

**Enhancing Food Security in Lagos, Nigeria.**  
**Restructuring Africa's Largest City's Food Supply Through Urban Farming**

**A Policy Proposal for Babajide Sanwo-Olu, Governor-Elect of Lagos State**

**MWAKU GUY FUTU**

**MAY 9, 2019**

**In Partial Completion of Master's in International Relations  
HARVARD EXTENSION SCHOOL, POLICY ANALYSIS CAPSTONE**

## Table of Contents

<i>Executive Summary</i>	1
<i>Policy Topic</i>	2
<i>Definitions</i>	3
<i>Background of the Problem</i>	4
<i>Agriculture in Nigeria</i>	5
<i>Nigeria's Infrastructure Deficit</i>	5
<i>The Benefits of Urban Farming</i>	5
<i>Legislative History</i>	7
<i>Current Zoning Landscape</i>	8
<i>Land use in Lagos today</i>	9
<i>Lagos State Development and Property Corporation</i>	11
<i>Methodology</i>	12
<i>Policy Alternatives</i>	13
<i>Land Reform</i>	13
<i>Failing to Act</i>	15
<i>Creating the Lagos State Agricultural Development Corporation</i>	16
<i>Policy Recommendation</i>	18
<i>Conclusion</i>	21
<i>References</i>	22

## Executive Summary

Despite the impressive wealth of Lagos State, ranked as the third biggest economy in Africa, the city struggles to maintain adequate levels of food security. This lack of food security jeopardizes hard won economic gains. Economic gains, which are needlessly, wiped away when the effects of a lack of food supply manifests. This policy proposal advocates for a clear yet powerful proposal:

*That Lagos State restructures residential, industrial and commercial zones to include a clause that will permit agricultural activity that is less than one acre in size (subject to local government area rules and regulations) and to allow urban farmers to sell goods from agricultural activity throughout the city. This proposal, with the backing of the Governor of Lagos, will restructure food supply enhancing Lagos' food security.*

The policy proposal begins by exploring the lack of food security in Lagos, Nigeria and its negative side effects on everyday life. It then dives deeper by presenting the context unto which food security became a pressing issue. Three alternative policy proposals are presented through various lenses. The first policy alternative, land reforms, is explored but is ultimately ruled out due to low legislative support, medium levels of staple crop yields, high levels of costs to the government and low stakeholder support. A second policy alternative which advocates for legislators to do nothing was discarded out due to high governmental costs and low levels of staple crop yields. The third policy alternative advocates for the creation of a new branch of government called the Lagos State Agricultural Development Corporation was ultimately sidelined due to low levels of staple crop yields.

Urban farming has been applied globally with definitive success. Households in Kampala, Uganda that practice urban farming see an improvement rate in the nutritional status of children. Urban farmers in Mali and Ethiopia receive economic wage returns akin to the income of unskilled construction workers. American urban farming startups have secured millions of dollars' worth of funding from renowned executives. The template for success can be replicated with great success in Lagos State.

Lagos's attempts at creating adequate, accessible and affordable levels of food security needs immediate restructuring. Small agricultural activity in residential, commercial and industrial zones would have tremendous positive impact on enhancing food security in Lagos. The government should use urban farming as a tool to address the financial, health and environmental issues plaguing Lagos State. Urban farming reduces the distance food travels which reduces the high rate of perish and positively impacts the environment. Urban farms have the potential to keep millions of unemployed youth active and fed. Moreover, it can act as a source of income in a market where farmers are permitted to sell excess produce.

Lagos is in dire need of a solution. Food scarcity is an epidemic that shows no signs of slowing. Through an executive order and key stakeholder input Lagos will enhance its food security. Lagos can either continue to behave as it does by importing foods and not promoting urban agriculture or it can take matters into its own hands and develop a robust urban farming policy that will secure food supply while maintain the young country's growth.

## Policy Topic

Lagos State is a large and vibrant West African city. Lagos' gross domestic product (GDP) trails only the Republic of South Africa and its host nation of Nigeria. With over 21 million inhabitants, Lagos is the most populous city in Africa. It is the financial capital of Nigeria, Africa's largest oil exporter, and is a significant contributor to Africa's growth story. Despite Lagos' economic vibrancy, food security in Lagos threatens its development. USAID notes that over 50% of Lagos' population is plagued with minimal food insecurity.<sup>1</sup> Lack of food security places pressure Lagos' government to build welfare services. Lack of food security threatens productivity by limiting the amount of able-bodied participants in the job market, and it also creates an imbalance in trade accounts by wiping out foreign exchange reserves due to increased importation of food. Lack of food security handicaps Lagos's tremendous growth potential.

Nigeria is a land with tremendous agricultural potential, yet structural challenges hamper its food security. It is estimated that 82 million hectares of land in Nigeria is arable, yet less than half of it is utilized.<sup>2</sup> Furthermore, the lands being cultivated yield outputs far below those of leading agricultural nations. Experts claim poor technology, a weak value chain, and low literacy levels as causes for an underperforming agricultural sector<sup>3</sup>. Of the crops that Nigeria produces, it is estimated that more than 12% are lost in harvest and 40% perish on their way to cities.<sup>4</sup> To put it in perspective, India yields anywhere between 4 to 5 tons of rice per hectare. Yet, Nigeria yields only 440 kg of rice per hectare. If 12% is lost at harvest and a further 40% perishes in transit, of the 440 kg of rice, less than 235 kg make their way to Lagos. This is a reason behind 2,187,370 metric tons worth of rice imports by Nigeria in 2013. To compound matters further, Lagos recorded one of the highest migrant inflow rates in Sub-Saharan Africa, according to Akinwunmi Ambode, Governor of Lagos, Lagos receives more than 200 migrants every day.

The people of Lagos have turned to the dangerous practice of importing staple goods to harmonize their food security. This practice has had profound negative fiscal implications. In 2017, Nigeria imported more than USD5 billion dollars' worth of food, much of it earmarked for Lagos.<sup>5</sup> The majority of goods and commodities on the international market are denominated in US dollars. Importing goods to the tune of billions of dollars can wipe out much a country's economic gains. The importation of commodities and staple goods in Nigeria was one of the factors leading to a devaluation of Nigeria's currency (the Naira). From 2015 to 2016, when oil prices dropped and much of the foreign reserves were depleted, the Naira to USD exchange plunged from NGN200:USD1 to NGN500:USD1.

The people of Lagos have sought the help of neighboring provinces to strengthen food security, however, poor the road networks and lacking infrastructure coupled with inconsistent food quality has done little to offset Lagos' high demand for food. Much of Nigeria's road networks remains under developed. It is estimated that Nigeria needs an infrastructure investment of nearly USD200 billion dollars to effectively connect the entire country.<sup>6</sup> In the meantime, staple crops travel through a network of corridors unsuited for agriculture transportation. Almost half of crops perish

---

<sup>1</sup> Food Security Portal Facilitated by IFPRI. <http://www.foodsecurityportal.org/nigeria/resources> Accessed March 2019

<sup>2</sup> Food Security Portal Facilitated by IFPRI. <http://www.foodsecurityportal.org/nigeria/resources> Accessed March 2019

<sup>3</sup> Trading Economies. <https://tradingeconomics.com/nigeria/arable-land-percent-of-land-area-wb-data.html>

<sup>4</sup> Agoda p. 34

<sup>5</sup> Benson

<sup>6</sup> Ogun p. 23

by the time they arrive to Lagos. Secondly, food inconsistency threatens food security. Due to unsophisticated farming practices and poor agricultural technology, basic crops are barely not fit for consumption. It's been noted by The International Finance Corporation that Nigerian farmers need considerable amounts of assistance to improve their farming techniques.<sup>7</sup>

Nigeria has an estimated 71 million hectares of cultivable land, yet only half of it is currently used for farming. Much of the land lacks proper irrigation and consists mostly of rural farmers who practice subsistence farming. These farmers use small plots and depend mostly on seasonal rainfalls. The lack of effective utilization of arable land is further exacerbated by poor infrastructure. Lack of adequate roads and poor train networks render it nearly impossible to connect rural and farming areas to major cities. This isolates farmers from not only exporting their crops to the rest of the country but cuts them off from much needed inputs such as fertilizers, seeds, technical know-how, equipment, etc... which is necessary to feed a rapidly growing population

In order to harmonize and secure staple crops in Lagos, policymakers cannot rely on the importation of goods and neither can they rely on neighboring provinces to supply its demands. Lagos state must look inwards to find a long-lasting agricultural solution. To look inward is to adopt a policy that will facilitate urban farming.

#### Definitions

Urban Farm: *An urban farm shall mean privately or publicly owned land within an urban area used for cultivation of fruits, vegetables, plants, or herbs, (and/or for animal products, livestock production, or value increase) by an individual, organization, or business with the purpose of growing food for either consumption or domestic sales.*<sup>8</sup>

Food Security: *Food security shall mean all people, at all time, have physical, social, and economic access to sufficient, safe, and nutritious food that meets their food preferences and dietary needs for an active and healthy life.*<sup>9</sup> Much of the security of an active and healthy life depends on staple crops.

Staple Crops: *A staple crop dominates the major part of our diet and supplies a major proportion of our energy and nutrient needs. Nigeria's staple crops consist of wheat, rice, yam, cassava, sorghum, millet, beans and okra.*

---

<sup>7</sup> Trading Economics. <https://tradingeconomics.com/nigeria/arable-land-percent-of-land-area-wb-data.html>

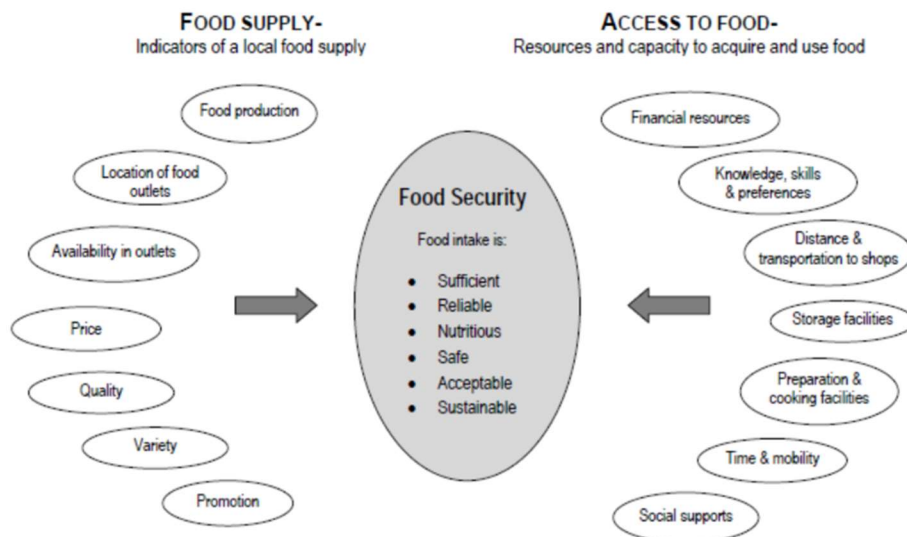
<sup>8</sup> Mechlehem, p. 642

<sup>9</sup> United Nations' Committee on World Food Security

## Background of the Problem

Despite its economic prowess and the designation as West Africa's financial hub, poverty throughout Lagos State remains widespread and continues to increase along with an ever-growing population density. More than sixty percent of Lagos State's population live within the poverty bracket. They live on less than US\$1.25 per day. Poverty is especially widespread in pockets of Lagos accommodating recent migrants to the city. These poverty pockets harbor new migrants within their enclaves.

The leading contributor to poverty in Lagos is the lack of employment and food security. There are not enough staple crops circulating to feed millions of hungry people. This situation can be broken down into two buckets, the first, a lack of local food supply, and the second, a lack of resources to acquire or develop adequate food supply. Lagos State produces very little food, has even fewer food outlets and suffers from poor quality of foods at expensive prices. As of today, Lagos is a net importer of food. On the other hand, few people have the financial resources to invest in efficient farming that will secure the food supply, few possess knowledge, skills and preferences to produce high quality foods, and Lagos State does not have adequate infrastructure to acquire and use food. The result is a population that does not have sufficient, reliable, nutritious, safe, acceptable and sustainable food.



## Agriculture in Nigeria

Agriculture is a significant contributor to Nigeria's economy. It employs more than two-thirds of the labour force and contributes to more than forty percent of Nigeria's GDP (IFAD 2012). "Nigeria is the world's largest producer of cassava, yam and cow"<sup>10</sup>. It produces more than 6 million metric tonnes of rice, 10 million metric tons of maize. Despite this production, Nigeria cannot feed its ever-growing population of more than 185 million people, let alone Lagos State.

<sup>10</sup> <http://www.foodsecurityportal.org/nigeria/resources>

Today, Nigeria is a food-deficit nation and depends on the importation of livestock products, fish, grains and leafy greens.

The Government of Lagos State has responded and observed the people's plight for food and has developed strategies to eliminate the high spend on food items. These strategies range from food subsidies, food stamp programs, to school children and mother feeding programs. These strategies have yielded very little result. The poorest of Lagos still find themselves in a dangerous cycle of hunger.

### Nigeria's Infrastructure Deficit

Nigeria faces a multibillion-dollar infrastructure deficit which is slated to reach more than US\$200 billion.<sup>11</sup> There has been very little assurance from the presiding government that infrastructure development will come quickly to Nigeria. The slow pace of infrastructural development creates difficulties for rapidly growing cities to connect through a network of roads and trains to a much-needed crop market. Lack of current and future infrastructure places further strain on existing agriculture, resulting in over farmed lands, overgrazing and increased deforestation.

Despite the abundance of arable lands, Nigeria's poor farming capabilities and even poorer network of infrastructure creates a scenario that forces Lagos to secure food supply from out of country sources. It is estimated that Nigeria imports more than US\$5 billion worth of food. Analysts suggest that a considerable percentage of the imports are earmarked for Lagos. Importation of foods places the future economic viability of Lagos at risk. According to How Asia Works, a book on economic development written by Joe Studwell's in 2013, inadequate food production means that the state is wasting resources importing foods. Importing foods wipe away precious foreign exchange gained from exporting services, technology and commodity.

Lagos State, Africa's third largest economy, is at risk of endangering its economic potential because of poor food security. Nigeria exports US\$46.7 billion dollars' worth of goods per year. More than ten percent of these reserves are wiped away considering it imports more than US\$5 billion dollars' worth of food. Between 2015 and 2016, there was a total of 189,510 metric tons of tomato paste imported, and US\$300 million worth of fruits and vegetables. Wheat and rice rounded up the remainder. With the billions of dollars at play, food security has become a pivotal cog in the economic viability of Lagos State.

Lagos State cannot continue to import foods neither can it depend on Nigeria's low-yielding agro-sector with poor infrastructure for sustenance; it must look to new innovative internal solutions such as urban farming to secure its food supply.

### The Benefits of Urban Farming

Urban farming solves food security security in Lagos State. Enacting urban farming in Lagos State would reduce challenges plaguing the transportation of food crops throughout the country. Food grown within the Lagos city limits would stems the flow of international source of foods. It provides the people of Lagos direct access to a food supply. A direct food supply eliminates the potential loss of crops that perish during transportation. Leafy greens are typically grown outside

---

<sup>11</sup> <http://www.foodsecurityportal.org/nigeria/resources>

the city of Lagos and perish on their way to the market. Urban farming would eliminate this loss of crops. Urban farming also has the potential to reduce the cost of leafy greens, as more of them would make it from the farm to the table, producers would not have to charge a transportation or logistics surcharge.

Lagos is connected to several electrical grids and boreholes. Unlike the rest of Nigeria, where it is difficult due to draw upon steady electricity, many businesses rely on diesel generators to power anything from homes to commercial shopping centers, Lagos has the capability to provide a steady flow of abundant energy. Farmers could use far more advanced techniques within the city of Lagos with grid connection and clean water access.

Urban farming can reduce the poverty levels of Lagos State. Urban agriculture can become an important source of subsistence and income. It can be a tool for the food insecure to produce crops they can consume or sell directly. This can sustain the livelihoods of urban dwellers. In many parts of the globe, urban farming is undergoing massive investment and growth. In the US, an urban farm called **Plenty** built over 300 indoor farms has raised over US\$200 million in venture funding from billionaire investor Jeff Bezos. In Yaounde (Cameroon), there are farmers who use wastewater irrigation during the dry season to sell vegetables at more than double their value. Urban farming is a tool that can be used by the food insecure to supplement weak household incomes. This helps during periods of economic uncertainty.

Urban farming can be a tool to reduce the inordinate number of low-income dwellers in Lagos State. It has been demonstrated in Kampala, Uganda that households who practiced urban agriculture were more likely to have wider access to a variety of foods and vegetables. These households saw an improvement in the nutritional status of children.<sup>12</sup> How much one earns per day is an important indicator in determining one's poverty level, however, in recent years, nutritionists have advocated to look at a person's caloric intake. If a person is meeting their basic caloric intake (2,000 calories for males, 1,600 for females) from healthy sources, then they cannot only be defined as poor. Urban farming can drastically reduce the sheer volume of poverty in Lagos State.

Another benefit of urban farming is its innate ability to improve the economic conditions of its participants. More than 40% of Nigeria's economy is tied to agricultural development. Bringing urban farming to Lagos State can provide the poor with new sources of primary income and the middle class, new sources of supplemental income. This trend can be observed throughout Africa. "In Bamako, Mali, and Dar es Salaam, the economic return of urban farmers has been estimated to be comparable to the income of unskilled construction workers."<sup>13</sup> The increase in income of urban farming can reduce food shortages and the negative effects of malnutrition. Urban farming can become an effective strategy to fight underemployment, malnutrition and poverty.

Urban farming can become an integral part of Lagos State's economy. It has the potential to provide reliable and alternative sources of employment. It is estimated that Lagos receives a net

---

<sup>12</sup> Daniel Maxwell, Carol Levin, and Joanne Csete, "Does Urban Agriculture Help Prevent Malnutrition? Evidence From Kampala," *Food Policy* 23, no. 5 (1998): 411-24.

<sup>13</sup> Simatele and Binns, "Motivation and Marginalization in African Urban Agriculture."



flow of 200 migrants every day. These migrants come from small rural towns where agriculture is the sole industry. Once they arrive in Lagos, they find themselves unemployed due to a lack of applicable skills. Migrants end up contributing to Lagos' already high unemployment rate. The majority of these migrants are young and uneducated. This has helped to spike up Lagos' youth unemployment rate to nearly 50%. Urban farming can capitalize on the farming skills sets of the young migrant workers. This will help create a deeper integration of migrants into the very ethos of Lagos State. This will not only alleviate the unemployment rate but will create an entire new industry that will secure food supply while generating revenue.

The city of Lagos State needs a viable workable solution to address its food scarcity and to secure food supply for its 21 million inhabitants. It cannot rely on imports as this not only wipes away the gains made by its buoyant economic activity but creates further pressure on foreign reserves. Due to poor infrastructure networks, Lagos State cannot rely on receiving adequate supply from the rest of Nigeria. Half of crops perish in transit due to poor train and road conditions. Furthermore, much of Nigeria's land is not fully optimized for agriculture. Lagos State is at a fork in the road in its development story. It can either continue to rely on imports or the rest of Nigeria to secure its food supply or it can take matters into its own hands and develop a robust urban farming policy that will secure food supply while improving the economy through job creation.

This policy paper will advocate for an urban rezoning policy will restructures residential, industrial and commercial zones to include a clause that will permit agricultural activity that is less than one acre in size (subject to local government area rules and regulations) and to allow urban farmers to sell goods from agricultural activity throughout the city. This proposal, with the backing of the Governor of Lagos, will restructure food supply enhancing Lagos' food security. Similar policies have had great success.

### Legislative History

The state of Lagos is divided into two parts, commonly referred to by locals as the mainland and the island. 20 local government areas (LGAs) can be found within the mainland and the island. These LGAs administer essential municipal services. The 20 LGAs are comprised of more than 294 distinct land zones which is the formulation of decades of legislature that helped shaped the Lagos of today. This legislative history will highlight notable laws that influence land use decision. These laws can be categorized within the following seven categories<sup>14</sup>

- i. *Town planning and Land Use Regulations*
- ii. *Housing and Property Development Regulations*
- iii. *Traffic and Transportation Regulations*
- iv. *Urban Renewal Regulations*
- v. *Pollution and Environmental Regulations*
- vi. *Recreational Legislations*
- vii. *Rent and Land Use Charge Legislations*

---

<sup>14</sup> O. I. Akinmoladun and Leke Oduwaye

For the purpose of this policy proposal, we shall only explore the legal history of three categories, namely 1) town planning and land use regulations, 2) housing and property development regulations and 3) urban renewal regulations.

#### Category 1: Town planning and Land Use Regulations

- *1978 – The Town Planning and Land Use Regulations, The Land Use Decree No. 6*  
A State decree that vested all land within a State to the Governor. All land was to be held in trust and administered for the common benefit of Nigerians. This decree proved to be ineffective as state ownership could not adequately manage supply and demand. Lagos underwent rapid urbanization, and many began to build land without state consent.
- *1986 – Town and Country Planning Law Cap 188*  
A State law that made provisions for the establishment of a planning commission and a planning authority that would administer town planning activities. Any developer would have to seek approval from the commission.
- *1990 – The Town and Country Planning (Governing Conditions for Development of Estates by Private Developers*  
This legislation was designed to empower developers to acquire large areas of land for developments. Many of Lagos buoyant estate communities are a direct result of this legislation.
- *1998 – The Lagos State Urban and Regional Planning Board Edict No. 2*  
All levels of government were tasked with the responsibility to initiate, prepare and implement specific class of physical development plans.

#### Category 2: Housing and Property Development Regulations

- *1983 – The New Towns Development Authority Law Cap. 135*  
This act established the Lagos State New Town Development authority which aims to develop, hold, manage, sell, or lease to persons or companies, landed properties, offices, homes and industrial buildings.
- *1986 – The Neighborhood Improvement Charge Law Cap 136*  
This legislation allowed the state to tax properties that had been provided by the state at public expense that remained underdeveloped.
- *1990 – The Lagos State Development and Property Corporation (LSDPC) Cap 120*  
Lagos State established a commercial developing company with this act. The state began developing homes, shopping centers, offices and industrial buildings in residential and industrial estates. The state gained the ability to acquire and develop landed properties. The LSDPC has made development contributions but it is often plagued with inefficiencies which stem from increased construction costs.

#### Category 4: Urban Renewal Regulations

- *1991 – Lagos State Urban Renewal Board Law Cap 106*  
The 1991 Act created a board whose functions included the continuous identification of areas due for urban renewal. The board is also responsible for resettlement schemes. The board has identified more than 70 areas in need of renewal.

### Land Use in Lagos today

The Nigerian Federal government, The Lagos State government and few wealthy individuals are the largest land owners in Lagos State. It is estimated the Lagos State government, through the LSDPC, is the largest land owner.

Land use laws since the beginning of the 20<sup>th</sup> century have led to 294 identifiable zones in Lagos today. Of these 294, 52.1% have been identified as land reserved for residential use, 5.5% have been identified as land reserved for commercial use and less than 8% has been identified as land reserved for industrial use. There has been no official provisions or designation for mixed-use land.

Table 1: Land Use Area of Lagos City<sup>15</sup>

	Land Area Occupied (ha)	% of Development
Residential	9 669	52.1
Commercial	1 021	5.5
Industrial	1 448	7.8
Transportation and Circulation	3 340	18.0
Institutional and Special Use	2 784	14.0
Open Spaces and Recreation	520	2.8
<b>Total</b>	<b>18 782</b>	<b>100</b>

Lagos State cannot successfully implement a solution to secure staple crops through urban farming without effective land use. “The nature of zoning and sources of land ownership have been isolated as the major factors influencing land use decision in metropolitan Lagos.”<sup>16</sup>

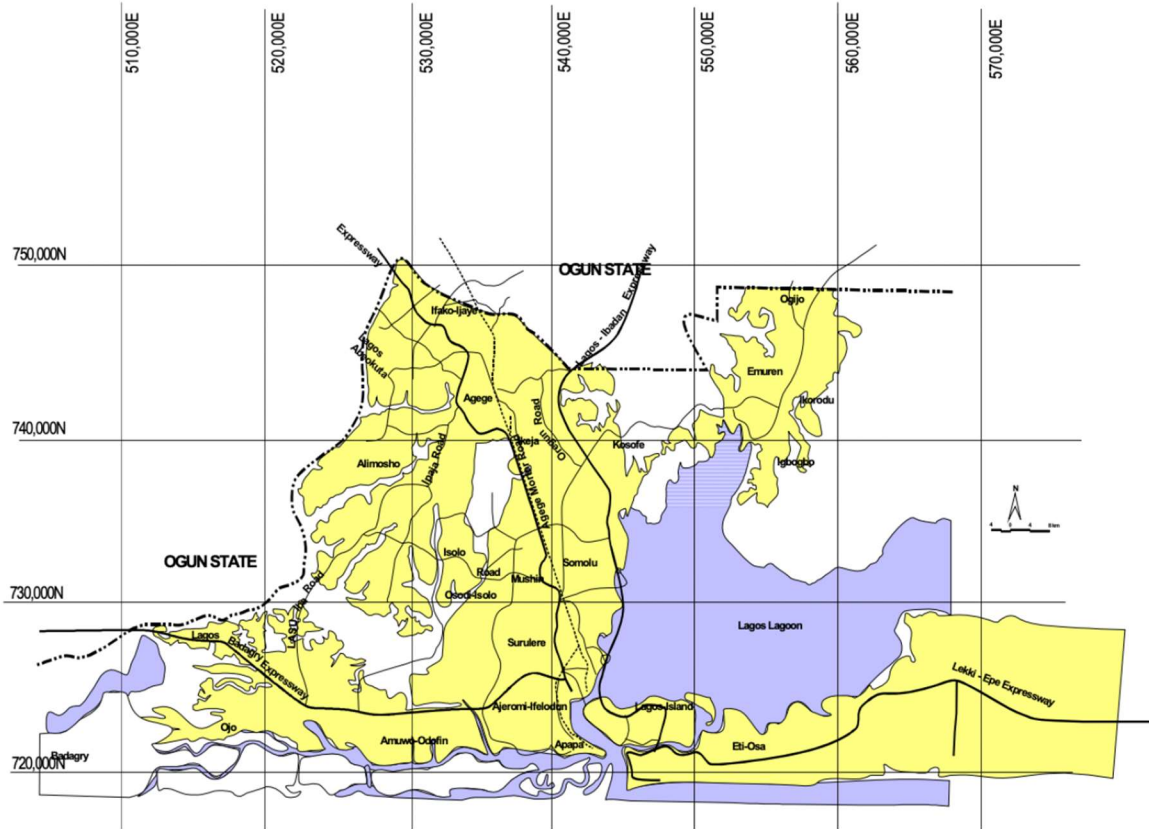
---

<sup>15</sup> Not to be confused with Lagos State

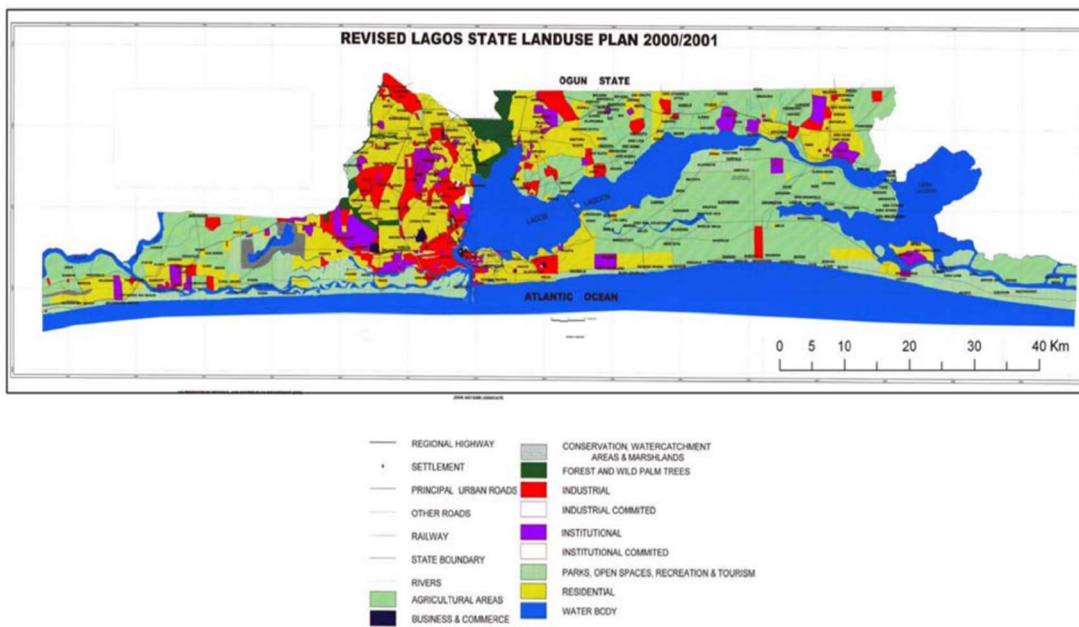
<sup>16</sup> O. I. Akinmoladun and Leke Oduwaye

**Figure 1: Map Showing of Lagos Metropolis**

Source: Department of Surveying and Geoinformatics, University of Lagos



**Figure 2: Revised Lagos State Landuse Plan**



Source: Lagos State Government 2002

Lagos is comprised of residential, industrial areas, water bodies and vegetation areas. The total area of residential and industrial bodies account for more than 54% of Lagos State. The water body areas account for more than 25% of Lagos State and the remainder is largely comprised of vegetation. Vegetation in Lagos is defined as a body of land with the potential to grow crops. Due to recent urban growth in Lagos, the migration towards the vegetation bodies of land has dramatically increased. This has resulted in the despoliation of vegetative networks. Furthermore, the vegetation bodies lie on the outskirts of the city (see Figure 2) far removed from road networks and any major centers of commerce. It is estimated that much of the vegetative land is owned by either the Nigerian Federal government or Lagos State itself.<sup>17</sup>

#### The Lagos State Development and Property Corporation (LSDPC)

LSDPC is one the largest landowner in Lagos State. Its original mandate was to play a central role in the planning and development of the metropolis to create an inclusive city. Over the years it began acquiring, holding, managing, leasing, and selling property. Today, LSDPC has deviated from its original mandate and is actively involved in the development of shopping malls, commercial Highrise buildings, luxury estates and apartments. The majority of the projects in development within its portfolio are marketed towards middle and upper middle class Lagosians.

---

<sup>17</sup> Akinsanmi, G. Ambode demands return of federal assets in Lagos. This Day Live Newspapers. June 21, 2017. <https://www.thisdaylive.com/index.php/2017/06/21/ambode-demands-return-of-federal-assets-in-lagos/> Accessed May 2019.

## Methodology

Restructuring Africa's largest city's food supply through urban farming requires a methodology that will secure the most amount of food and staple crops for Lagos while causing as little harm as possible to the environment and infrastructure of the State. This policy proposal relies on primary as well as secondary sources to formulate a methodology. Primary sources include a presentation from the Governor of Lagos, legislation dating back to the 1960's, speeches, diaries, letters and interviews along with field researcher. Secondary sources included academic documentaries and literature found in the libraries of Lagos, Nigeria. These provided critical data on land use, zoning data and agricultural assessments. Achieving food security is a complex and layered task as food is interconnected throughout all facets of human activity. Moreover, coupling food security with land use and zoning regulations managed by multiple stakeholders and communities makes the task ever more daunting. A set of criteria built around legislative feasibility, estimated agricultural yield, costs and key stakeholder support were selected to evaluate any presented policy option.

*Legislative Feasibility:* An assessment criterion that determines the likelihood of adoptability a policy proposal will have within the framework of Lagos State zoning laws.<sup>18</sup> Policy proposals which operate under the framework of existing zoning laws will score high on the evaluation grid.

1 Least Likely	2 Unlikely	3 Somewhat Likely	4 Likely	5 Highly Likely
-------------------	---------------	----------------------	-------------	--------------------

*Estimated Agricultural Yield:* An assessment criterion that projects the estimated agricultural yield a policy proposal will have. Policy proposals which generate the most agricultural output will score high on the evaluation grid.

1 Very Low	2 Low	3 Moderate	4 High Yield	5 Very High Yield Likely
---------------	----------	---------------	-----------------	--------------------------------

*Costs:* An assessment criterion that determines the potential costs to the government and the people of Lagos. Policy proposals which bear little costs will score high on the evaluation grid.

1 Very High	2 High Costs	3 Moderate Costs	4 Low Costs	5 Very Low Costs
----------------	-----------------	---------------------	----------------	---------------------

*Key Stakeholder Support:* An assessment criterion that determines the likelihood of support a policy proposal will generate from key stakeholders, including LGAs, the LSDPC, Lagos State Government and the Federal Government of Nigeria. Policy proposal which generate high support will score high on the evaluation grid.

1 Least Likely	2 Unlikely	3 Somewhat Likely	4 Likely	5 Highly Likely
-------------------	---------------	----------------------	-------------	--------------------

Methodological criterias will be ranked and given a score out of 20.

<sup>18</sup> See Legislative History section on p. 9

## Policy Alternatives

### First Considered Policy Alternative: Land Reform

Lagos is not the first city nor state to grapple with food security. The Asian countries in China, Japan, Korea, and Taiwan experienced periods of droughts, famine and low agricultural output. These countries improved food security with a series of land reform programmes. They decided to “take available agricultural land and to divide it up on an equal basis (once variation in land quality was allowed for) among the farming population.<sup>19</sup> These land reform policies were backed by government support in the form of rural credit and agronomic training. Land reforms created a market where small household farmers were motivated to invest time and labor towards maximizing agricultural production. This increased yields and farmers began trading surplus food stuffs to the domestic market. The domestic market could now rely on production of local farmers to harmonize and secure staple crops.

China, Japan, Korea, and Taiwan realized that efficiency depends on the desired outcome. The first outcome of land reforms resulted in a shift from large scale farming to domestic small-scale household agriculture. In less than a decade, output of gross agricultural yield increased by 50% (in Japan) to 75% (in Taiwan). This led to the second outcome, improved agricultural reduced reliance on food imports, which in turn improved the domestic savings rate. This led to a third outcome, less money fritted away on food imports. Less money fritted away on imports increased the state’s capacity to acquire technology to increase productivity. The fourth outcome of food security through land reforms was the vital role it played in the welfare state. Poor countries seldom offer unemployment benefits or a social safety net. Having a robust agricultural sector mitigated the economic ebbs and flow of a developing economy. “In Taiwan, an estimated 200,000 factory workers returned to farming during the first oil crisis in the mid 1970s”.<sup>20</sup> China, Japan, Korea and Taiwan adopted an agricultural approach to ensure that food security was achieved. This was critical to their economic development plans.

The outcome of land reforms in China, Japan, Korea, and Taiwan was such a tremendous success that any policy proposal which aims to ensure food security must explore land reforms as a viable alternative. Lagos, in theory, is ideal terrain to evaluate the potential success of land reforms in shoring up food security. Lagos State has an abundance of vegetative land and water body area, as demonstrated in *Figure 2: Revised Lagos State Landuse Plan*. Lagos State has a large unemployed population, many of them migrants from rural/agricultural towns. But most importantly, Lagos has been wiping away its foreign reserves to import food, a problem that is effectively addressed through a land reform policy.

Despite the attractiveness of a land reform policy to secure staple crops in Lagos State, ultimately, the “High Costs” and the lack “Key Stakeholder support” render the policy unfeasible. Any land reform in Lagos will have to be administered by the Lagos Government, notoriously known for red tape and bureaucracy. Like many African cities, the Lagos State Government lacks trained officials and administrators. The costs to train administrators would quickly skyrocket to uncontrollable levels. Furthermore, Lagos State has garnered a reputation for corruption and lack of transparency in many dealings<sup>21</sup>. Land transfer from government to small holder farmers would

---

<sup>19</sup> Studwell, p. 45

<sup>20</sup> Studwell, p. 43

<sup>21</sup> Studwell p. 75

attract countless opportunities for corruption. It is not unlikely for administrators to request “transaction or processing fees” or may select small holder farmers based on ethnic affiliation. Requests of licenses and fees would rule out the poorest rural farmers. Moreover, much like the governments of Asian countries provided credit for rural farmers, Lagos State would have to invest considerable sums to train new and inexperienced farmers. Small plots require a lot of support and technical assistance. Sufficient synchronization between the state and farmers would be required to ensure proper development of these lands. Lagos State would also need to build connecting small roads that will connect vegetation areas to main roads. At present, Lagos State has several infrastructural needs and it is highly unlikely that connecting vegetation areas to main roads would be prioritized.

Land reforms require multi-level stakeholder cooperation. As of May 2019, the Lagos State Government is involved in thousands of land disputes with the Nigerian Federal Government (NFG).<sup>22</sup> The two government entities dispute over land titles as well as management of property. Lagos State is also home to 20 LGAs, each with their own administrative processes and procedures. Potential vegetation areas designated for land reforms and urban farming would be exposed to a complex and nuanced relationship between LGAs, the Lagos State government as well as the NFG. In the past, all three entities have demonstrated poor coordination.

Despite the high costs and relatively low potential for multilevel stakeholder partnerships, land reform in Lagos State has the potential to yield enough rice to establish robust food security. There are currently 38,610 hectares of vegetative land in Lagos.<sup>23</sup> Nigeria’s currently yields 440kg per hectare of land. Lagos has the potential to produce 16,720 metric tons of rice. With improved technology, training and fertilizers, this figure has the potential to 10x.

Apart from the high yielding potential of designating Lagos’ vegetative bodies for urban farming, the feasibility of Lagos State adopting land reforms is unlikely.

#### Evaluation of Land Reform Policy in Lagos State

Legislative Feasibility	Highly Unlikely	Land reform is unprecedented in Lagos’ legislative history. There is no jurisprudence to determine viability.
Estimated Agricultural Yield	High Yield	More than 38,610 hectares of vegetative land in Lagos Nigeria. A land mass that can yield thousands of metric tons of rice and other staple goods. However, Despite the large vegetative area, Lagos State is unsuitable to produce Nigeria’s most imported crop: wheat.
Costs	Very High	Lagos State would need to invest rural in credit for small holder farmers to increase yield, invest in infrastructure to connect farms to the main road, and invest sums in training administrators.

<sup>22</sup> <https://punchng.com/land-control-lagos-defeats-fg-supreme-court/>

<sup>23</sup> 33% of Lagos’ land is vegetative body. Lagos has a total of 110,000 hectares of land.



Key Stakeholder Support	Unlikely	Lagos State would have to garner the support of the Federal Nigerian Government, an entity it is currently battling in the Supreme Court over thousands of land disputes. Lagos State would also need to garner support from the 20 LGAs who each have various mandates and priorities. Key stakeholder support for urban farming through land reform is highly unlikely.
-------------------------	----------	---

**Policy Score = 8/20**

Second Considered Policy Alternative: Maintain Status Quo

Lagos State is yet to adopt an urban farming policy geared towards securing staple food crops for its citizenry. This policy alternative assesses that Lagos is on course for an implosion if it maintains the status quo and continues to fail to act. Failing to implement a viable policy proposal tailored around urban farming will 1) increase imports and 2) strain the labor market.

Failing to implement a viable policy to secure staple foods will compel the people of Lagos to import more foodstuffs as they cannot rely on local production. As of 2015, it was estimated that 16 million people lived in Lagos, today that figure has ballooned to 21 million inhabitants. Lagos State’s population is likely to balloon further within the next decade. Lagos State already imports thousands of metric tons of wheat and rice, which has a negative effect on Nigeria’s currency reserves. Nigeria’s current reserves are in further trouble as the price of crude oil (Nigeria’s largest import) has been either low or unstable.

Failing to act will strain the labour market; as more people become less food secure, the more the rise in welfare related payments. Increased welfare payments and health related expenses to ensure a healthy population will strain Lagos State’s coffers. By failing to act, Lagos State misses a tremendous opportunity to train and empower millions of unemployed youth in the urban farming sector.

Evaluation of Maintaining Status Quo

Legislative Feasibility	Likely	Failing to act already operates within the confines of law.
Estimated Agricultural Yield	Very Low	Lagos has very little agricultural output and failing to act will only compound this.
Costs	Very High	Failing to act increases Lagos’ expenditures on health, welfare and infrastructure.
Key Stakeholder Support	Medium	Lagos State has aimed to maintain the status quo since its inception. The LGA

and Lagos State will rally behind a lack of policy proposal. Full Key stakeholder support is hampered by the recent legal battles between FGN and Lagos State.

**Policy Score = 9/20**

*Third Considered Policy Alternative: Create the Lagos State Agricultural Development Corporation*

It is not uncommon for Lagos State to create departments when attempting to provide policy solutions. Many large metropolises tend to keep the total number of branches under 55. New York City, America's largest metropolis has less than 50 mayoral department. Tokyo, Japan's largest has less than 40 branches and departments of government. Lagos State currently has 82 branches of government. Lagos State has created a wide-ranging set of agencies from the Lagos State Coconut Development Agency (LSCDA), an agency tasked with promoting coconuts, to The Lagos State Drain Ducks (LSDD), an agency designed to promote drainage clearing and carting. It is important to note that Lagos State is not a high producer of coconuts, in fact Nigeria is not listed among the top 10 of the world's leading coconut producers,<sup>24</sup> yet the LSCDPA recently announced that it planned to plan 10,000 coconut trees. It is also important to note that Lagos State does not have an interconnected network of sewers, yet the government created the LSDD and have proved to be helpless against floods or drain ducks.

Throughout the years, Lagos State government has decreed branches and government departments for various reasons. It is highly conceivable that they may adopt the same practice when it comes to urban farming. This approach is highly inadvisable. These agencies and departments are mired with red tape, bureaucracy and inefficiencies. Far more alarming is the low output of social good they produce. The LSDPC, responsible for planning and developing housing, has built several low-cost estates throughout Lagos, without a clear criterion for choosing buyers. The lack defined rental guidelines and ownership attracted investors who later rent out low costs to units to tenants at unaffordable prices, negating the benefits. Enacting a bureaucratic and administrative branch of government to produce sound agricultural and economic outcomes is counterintuitive to Lagos' past policies.

Evaluation of Creating the Lagos State Agricultural Development Corporation

---

<sup>24</sup> <https://www.worldatlas.com/articles/the-world-leaders-in-coconut-production.html>

Legislative Feasibility	Very High	Creating a branch or administrative agency in Lagos only requires the approval of the sitting Governor.
Estimated Agricultural Yield	Very Low	Lagos State government is comprised of administrators, politicians and bureaucrats – ill-suited to train Nigerian farmers on agricultural techniques. Note that Nigerian farmers already produce lower yields on staple crops such as rice. Lagos State may consider recruiting agricultural experts to manage Lagos State Agricultural Development Corporation but they may not be best suited to run the administrative component of the agency.
Costs	Medium	The costs to fund and operate Lagos State Agricultural Development corporation depends on the size of the program, however, upfront costs for departments may be low. Costs incurred are likely to be farming credits necessary to secure land
Key Stakeholder Support	Very High	Lagos State would task the Lagos State Agricultural Development Corporation to operate solely on lands it owns mitigating conflict. Additionally, the key stakeholder support to drive this initiative is the Governor.

**Policy Score =14/20**

### Policy Recommendation

Lagos State does not have an established code regulating urban farming. Lagos citizen farming throughout the city are in violation of current zoning laws. Currently, neither residential, commercial, nor industrial zones have clauses allotted for farming. Animal husbandry is frowned upon by the head of the Lagos State Environmental Agency.<sup>25</sup> Absent from Lagos State's rules and regulations are any mentions of individual or home gardens. It remains unclear what the State's official stance is as it pertains to urban farming.

Lagos State needs a policy that will strengthen the city's food supply by securing staple crops. This proposal requires a high level of legislative feasibility, low costs, high estimated agricultural yields and key stakeholder support. The recommendation of this policy proposal is two-fold: 1) For Lagos State to amend its residential, industrial and commercial zones to allow agricultural activity that is less than one acre in (size subject to local government area rules and regulations) and 2) to allow urban farmers to sell goods from agricultural activity both on-site and off-site.

This policy recommendation fulfills the four criteria of 1) legislative feasibility, 2) estimated agricultural yield, 3) costs, and 4) key stakeholder support. Firstly, amending residential, industrial, and commercial land use zones to include agricultural activity which occupy less than one acre of land requires an executive order from the executive branch of government. In Nigeria, the 1999 Constitution allows the President and State governors the authority to "make modifications in the text of any existing law into conformity with the provisions of the Constitution"<sup>26</sup>. The Governor of Lagos State is granted discretion to determine what he believes is consistent with the constitution. Should he deem it fit to declare into existing zoning laws that urban farming is a basic human right to food, he would be well within his powers to do so.

Secondly, the agricultural yield from a well-managed small plot of land always produces more food than a large agricultural plot of land. Well managed vegetable gardens yield anywhere between 5 – 10 kgs of food per square metre per year. Discounting that yield to 50% given the low output levels of Nigeria, farmers can expect to produce anywhere between 2.5 – 5 kgs of food per square metre in any given year. Farmers have the potential to produce up to 10 tonnes of rice per acre.<sup>27</sup> In 2016, a metric ton of rice fetched anywhere between USD330-380 per tonnes. Urban farmers could sell their surplus of rice to neighbours, not only securing the staple crops food supply but presenting an opportunity for additional income.

Thirdly, the costs to implement an urban farming policy which redefines zoning land use and permits farmers to sell their goods to a market bears minimal costs. The government would incur advertising costs creating awareness towards the campaign. Should the government wish to go further, it could reward high yielding productive farms with rebates, training and technology. The government of Lagos would not incur costs by creating and managing a new administrative bureau. Credits would only be given upon performance and incentive. This policy proposal bears very little costs.

---

<sup>25</sup> <http://smooth981.fm/nigeria-rearing-animals-in-residential-areas-constitutes-environmental-problems-lasepa/>

<sup>26</sup> Section 315(2) of the 1999 Constitution

<sup>27</sup> 2.5 kgs of food per square metre. 1 acre is 4046.86 square metre.  $2.5 \times 4,046.86 = 10,115$  kgs of food = 10 tons of rice per food.

Fourthly, multiple level stakeholder support would appear from a policy that democratizes farming. The policy maintains that the local government administer rules and regulations and warrant whether residential, commercial and industrial properties merit further scrutiny. This criterion of the policy promotes key stakeholder support within Lagos.

For food security to be reached, crops must be available, accessible, and adequate.<sup>28</sup> By implementing a policy that permits agricultural farming on less than one acre of land, Lagos immediate solves the availability issue by tapping into the millions of unemployed labourers who have journeyed from farming villages. These farmers can cultivate the lands increasing the availability of staple crops. The policy also solves the accessibility issue of food for crops grown locally. They are less exposed to poor infrastructure and the possibility of food loss due to long journeys. Lastly, the policy solves the adequate criterion by allowing farmers to sell surplus production. Farmers will generate crops beyond their sustenance level in hopes of selling to a market who readily purchase.

### Implementation

Urban farmers, owners, employees, volunteers and visitors must comply with all state laws, local government area laws, and regulations in relation to the use, operation, and enjoyment of the agricultural premises. Urban farmers may not use inappropriate materials or equipment intended for widescale farming. Prior to occupying farm land, users shall undertake soil testing to measure nutrients, heavy metals, and harmful contaminants.

Prior to commencing urban farming in Lagos, users should determine the historical use of the property and undertake experiments to measure nutrients, heavy metals and harmful contaminants which may not be suitable for growth. Sites should also be tested for potential industrial waste run offs. Site users would have to adhere to all laws and regulation determined by the local government area of their designated agricultural plots of lands. Though the policy, at the Governor's level, would advocate for little red tape; and even less bureaucracy in the forms of permits, will most likely chose to create a permit or licensing fee. The practice to create LGA specific fees is common not only throughout Lagos State but the entire country.

Implementation of this policy would require high levels of synchronization between the Lagos State Government and LGAs . As more unemployed Lagosians seek to improve their sustenance and gain the opportunity to sell the surplus for a profit, more will gravitate towards the program. To manage the supply and demand of permits and to increase visibility and transparency, the creation of an online registration and payment portal would be integral to the onboarding of the proposal. Citizens would indicate what agricultural activity they planned to pursue and a physical LGA official would visit later on.

Careful consideration will be placed for those performing agricultural activity in the form of husbandry and animal rearing. They will be limited to no more than four four-legged animals with a given plot. The LGAs would have to work closely with the Lagos State Environmental Agency to ensure safety and security for all.

---

<sup>28</sup> The Right to Adequate Food. Office of the High Commissioner for Human Rights. Fact Sheets # 34. <https://www.ohchr.org/Documents/Publications/FactSheet34en.pdf>

The policy recommendation to amend residential, industrial, and commercial zones so that they may allow Lagosian to farm on less than one acre of land will dramatically harmonize and secure stable crops. The anticipated crop yield followed by a booming market for locally sourced product will be a welcome relief from the excessive importation of expensive products or poor quality of foods from other provinces.

#### Evaluation of Policy Recommendation

Legislative Feasibility	Very High	The Governor of Lagos has the power to sign an executive order that can include less than 1 acre of farming in residential, commercial, industrial zones.
Estimated Agricultural Yield	Medium	With a relatively small plot of land, urban farmers would likely participate in what is called “hyper-gardening”. A labour intensive practice that allows vegetation to grow vertically. This has proved to be substantially more effective than traditional farming. Despite this improvement, the expected yield would still be higher than anything else in Nigeria.
Costs	Very Low	The costs to fund this policy proposal would be low compared to other policy proposals, however, farmers would require training and access to gardening equipment.
Key Stakeholder Support	Very High	By allowing the LGAs to administer rules and regulations, their support will be easy to count upon.

**Policy Score = 18/20**

## Conclusion

The right to food is a basic human right. When a state fails to create food security, it fails its citizens. Food security is realized when every man, woman and child within a community have a right to adequate food or adequate means to procure it. It is imperative that this right remains permanent with little restriction to access. Currently, Lagos State has failed to provide its citizens with enough staple crops to secure food. Unlike other cities or states which cannot attain food security due to war, lack of land use or income, Lagos State is well positioned to achieve a high degree of food security.

This policy proposal argues that there is enough land and support for Lagos to integrate a sufficient urban agriculture policy best suited to increase staple crops. Lagos State requires an enabling framework to guide enhancement agriculture. With the help of the Governor, there is adequate legislation to enable access to land and guarantee rights for farmers.

By implementing a policy that permits agricultural activity of less than one acre in a residential, commercial, and industrial area and creating opportunities for trade, Lagos will achieve adequate, accessible, and available food supply which are the key components to achieving food security. By using the power of the Governor of Lagos and tapping into the dormant unemployed population, Lagos has the opportunity to add further momentum to its economic success. The savings gained from the reduction of imported goods will allow the country save and import technological goods that will.

## References

- Studwell, Joe. *How Asia Works : Success and Failure in the World's Most Dynamic Region*. Profile Books, 2013.
- Assan, N. "Poverty Alleviation and Enhancing Food Security through Promotion of Urban Agriculture in Zimbabwe." *Scientific Journal of Animal Science*, vol. 3, no. 3, 2014, pp. 53–63
- Akinmoladun, O.I, and L Oduwaye. "Planning Laws and Policies Influencing the Use of Land in Metropolitan Lagos, Nigeria." *FUTY Journal of the Environment*, vol. 2, no. 1, 2010, p. 99.
- Nkwunonwo, Ugonna, and Awwal Bamanga. "Potential Impacts of Urban Development around the Apese Lagoon in the Lagos Metropolis of Nigeria." *International Journal of Environmental Sciences*, vol. 5, no. 4, 2015, p. 830.
- Nkwunonwo, Ugonna. "Land Use/Land Cover Mapping of the Lagos Metropolis of Nigeria using 2012 SLC-off Landsat ETM+ Satellite Images". *International Journal of Scientific & Engineer Research*, vol 4, no. 11, November 1217
- Okebukola, and Kana. "Nigeria as Valid Legislative Instruments and Administrative Tools Executive orders in Nigeriaas Valid Legislation. Accessed: April 2019 [file:///Users/guyfuti/Downloads/\\_sf\\_urban\\_agriculture\\_zoning\\_proposal\\_full.pdf](file:///Users/guyfuti/Downloads/_sf_urban_agriculture_zoning_proposal_full.pdf)
- Ordinance amending the Planning Code to update controls related to urban agricultural uses by adding Section 102.34 to define urban agriculture, including neighborhood agriculture and urban industrial agriculture, and amending Sections 204.1, 209.5, 227, 234.1, 234.2, and Articles 7 and 8 to regulate such uses in various zoning districts; and making findings including environmental findings and findings of consistency with General Plan and Section 101.1
- Ogun, T. P. "Infrastructure and poverty reduction: Implications for urban development in Nigeria." *Urban Forum*. Vol. 21. No. 3. Springer Netherlands, 2010.
- Goldstein, Mindy, et al. "Urban agriculture: A sixteen city survey of urban agriculture practices across the country." *Survey written and compiled by Turner Environmental Law Clinic at Emory University Law School, Atlanta, GA* (2011): 1-94.
- Landis, John D. "Imagining land use futures: applying the California urban futures model." *Journal of the American Planning Association* 61.4 (1995): 438-457.
- Wooten, Heather, and Amy Ackerman. "Seeding the city: land use policies to promote urban agriculture." *Public Health Law & Policy/NPLAN, Oakland, CA. Available at <http://changelabsolutions.org/publications/seeding-city>* 178 (2011).



- Oduwaye, Leke. "Globalization and urban land use planning: The case of Lagos, Nigeria." *A paper presented at the 18th International Conference on Urban Planning, Regional Development and Information Society, Rome, Italy*. 2013
- Benson, A. "Nigeria: Only 41% of arable land is cultivated, as experts calls for investment in Agriculture value chain . World Stage Newspapers accessed at: <https://www.worldstagegroup.com/nigeria-only-41-of-arable-land-is-cultivated-as-expert-calls-for-investment-in-agriculture-value-chain/>
- Burns, Catherine, et al. "Community level interventions to improve food security in developed countries." *Cochrane Database of Systematic Reviews* 12 (2010).
- Land Control: Lagos defeats GF at Supreme Court. The Punch Newspapers. Accessed on <https://punchng.com/land-control-lagos-defeats-fg-supreme-court/>
- City of Kamloops. Food and Urban Agriculture Plan – Harvesting our Potential. Parks, Recreation, and Cultural Services Department.
- Nigeria Country Profile. Observatory of Economic Complex. Accessed May 2019: <https://atlas.media.mit.edu/en/profile/country/nga/>
- Urban Agriculture Increases Food Security for Poor People in Africa. Population Reference Bureau.
- Redwood, Mark, ed. *Agriculture in urban planning: generating livelihoods and food security*. Routledge, 2012.
- Food Security Portal Facilitated by IFPRI. <http://www.foodsecurityportal.org/nigeria/resources> Accessed March 2019
- Samuel, Agoda, et al. "Post-harvest food losses reduction in maize production in Nigeria." *African Journal of Agricultural Research* 6.21 (2011): 4833-4839.
- Mechlem, Kerstin. "Food Security and the Right to Food in the Discourse of the United Nations." *European Law Journal* 10.5 (2004): 631-648.
- Daniel Maxwell, Carol Levin, and Joanne Csete, "Does Urban Agriculture Help Prevent Malnutrition? Evidence From Kampala," *Food Policy* 23, no. 5 (1998): 411-24.
- Simatele and Binns, "Motivation and Marginalization in African Urban Agriculture."