are as follows: by increase technology and education availability to everyone, increase awareness and use of sustainable agriculture practices, and increase the use of groups such as the YISA. By allowing both females and males to partake in the public education system, they can widen the knowledge about certain practices in agriculture. Once educated, the Nigerian people can start to make use of the technology that may become available to them. The YISA is beginning to use this through their blog, however; I think they can do more. In American agriculture, a primary way to share information is through social media sites. As people become interested in pursuing a job in agriculture, specific agricultural education programs could and should be developed. If they can participate in a specified education in agriculture, they can practice these more practical sustainable agriculture techniques. If they continue to develop groups such as the YISA, I feel that this will help build a culture of knowledge and experiences.

Conclusion:

Although Nigeria depends heavily on the oil industry for its budgetary revenue it is believed that if the agricultural sector is properly managed and enhanced, it would greatly boost the country’s gross domestic product and even replace oil on the top of the list. If the government of Nigeria and the Ministry of

Agriculture would intervene in solving the problems of farmers in Nigeria, it is believed that by 2020 the country would permanently cease from the importation of foodstuffs and animals. (“Agriculture in Nigeria”)

I think not only will obtaining appropriate technology assist in making Nigeria an economically profitable agricultural country, but also policy measures will aid in the reduction of carbon footprints and encourage waste conversion. The government also needs to guarantee land tenure security and land access in the face of changing population dynamics, migration, and potential competition between agri-business and smallholder and subsistence producers. Lastly, it would generally be helpful to encourage a decline in chemical use in crop and livestock production. This could result in an increase in farm employment.

In conclusion, I believe that if the Nigerian farmers become more educated in agriculture and technology, improve their sustainable agriculture by following the methods of Costa Rica and continue to strengthen and create groups such as the YISA will benefit the Nigerian people enormously. Remember that 90% of the food supply in Nigeria is produced by small-scale farmers. Since small-scale farmers are the foundation and basis of the Nigerian agriculture, we as people need to provide the help and knowledge that we secure into benefiting the future for this country.

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