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Sierra Leone, Plants

Sierra Leone and the Utilization of Native Plants

There are 34 countries on Earth who have been deemed unable to produce sufficient food for themselves, they have to rely primarily on imported food to be able to eat (Cago, 2016). This is a large and complex problem that has many solutions and components that play a part. One of these countries is Sierra Leone. Sierra Leone has not been able to produce enough food to properly feed their populace and has had to rely on expensive imports. This has led to poverty, malnutrition and disease, but luckily there are things farmers can do to help increase crop production to ease the financial burden that food places on the Sierra Leoneans. These methods will be able to help improve one part of a series of issues.

Sierra Leone is a small country located in the central west coast of Africa. It has a population of around 7.557 million people, with about 60% of them live in rural areas while about 40% live in an urban environment ("Sierra Leone" n.d.); however, these statistics vary between sources due to the lack of proper reporting and documentation. Sierra Leone is a democratic republic with an executive president, currently Julius Maada Bio ("Sierra Leone:Constitution" n.d.). Of the total land available, 74% of it is "considered suitable for cultivation" ("Sierra Leone" n.d.), however, only 7.4% is actually cultivated.(4) Their food staples are rice and cassava, but they have a variety of fruits available to them. Their cash crops are primarily cocoa, coffee, oil palm, and cashews. Sierra Leone's top exports are iron ore, titanium ore, diamonds, cocoa beans, and aluminium ore ("Sierra Leone" 2017).

Climate and geography have a large influence on Sierra Leone. While the country is tropical and humid the majority of the year, there is a dry period between November and April. In the dry season during December through January the Harmattan winds blow, these are powerful winds that can cause the rains to become heavy and torrential. There is also a 7 day rainfall every year in August, where the rain doesn't stop for an entire week("Sierra Leone World Travel" n.d.). Sierra Leone has 4 geographical regions: there are plateaus located in the east, very high mountain ranges dispersed throughout, lowland plains dotted with forests dominate the central portion of the country, and swamps cover the western coasts ("Geography of Sierra Leone, 2017").

Farms in Sierra Leone are not large, according to a report by the World Bank in 1984, the average farm is 1.33 hectares ("Sierra Leone Agricultural" 1984). One hectare is 10,000 square meters, so a typical farm would be 1 ½ football fields. Families in rural Sierra Leone, as of 2004, typically have 6 members ("Sierra Leone:Population" 2016). In rural villages, a typical house is either circular or rectangular. In the past, people used a wattle and daub system. This method used woven stick walls and involved rubbing mud or another sticky substance over the top of it, but now some villages have started using sun dried bricks to construct their houses. Roofs are usually made from woven grass, palm thatch (palm leaves woven into strips and laid like shingles), and now they have started using corrugated iron sheeting ("Sierra Leone-Housing" n.d.).

In urban areas, buildings and houses are more managed and regulated. A house in a town or village will typically be made of cement bricks. Their roofs are usually made of corrugated metal. These houses tend to be bigger, and can sometimes be two, or more, stories tall. In the past urban housing was typically made of wood but has since shifted to these newer methods ("Sierra Leone-Housing" n.d.).

Families in rural areas are usually sustenance farmers, so they grow most of their food. If they have access to a local market, they will go and trade for other foods. Families in urban areas will go to markets

to purchase food. Rice makes up the majority of their caloric intake, they will also eat stews made of cassava, potato leaves, palm oil, onions, tomatoes, yams, red peppers, and sometimes groundnut oils. They get protein primarily from beans, fish, chicken, goat, pork, and sometimes lobster, oysters, and crabs. Food is usually cooked in a large pot supported on rocks above an open flame. A typical meal consists of rice and stew, they will roll the rice into balls and dip them in a stew or sauce (“Cuisine and Etiquette” n.d.).

There are not many opportunities for different employment in Sierra Leone. Agriculture makes up about 60% of the work in Sierra Leone. This includes working in fisheries and in forestry, but the majority of the population are sustenance farmers (Serrato, 2018). The other main opportunities for employment are through the mining companies. The average annual salary is 5,749,316 SLL (Sierra Leone Leones), but the bottom 25% make less than 2,963,250 SLL (\$321.27 USD), while the top 25% make over 15,945,475 SLL (“Average Salary” 2019).

During the 10 year civil war, many schools and hospitals were destroyed. In recent years the country has focused on rebuilding infrastructure. A few years ago, only 40% of Sierra Leonean children were able to attend school because families couldn’t afford it on their small livings, especially with the implementation of mandatory uniforms. Then in 2018 President Bio launched a program that would pay for the materials and school tuition for all children in the country. This also made going to school mandatory, and those who didn’t send their children to school could face legal consequences (“Sierra Leone launches” 2018), and now with the Free Healthcare Initiative in 2010 which increased healthcare availability, the number of children coming in to receive care has more than doubled (“Sierra Leone” n.d.). These things are becoming more available and affordable for families and individuals; in addition to that, in 2010 it was reported that they saw a 13.5% increase in the health industry’s workforce, as well as a budget increase of 34% (“Sierra Leone” n.d.).

A small minority in Sierra Leone have access to things like clean water, toilets, electricity, telephones, roads and local markets. Most Sierra Leoneans acquire their water from polluted sources. There are many factors which have played a part in polluting and depleting water sources including chemicals used in agriculture, mining waste, deforestation, as well as slash and burn farming (Barton n.d.) Unfortunately the government and the public do not have the information or resources needed to keep and use clean water. When regarding toilets, only 13% of the population have access to improved sanitation facilities, and over 24% of the country practice open defecation (Pushak, Foster 2011). Electricity is a commodity in Sierra Leone, only 20.3% have direct access to it. In contrast access to a cell phone and radio is much higher, with 83% reporting they had access to a phone, 52% of them reported having access only to a basic phone with no internet access, and 81% have access to a radio (Wittels, Maybanks 2016). However those in urban areas had a much higher access than those in rural areas. Sierra Leone’s road system is sub par, most roads outside of Freetown, the capital, are unpaved, and oftentimes unusable during the rainy season (“Traffic and Road” n.d.). The lack of roads and poor road conditions cause supply shortages in the rural areas of the country. Unfortunately roadwork is very underfunded; it has a typical annual fund gap of 59 to 278 million SLL (Pushak, Foster 2011). Throughout the country there are pockets of people who don’t have access to main roads, with only 21% of the rural population living within 2 km of an all season road (Pushak, Foster 2011).

Sierra Leonean families face several barriers when it comes to getting proper nutrition. Some of the major ones are insufficient food production, a poor infrastructure, crop destruction, and a lack of money. With few consistently paying jobs available to a large portion of the public, most people resort to sustenance farming, but they aren’t able to produce enough food. Fortunately for them, there is hope in their plight to eat.

Poor food production is a pressing issue where in its current state is causing major problems. The organization UNICEF reported in 2013 that 34% of the country's population was stunted because of malnutrition (Ighobor n.d.). The country currently has to import much of their food and the people can't afford to buy it. With the increase in the utilization of native plants, crop production will increase, and with the majority of the population being subsistence farmers, it would greatly help. The biggest contributions to the rice production and distribution come from their rice based diet, acts of weather, the poor infrastructure, lack of knowledge in farming, and the destruction of mangroves.

The Solutions

The effects of utilizing plants will affect the rural population directly in that it will change how they farm rice and it will give them a better yield. In contrast, the urban population will be affected indirectly, they will be impacted by the increase in domestic rice and other food availability. The age group that will be affected the most by the utilization of other plants will be the younger generation of up and coming farmers. They will be the ones to use these new methods and pioneer them. Women will be affected more by this than men because a large amount of the agribusiness workforce is women ("Making Aid" 2008). The older generations of people will be less likely to change their practices because people tend to become set in their ways and wouldn't want to change their culture.

The environment will benefit from the utilization of plants. Rice grows well in the swampy areas so farmers have cleared out large portions of the mangrove forests that inhabited the swamps. Sierra Leone has lost an average of 1% of their forests a year because of these practices. If farmers were to use the mangroves more effectively, they would be able to cut down on carbon dioxide emissions, it would help keep the shoreline from encroaching further, and it would be able to help aid in the biodiversity of the swamps and coastline (Peterson 2019).

There are a few good solutions to the lack of proper crop production, The first one is shifting the primary focus from rice to yams, cassava, and sweet potatoes. The second solution to address the issue would be to plant mangroves around the rice paddies. There are pros and cons to both of these ideas, but both are practically doable.

The pros of shifting the primary focus from rice to yams, cassava, and sweet potatoes are there would be potential to produce enough food for the populace; it would utilize all the dry farmable land that isn't used to its potential; it would decrease malnutrition and return a higher profit to farmers; it would decrease the need for imported food; and with the increased profit for farmers, they would have the potential to eventually gain access to machines and pesticides to help production. The cons, however, would involve the challenge of having to change the mindset of a lot of farmers, and getting people to shift their dietary preferences and food culture.

The pros of using the mangrove rice farming would be an increase in rice production. With the use of mangroves, farmers would save time from not having to make makeshift fences every year and not having to weed as much. This would then increase potential time to farm other crops. The USAID has done projects like this and they have seen positive results (Peterson, 2019). There are cons to this solution as well. With this plan, one would have to change the minds of the farmers on how to do things, getting ahold of young mangroves would involve work, and I am sure that this would not be a final permanent solution to the food shortage in Sierra Leone.

These solutions would reach the majority of the population, and have the potential to make a way to start solving the country's problems. While I believe that planting the mangroves would be a good option, I believe that changing the focus of farms and farmers from having rice be their primary crop would be the

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most effective, the country would be able to enough food if they utilized more land and better crops. Then once that happens, the country can address other issues.

The project would start in the government by initiating policies that provide solid clear property rights to land owners, with the promise that the land wouldn't be sold to foreign investors. The country has reported that 20% of their farmable land has been sold to foreign companies that have not helped the country like they claimed they would (Grega, 2017). My idea is to have government owned land be given, for free, to farmers whose primary crops are not rice. They then would properly and formally document the ownership of this land so then the farmers will be protected from their farms being sold.

I believe that these farmers whose land truly belongs to them will benefit greatly from the fact that they are protected and the government's power over them will have been decreased. In addition to this the people on these farms, I firmly believe, will have a boost in self worth. I think a lot of people settle for poor circumstances because they do not believe they are worth more than how their situation makes them feel. This attitude is the kind that would prohibit progress, but the change in feeling would lead to the kind of attitude that drives progress, the kind of progress that Sierra Leone desperately needs.

I believe that the project would be funded almost entirely by the Sierra Leonean government and then be carried out by local leaders. Other groups such as the USAID would be able to get involved through spreading the word to small villages with farmers. Other non profit groups could contribute through providing farmers, especially younger farmers, with the information needed when growing these crops. When implementing this plan, the community and local government workers would play crucial roles in this plan. Without the cooperation of the local authorities and the public, nothing would work or be accomplished.

When shifting the ratio of focus of the farmers from almost entirely rice to yams, sweet potatoes, and cassava there would need to be a culture change. There is a saying in Sierra Leone, "If I haven't eaten rice today I haven't eaten at all" ("Cuisine and Etiquette" n.d.). This shows how important rice is to them, but the current farming habits make it impossible to produce enough rice to be self sufficient. However, I believe the younger generation of up and coming farmers would be more willing to change, it would not be as quick as the snap of a finger, but as the younger farmers start to grow other crops over rice, more and more farmers will be drawn in once they see the benefits of the abundance of food, shown to them by the beneficiaries of the new crops. Eventually farmers in Sierra Leone will be able to produce enough food to help their country be self sufficient. In addition, once the project commences and positive results start appearing, it will be sustainable as long as farmers keep farming, and the government is honest with their promises.

While Sierra Leone's situation is poor, and the problems are complex and far from few, there is potential, and the situation has been steadily improving over time. If this project goes into effect it will provide the people with information on changes that will benefit them and their families. Individuals will be drawn to it and will be the ones who spark change, because change is truly started by the individual. Then, when the group sees the thriving individuals they will be more likely to change, eventually over time the Sierra Leoneans will be able to look towards the future instead of looking for their next meal.

Reference List

- Access to electricity (% of population). (n.d.). Retrieved from https://data.worldbank.org/indicator/eg.elc.accs.zs?name_desc=true
- Africa/. (2017, April 07). Retrieved from <https://www.worldatlas.com/webimage/countrys/africa/sierraleone/slland.htm>
- African Health Observatory. (n.d.). Retrieved from http://www.aho.afro.who.int/profiles_information/index.php/Sierra_Leone:The_Health_System
- Agriculture and Food Security | Sierra Leone. (2019, February 11). Retrieved from <https://www.usaid.gov/sierra-leone/agriculture-and-food-security>
- Average Salary in Sierra Leone 2019. (n.d.). Retrieved from <http://www.salaryexplorer.com/salary-survey.php?loc=195&loctype=1>
- Barton, A. (n.d.). *Water in crisis - spotlight Sierra Leone*. Retrieved from <https://thewaterproject.org/water-crisis/water-in-crisis-sierra-leone>
- Cago, L. (2016, February 05). Countries Most Dependent On Others For Food. Retrieved from <https://www.worldatlas.com/articles/the-countries-importing-the-most-food-in-the-world.html>
- Cuisine and Etiquette in Sierra Leone. (n.d.). Retrieved from <https://www.peacecorps.gov/educators/resources/cuisine-and-etiquette-sierra-leone/>
- Elderly population as a percent of total population (TL3). (2009). OECD Regions at a Glance 2009 OECD Regions at a Glance. doi:10.1787/reg_glance-2009-graph12_1-en
- FAO.org. (n.d.). Retrieved April 23, 2019, from <http://www.fao.org/sierra-leone/fao-in-sierra-leone/sierra-leone-glance/en/>
- France-Presse, A. (2018, August 23). *Sierra Leone launches free education for primary and secondary children*. Retrieved from <https://theirworld.org/news/sierra-leone-launches-free-primary-secondary-education>
- Grega, E. (2017, June, 15). *How to ease tensions in Sierra Leone*. Retrieved from <https://www.dandc.eu/en/article/sierra-leone-too-many-farmers-have-lost-their-fields-consequence-large-scale-international>
- Making aid more effective through gender, rights, and inclusion: evidence from implementing the Paris Declaration. (2008, June). Retrieved July 30, 2019, from <http://www.oecd.org/social/gender-development/41047211.pdf>
- Makori, D.. (2019, March 15). *Sierra Leone's dying mangroves*. Retrieved from <https://borgenproject.org/tag/rice-farming/>
- Purvis, K. (2015, July 01). *Access to clean water and sanitation around the world – mapped*. Retrieved from <https://www.theguardian.com/global-development-professionals-network/2015/jul/01/global-access-clean-water-sanitation-mapped>

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- Pushak, N., & Foster, V. (2011, March). *Sierra Leone's infrastructure: a continental perspective*. Retrieved from file:///C:/Users/Joshua Klingensmith/Downloads/AICD-SierraLeone-country-report.pdf
- Serrato, J. (2018, July 17). Crucial Developments in Sustainable Agriculture in Sierra Leone. Retrieved from <https://borgenproject.org/sustainable-agriculture-in-sierra-leone/>
- Sierra Leone agricultural sector review. (1984, March 7). Retrieved from <http://documents.worldbank.org/curated/en/360701468103744371/pdf/multi-page.pdf>
- Sierra Leone. (n.d.). Retrieved from <https://atlas.media.mit.edu/en/profile/country/sle/>
- Sierra Leone - housing. (n.d.). Retrieved from <https://www.nationsencyclopedia.com/Africa/Sierra-Leone-HOUSING.html>
- Sierra Leone: nursing agriculture back to health | Africa renewal. (n.d.). Retrieved from <https://www.un.org/africarenewal/magazine/special-edition-agriculture-2014/sierra-leone-nursing-agriculture-back-health>
- Sierra Leone: population and housing census. (2016, March 31). Retrieved from <https://knoema.com/SLPH2004/sierra-leone-population-and-housing-census?tsId=1000050>
- Sierra Leone. (n.d.). Retrieved from <https://www.everyculture.com/Sa-Th/Sierra-Leone.html>
- Sierra Leone. (2005). Retrieved from http://www.fao.org/nr/water/aquastat/countries_regions/SLE/
- Sierra Leone. (n.d.). Retrieved from https://rainforests.mongabay.com/deforestation/archive/Sierra_Leone.htm
- Sierra Leone. (n.d.). Retrieved from <https://www.state.gov/e/eb/rls/othr/ics/2011/157354.htm>
- Sierra Leone. (n.d.). Retrieved from <https://www.worldtravelguide.net/guides/africa/sierra-leone/weather-climate-geography/>
- Sierra Leone : constitution and politics. (n.d.). Retrieved from <http://thecommonwealth.org/our-member-countries/sierra-leone/constitution-politics>
- Thomas, A. R. (2017, March 21). *Conditions of Sierra Leone's road networks after spending hundreds of millions of dollars- a report by Mamba TV*. Retrieved from <https://www.thesierraleonetelegraph.com/condition-of-sierra-leones-road-networks-after-spending-hundrdes-of-millions-of-dollars-a-report-by-mamba-tv/>
- Traffic and road conditions in Sierra Leone. (n.d.). Retrieved from <https://www.countryreports.org/travel/SierraLeone/traffic.htm>
- Wittels, A., & Maybanks, N. (2016, May). *Communication in Sierra Leone: an analysis of media and mobile audiences*. Retrieved from <http://downloads.bbc.co.uk/rmhttp/mediaaction/pdf/research/mobile-media-landscape-sierra-leone-report.pdf>