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 Nigeria, Infrastructure

Farm to Table: An Innovative Approach to Feeding Nigeria

Nigeria is an emerging market in the international community (“New Emerging”). Its growing economy and expanding populations gives it the potential to be a superpower (“New Emerging”). This makes investing in Nigeria a wise decision for outside actors. However, in order for Nigeria to unlock its full potential, Nigeria must address food insecurity in its country through improving its infrastructure. The “farm to table” approach can address three types of infrastructure: irrigation infrastructure, road infrastructure, and soft infrastructure (education). Focusing on upgrading existing infrastructure and expanding these types of infrastructure can help Nigeria strengthen its economy and ultimately feed itself.

With over 900,000 square kilometers in land, Nigeria is home to over 219 million people, making it the most populous country in Africa (“Nigeria - the World Factbook”). As of 2020, 52% of the population lives in urban areas, while 48% lives in rural areas (“Nigeria - Rural Population”). “Nigeria hosts a tropical climate with rainy and dry seasons” (“Nigeria - Climate”). The rainy season varies, with the geographical south having a longer rainy season than the north, which in turn causes more rain (“Nigeria - Climate”). The country currently has 70.8 million hectares of agricultural land cultivated (“Nigeria at a Glance”). The average national farm size is 0.85 hectares, other farm sizes is 3.14 hectares and smaller farms is 0.53 hectares (“Indicator Details”). Compared to nearby Ghana the figures are 2.56 hectares, 6.33 hectares, and 1.56 hectares respectively (“Indicator Details”).

“The average household size in Nigeria is 4.7 persons. Urban households are slightly smaller than rural households with a ratio of 4.3 persons versus 5.0 persons” (Nigeria DHS). In these households, food is made from “maize, yams, cassava, and plantains” (“Take a Taste”). Such crops are abundant in Nigeria since most of these items are major exports (“Nigeria at a Glance”). With these items families make “tomato stew, porridge, soups such as egusi soup, and jollof rice” (“Take a Taste”). “80% of Nigerians usually get their produce from local markets” (Borgen Project). They cook their meals with fuel either inside or outside of the house. It is reported that “in 40% of households, cooking is done in the house with the breakdown being 48% in urban areas and 34% in rural areas” (Nigeria DHS).

While many Nigerian households purchase food from markets, a considerable portion of households grow their own food. In fact, “88% of farmers have small family farms” (*Nigeria Small Family*). Most of these farmers consume the crops that they do manage to grow. On average, “87% of crops grown on small farms are consumed by the household” (*Nigeria Small Family*). This leaves little room for food to be available to trade. This unfortunately contributes to the overall poverty for Nigeria’s small farm owners. “More than 72% of Nigeria’s smallholders live below the poverty line of USD 1.9 a day” (*Nigeria Small Family*). This rate is disproportionately high compared to the national average where “40% of Nigerians (83 million people) lived below the poverty line” (“Overview”). For reference, the amount of money needed to have a living wage in Nigeria which is 43200.00 NGN (104.50 USD) per

month for individuals and for families it is 137600.00 NGN (331.41 USD) per month (“Nigeria Living Wage”).

In addition to poverty, there are other barriers Nigerians families face. “Thirty-six percent of females and 27% of males in Nigeria have no education” (Nigeria DHS). This disparity is even apparent when it comes to rural versus urban areas. “Twenty percent of females aged 6 and older in urban areas have no education, as compared with 49% of females in rural areas. For men, the proportions are 13% and 37%, respectively” (Nigeria DHS). This causes difficulty in securing jobs that pay a living wage. Malnutrition among children is also prevalent in Nigeria. “The figures differ with geopolitical zones, with 56% reported in a rural area of South West and 84.3% in three rural communities in the northern part of Nigeria” (Akinleye).

Given the need for food insecurity in Nigeria, the national agricultural sector should be expanded in order to solve this issue. Currently, “[the] majority of Nigerians depend largely on subsistence agriculture, which is hardly sufficient to meet the food needs of the population” (Akinleye). In order to meet the demand for food, the government currently relies on exports. “Nigeria relies on \$10 billion of imports to meet its food and agricultural production shortfalls (mostly wheat, rice, poultry, fish, and consumer-oriented foods)” (International Trade). This is higher than the agricultural export of N803 billion (1,945,676,066.40 USD) (Nigeria at a Glance). Nigeria has the capacity to fulfill it’s people’s needs. However, in order to do so, there must first be upgrades to the nation’s infrastructure.

“Infrastructure can be defined as a term that describes various types of physical structures used by industries as inputs for the production of goods and services” (Ebuh). The state of Nigeria’s infrastructure is dismal. “World Economic Forum’s 2019 Global Competitiveness Index has ranked Nigeria 116 out of 141 countries, largely due to the poor state of its infrastructure” (Ita). Many factors contribute to Nigeria’s decaying infrastructure. Some problems “range from the lack of adequate fiscal revenue, weak institutions, lack of accountability and limited policy consistency across different administrations to poor regulatory framework” (Ita). Subpar road infrastructure can lead to traffic congestion in urban areas (Ukpata). Such traffic congestion can lead to delays in critical shipments such as perishable goods. Perishable goods such as food can go bad if not delivered in a timely manner. Poor infrastructure in rural areas can lead to increased trade barriers, which negatively affects the way in which rural families have access to food. Conversely, there are a multitude of benefits when infrastructure is improved. Improving infrastructure can improve the economy, in addition to lowering trade barriers, and enlarging markets (Agbigbe). “Road transportation infrastructure underlies the more visible forms of capital, facilitating the delivery of inputs to places of production and the delivery of finished goods to marketplaces. Road transportation infrastructure also supports various social services, providing access to schools, hospitals, and places of employment” (Agbigbe). Therefore, investing in infrastructure can “drive economic growth, provide jobs, and deliver vital services to the country and the majority of its citizens” (Ita). But in order to eradicate the problem of food insecurity in Nigeria, the definition of infrastructure must be expanded.

The definition used by the government of Nigeria must not only focus on road infrastructure, but also make improvements to irrigation infrastructure, and soft infrastructure, specifically education. Roads will make transporting goods easier, but people with qualifications to operate trucks are needed in order

to transport such goods. Education will help people learn how to turn a profit on their farms and produce more crops. The focus on these areas of infrastructure can be labeled as the “farm to table” approach.

The “farm” aspect of this approach focuses on improving infrastructure for farms. Irrigation infrastructure must be in place on farms. Irrigation is defined as “the process of applying water to the crops artificially to fulfill their water requirements” (Admin). In Nigeria “only 1 percent of Nigerian cropland is irrigated, meaning most farmers can cultivate their fields only during the rainy season” (You). This does not provide for a sustainable source of food, especially for families who rely for subsistence farming. To combat this problem, multiple forms of irrigation should be implemented. “The three main methods of irrigation are surface, sprinkler and drip/micro irrigation” (Bjorneburg). However the cost of many irrigation systems is a deterrent for farmers to implement them. Costs can run upwards of \$1000 USD (Polak). The government should fund modern irrigation systems. Utilizing low cost micro irrigation systems can help solve this issue. In India, low cost micro irrigation was used to produce mulberry plants (Polak). The upsides of low cost micro irrigation is that it provides a quicker solution to irrigate farms. However, the downsides of this form of irrigation is that water might not be distributed evenly to all crops. “Initial observations indicated that mulberry plants irrigated by the low cost drip system demonstrated a less uniform growth rate than plants irrigated with the standard drip system” (Polak). Nigeria should be prepared to bear the cost of such systems. Improving infrastructure can decrease Nigeria’s reliance on food imports, as well as diversify its economy away from oil (FAO). At present, the government runs initiatives such as the Anchors Borrowers Programme, which is a loan to support farmers and promote the growth of cash crops (“CBN”). This Programme has been proven to be beneficial, however, “the ABP has been fraught with reports of non-repayment of loans” (“CBN”). This concern can be solved by the government forgiving previous loans and instead using the Anchors Borrowers Programme to issue grants for the funding of more sophisticated irrigation such as drip irrigation.

In the phrase, “Farm to Table”, the prepositional word “to” represents the transport of food *to* Nigerians. In order for food to reach every Nigerian, improvements must be made to road infrastructure. Nigeria’s current infrastructure deficit costs \$100 billion annually, and is projected to be at \$34.51bn (Adenuga). The deficit is characterized by “poorly maintained” and “unpaved roads” (Babalola). Only “60,000km out of its estimated 195,000km or road network is paved” (Babalola). “Transportation infrastructure, including roads for automobiles and trucks, facilitate economic development and drive economic activities in developed countries” (Agbigbe). “Raising Nigeria’s infrastructure to the level of the African leader, Mauritius, would boost annual per capita growth rates by 4 percentage points” (“Foster”). The government should be prepared to invest a significant amount of their GDP in this venture. “Nigeria already spends \$5.9 billion per year on federal infrastructure, equivalent to about 5% of GDP” (“Foster”). In comparison, “China committed to invest 7% of GDP on transportation infrastructure systems” (Agbigbe). As of late, President Muhammadu Buhari has created the Infrastructure Corporation of Nigeria, which wants to raise \$36 billion for new projects (Games). This new initiative is promising, as it shows the Nigerian government’s willingness to invest in road infrastructure.

The “table” represents how Nigerians are receiving this food. When food is brought to the “table” it is equally important to think about who is eating such food. The median age of Nigerians is 18.6 years old (Nigeria- the World Factbook). With such a young population, the government should utilize them in efforts to stop food insecurity. There should be an emphasis on education, which can help bring Nigerians

out of poverty. The government should fund more vocational training schools, and help more Nigerians get access to proper licensing in order to move goods around the country. The increase in infrastructure projects can create jobs as well, which can help Nigerians deal with the short-term increase in food prices. The government can also support NGOs that help empower farmers, which in turn can lead to more crops and higher profits. For example, Business Women Connect, helps “women rice farmers access the knowledge, tools, and connections they need to achieve greater economic independence” (“Women in Agribusiness”). This program educates rural women on how to apply fertilizers and agrochemicals, as well as teach women financial literacy (“Women in Agribusiness”). With such techniques, women found that their average crop yield went from 2.9 tons per hectare to 5.1 tons per hectare (“Women in Agribusiness”).

In summary, Nigeria is a burgeoning country with a lot of potential. The full potential of the country can only be realized through improving its infrastructure. The implementation of the “farm to table” approach can address the inequities seen in Nigeria, especially with regards to urban versus rural areas, and gender. The government has the funds and young talent necessary to achieve food security for all. NGOs and other actors can have a hand through loans, but the only way that Nigeria can be fully industrialized is by being self-sufficient in fulfilling its agricultural needs.

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