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Sierra Leone and Sustainable Agriculture
Food Scarce with Food: Sierra Leone

In some countries, it may appear as though people waste more food than they consume. In others, there may not be any food for people to eat. The moments in which families lack access to food are referred to as food scarcity, and Sierra Leone is one of many countries facing this problem. However, the current state of the country and its amenities encourage optimism and investment in world leaders all over, and there has been substantial progress since the end of the civil war within the country. High rates of poverty, poor infrastructure, and social gaps within the country have made sustainable agriculture difficult, but investments in infrastructure, leveling gender inequalities, and providing more resources to rural farmers could drastically change the outlook for this country and its people.

Sierra Leone is a country located in West Africa. The government is a presidential republic similar to the US, but officials usually serve for 5 years and there is only one house in the legislative branch. It is bordered by Guinea to the north and Liberia to the south, and both make up the eastern border. The temperature of the country varies little throughout the year since it is tropical, so there are two main weather seasons: a hot, muggy, and rainy segment from May to December and a dry season from December to April. Heavy rainfall makes it one of the most humid countries in West Africa, and there are four main geographic regions — hills and mountains, plateaus, coastal plains, and interior plains, which make up the largest portion of the country (“Sierra Leone”, 2005). According to the CIA, up to 74% of the country’s 27,925 square miles of land has potential for crop cultivation but only 56.2% of it is used in that manner. In addition, the major crops exported are rice, cocoa, coffee, palm kernels and palm oil, and cashews while profitable minerals are iron ore, diamonds, and rutile. Population estimates vary widely depending on the institution conducting the measure, but generally, there is thought to be between 6.6 to 7.1 million people, with the majority (59%, via the 2015 Population Housing Census) in rural areas.

Most families in Sierra Leone are responsible for growing some, if not all, of their food, and households are usually made up of five individuals. Many households have taken in orphans or foster children following high death tolls brought by the Ebola outbreak (Demographic and Health Survey 2013), and the typical family owns 1.2 to 5 acres of land (“Sierra Leone, 2005). Ten different crops are usually grown at any time. Houses themselves are not very big, and the majority of walls and floors are made of mud or a mixture that involves mud, and roofing is made of zinc. Few people have flush toilets or any form of running water (“2015 Population and Housing Census”). Two-thirds of the population can get water from a protected source within a mile of their homes, but this percentage is lower in the Eastern region. Electricity is available with the use of batteries and rechargeables, but this is only in lighting since other utilities like the internet and refrigerators are available to less than 20% of the population, especially in personal homes (“2015 Population and Housing Census”).

A Sierra Leonean’s diet relies heavily on rice due to being commonly grown and a major import, and it can be found in almost every meal of the day followed by cassava, sweet potatoes, and sometimes groundnuts (Amadu, 6). This is sometimes eaten with salt, tea, sugar, canned goods, beans, a sauce made from pounded cassava leaves, palm oil, and chili pepper. Families that can afford fruit may include bananas, pineapples, star fruit, and citruses, while common protein sources are fish, chicken, and goat (Afs-Usa). Protein is sometimes limited in a family’s diet due to limiting purchase ability and traditional beliefs. Superstition may discourage eating eggs, and men in the household receive most of the food supply followed by women and children. The presence of vegetables in the typical diet is near to none (Amadu, 6). Food is cooked over wood fires by almost two-thirds of the population, with the remainder

using charcoal. In areas where access to protected water sources is limited, this raises concerns about food contamination (“2015 Population and Housing Census”).

The prevalence of families growing their food contributes to the comparatively high employment rate of 91.4%. Only about 10% of the population works in the public and/or private sector, and NGOs or independent businesses are the lowest employers. Agriculture in the broad sense (forestry, farming, animal production) is close to 60% of the total population, though it yields low revenue (“2015 Population and Housing Census”). In rural communities, this amount is even higher. The next major industry is services, with industrial work and accounting supporting the smallest amount of the population, and many people are leaving traditional farm work for mines since companies that can pay higher wages or partially cover rent (“The Challenges of Attaining Food Security in Sierra Leone”). According to UNDP (2015). Limited education and healthcare availability within the country keeps many individuals from learning other specialties that would provide a higher income or allow them to receive medical attention, and the majority of the country lives on under \$1.25 a day. (Amadu, 2).

Just over half the population has attended school at least once in their lifetime, and only 37% of those are still in school. Males attend school more frequently than their female counterparts, and overall, they are more likely to have *ever* attended school. In rural areas, the amount of people who have never attended school is a third more than that of urban areas, and as a whole, enrollment decreases at higher levels of education (“2015 Population and Housing Census”). Poverty means that as children age, they are expected to support the household’s income, and it is less convenient to attend school at the same time. This reality also holds for markets and medical attention, where a third of the population is 1-5+ miles from a healthcare facility, and families cannot afford any necessary drugs or medication (“2015 Population and Housing Census”). Life expectancy at birth is as low as 46 years, the lowest in the world, according to the WHO 2015 ranking (Amadu, 2).

However, current conditions are improving, and Sierra Leone is unique since agricultural shortcomings aren’t necessarily the issue in and of itself. Citizens within the country have access to food but can’t afford it: most farming is done only at the subsistence level (“The Challenges of Attaining Food Security in Sierra Leone” and “Agriculture and Food Security”). Low food production is the result of the average farmer having poor knowledge of soil management and crop production, leading to soil degradation, and they lack the resources to fill this gap. (“2015 Population and Housing Census”).

Lack of agricultural sustainability affects certain populations more than others, especially those in rural communities. Rural areas contain the bulk of the country’s population, and men usually dictate how money is spent and inherit land, leaving women and children with less access to food due to feeding order (Amadu, 8). Limited education for women, along with cultural norms, means that while women play a major role in crop production at home and child-rearing, there is little opportunity to get a job that might contribute to the family income in a meaningful way (Amadu 8). Sierra Leone is rated the lowest country in West Africa on the Global Hunger Index, a measurement of “undernourishment, stunting, wasting, and childhood under-five mortality”, and in some regions up to 7/10 households are food insecure. Thirty percent of children under five are chronically malnourished and 22% of the total population is (Amadu, 8).

Hunger peaks from June to August, known as the lean season (Amadu, 5-6). The dry season is usually just now coming to an end and transitioning into the rainy season. Households are low on food from the previous harvest and the harvest will not be ready for the next few months. A contributing factor is a heavy reliance on rice, a crop that even former Minister of Agriculture Joseph Sam Sisay encouraged a divergence from (Ighobor, 2014). The government used to import an even larger supply of rice, too, until spending on food imports halved between 2007 and 2013 to encourage native food production (Ighobor, 2014). This cut is widely believed by professionals to be necessary to promote more nutrient-rich foods and because rice production is not fast enough to support the demand of the country (Serrato, 2019).

This is viewed as one step in the right direction. Again, the burden is less on having food in the country and more on being able to attain it. The strain from a lack of sustainable agriculture could be alleviated in three major ways: The first involves improving farmer access to education and to begin improving gender inequality. The second involves infrastructure and restructuring financial systems. The third involves biofortification experiments.

Despite the dominance of women farmers they are severely uneducated, unprotected, and represented (Amadu, 7). Only 10% of the legislative branch is female (“The World Factbook: Sierra Leone”) and customary practices and law are unfavorable. Less than 10% get a secondary education or higher since they are often married while underage and reduced to home managing (Amadu, 7). Aid for abuse or property ownership is rare since women are seen as secondary to men. (Davies, 2005). Few general laws address these inequalities, and those that exist, such as the Childs Rights Act of 2007 (prohibits child marriage), are poorly enforced (Amadu 7-8). By enacting laws that can be upheld, women may find themselves less constricted by obligation and expectation. They could expect to own land, attain the resources to upkeep it, and be encouraged to make financial decisions or ventures on their own without retaliation. Female farmers have long argued against the land systems that mean inheritance is by way of males, making land acquisition even more difficult (“The Challenges of Attaining Food Security in Sierra Leone”), and even after their husbands pass, they are only eligible to a third of the estate (Davies, 2005). Educating farmers and better connecting them with foreign aid partners committed to instructing agricultural practices would be an incredible improvement since the majority lack knowledge regarding crop rotation, preserving soil fertility, pest control, and disease vulnerability. Most are not aware of what tools exist that would make their cultivation easier or how they would be used (Amadu, 5). Current efforts are lacking due to how sparse the effort is throughout the rural area. This comes with a long history and cultural barriers (Davies, 2005). Culture is more difficult to counter since it is often ingrained in an extensive history and holds influences beyond the legal system. Still, there’s been promise with all-girls schools and foundations for girl orphans in other parts of Africa, and government sanctions of this may be helpful (Davies, 2005).

Investments countering physical barriers would better connect the industry, too. Most obvious is the need for properly constructed roads. Rural areas are disconnected from what markets do exist, along with other institutions including medical centers and schools. “These factors severely constrain the expansion of farm incomes to pay for other necessities, including food” (“Sierra Leone”, 2005). Many extension efforts are foreign-led where the terrain is less known or accessible by their knowledge (Amadu, 2) An example is the USAID program Securing Water for Food which encourages an aquaculture crop produce model designed to increase crop harvests, thereby raising the income and improving access to nutritional foods (“Agriculture and Food Security: Sierra Leone”). A reliable increased income might increase the number of people open to diversifying their crops and also aid their ability to secure loans. Loans are associated with high interest and monthly payments wouldn’t be able to be met until after the harvest (Amadu, 4). Existing programs have sought to remedy this, including USAID, by connecting farmers to financing institutions. It is programs like this that sometimes provide grants to these farms and businesses and conduct training (“Agriculture and Food Security: Sierra Leone”), and improvements have been visible through them (Amadu, 8-9).

The third solution follows the work of the 2016 World Food Prize winners. Though professionals have already discouraged rice reliance in favor of sweet potatoes, cassavas, and yams, the convenience of rice has still prevailed. The current improved sweet potato could be brought here and promoted through media, local tours, and in school to give the people a healthier secondary option, but with rice still surpassing all other consumption, it may be worthwhile to attempt biofortification, or crop breeding with specific intents and resistance, with it too. Goals would include holding a higher nutritional value, needing less water, and decreasing harvest time, but it can take years to breed the ideal crop. This would

be the responsibility of higher research institutions, which could be incentivized as mentioned earlier, but other routes would need to be utilized to solve hunger until then. Once a successful crop that meets all these goals is bred, it could be promoted in the same way as the sweet potato. Familiarity would mean farmers would not have to change their current growing practices, saving them the burden of gathering water.

The problem is many non-governmental organizations face labor shortages, poor training, lack of transportation or communication ability, poor public perception, and low visibility. Many assert that these programs have been rushed with the intent of alleviating short-term pressures rather than long-term projects (Amadu, 9-12). It may be more beneficial if they were centralized and mobilized under one larger head, preferably led by the government or at least in close working connection, alongside the efforts done by organizations like the UN and USAID. Though there may need to be an investment in communications, the efforts that are present can be more effective and proficient, and the reorganization of these groups may be better able to reach the rural communities that could benefit from this instruction (Amadu 12-13, 15).

These solutions would address both the population at large and marginalized communities. At best, they combat the issues obstructing sustainable agriculture initiatives while establishing a new order of practice that leads to a gradual overall shift. My immediate suggestions would include more deliberate, intentional efforts to combat the gap between men and women in addition to infrastructure developments to improve aid. Large, sudden changes to financial institutions may be risky, and it could be years before a genetic breakthrough in rice. These resources would allow the population to take initiative over their farms and harvests would establish a common set of skills and knowledge that could be utilized while improving the financial status of households to stand independently before interfering with other areas. At this point, information transfer would be accelerated versus never having been implemented in the first place.

Luckily for Sierra Leone, there are many countries and foreign efforts that see its potential and contribute a lot of funding and organization efforts as documented and Amadu's report throughout pages 9-12. The country is not faced with the same uncertainties other countries might have regarding how these projects would be funded. Also, the cuts that have come from reducing food imports could be allocated towards these programs or even as raw federal grants to these institutions, students, farmers, and women to invest in their farms or education (Amadu, 8-9). MAFFS is the name of the government unit that oversees all of these kinds of farmer outreach programs and drafts legal policy, and it has seven divisions: Crops, Livestock, Forestry, Agric-Engineering and Services, Planning, Evaluation, Monitoring and Statistics, Agricultural Extension Services (Amadu, 8). Public efforts would be sorted under one of these categories and then managed through the government, non-governmental and foreign organizations, and lastly at a lower, sometimes city or district level, with the Services, Planning, and other logistical sectors having a hand in all projects (Amadu, 8). This specialization and thorough planning in efforts are what has allowed efforts to be successful, but the pacing is sometimes slow because there are so many divisions that an effort may have to go through. Still, it is the largest functioning effort to counter food insecurity in the country, native run and founded, and is woven through the Sierra Leonean government sometimes gives it a leg up over other relief efforts like USAID and others. As a side note, the government should consider nixing these separate logistic divisions within MAFFS to give each defined industry sector administration over itself. Putting these responsibilities closer to the field level would allow professionals to personally engage in their task without distraction and encourage in-depth overview of all progress or set-backs for future projects, and it may allow officials to develop and respond to needs faster. This may also incentivize advertisement efforts, allowing more farms to be aware of the resources available to them.

It may be noted that these programs are often similar or that there are multiple different programs under the funding of one country. Sierra Leoneans are already lacking in laborers and dividing them so far

puts fewer native individuals in each program (Amadu, 9). Better utilization of resources would be to combine some of these programs to provide continuity and create a program whose results are more substantial and sustainable. An example of this would be to combine the six-year planned Smallholder Commercialization and Agribusiness Development Project (SCADP) and the three year Boosting Agriculture and Food Security (BAFS) project since they are both designed to target infrastructure shortages and provide production and diversity information to farmers. Besides, agricultural training and research universities in Sierra Leone, like Njala University and the International Institute for Tropical Agriculture, should be encouraged to become more involved through Grant, job positions, or paid internships. Food security wouldn't just appear as a problem of the poor, and labor could be recruited with these positions (including foreign professionals) at higher levels of influence.

Efforts to improve farmers' outreach, including that by gender, should all aim to be at least six or seven years based on meager but optimistic results from the country's last Agricultural Business Center initiatives in 2010. In only three years, the percentage of businesses that were still maintaining good results and a return in investment was 25% of all that were started, signifying potential to decline quickly, but still reaping benefits (Amadu, 9). Had the program ended then, the government and organizations would not be able to assess what was contributing to these failures and whether the overall methods used were headed in the wrong direction or just applied in a poor manner. In the case of gender-based outreach programs, it would be best if the divisions appointed someone representative or at least relatable to the population they intend to work with. While it is understandable that many of the voices over the team may be male out of educational discrepancies, this should not be at the cost of female voices. Legislation and advocating on behalf of women should be visible and more importantly, enforced in courts by holding offices accountable and throughout these social initiatives.

The country may find more success by explicitly involving everyone from ordinary citizens to international organizations to government officials. Aside from restructuring MAFFS, the government may benefit from collaborating with other African countries as more than charity, though limited resources sometimes encourage competition rather than cooperation (Munang and Han). Considering Sierra Leone in direct relation to its neighbors, it trails significantly behind despite shared complications (Amadu, 8). By crossing solution efforts, this gives access to a larger labor force, greater funding, and basic necessities. Projects could be more widespread through multiple stakeholders, and accountability would be found in several stakeholders. The success of this has been visible in all parts of the world from the SARS and avian flu pandemics of the Middle East to West European water security (Munanag and Han). This might make major efforts like infrastructure more feasible. Global organizations may reevaluate their visions, too, especially considering that hunger in Africa is frequently focused only in the Sub-Saharan region with little acknowledgment to other regions ("Where does hunger exist?"). This narrow view is what makes it so difficult to gain support for this issue. Understanding this severity may incentivize investment in these countries, especially promising ones like Sierra Leone, and produce more dynamic efforts that families can maintain without direct foreign inhabitation. Closer operation with MAFFS and adapting to current practices rather than openly challenging them with completely new approaches may make Leonans more receptive to this aid, encouraging more aggressive foreign efforts later. The strong degree of tradition in the country may gradually open up to honest work endorsed through cross country collaboration and payment, .

Eradicating food insecurity in Sierra Leone is not a task anyone should feel hopeless about. The country has a wide support system and resources available to it, the difficulty is just in figuring how to best utilize them. To counter the country's biggest obstacles in sustainable agriculture, the issues of gender inequality, farmer's aid, lack of infrastructure, financial aid, and over-reliance (combined with a lack of wanting to vary) on rice. In my reflection, I advise improvement and revision to aid efforts and connect the country through roads first. In time, the country can emphasize crop research and other

shortages, but as a beginning, this gives the people a hopeful chance at improving their own lives as they currently are.

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