

# NIGERIAN AGRICULTURE AND FOOD SECURITY CHALLENGES

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## Abstract

*The paper takes a critical look at the food security challenges in the country. No country can develop without providing food for its people. In the light of this, the paper takes a look at some of the challenges bedeviling food security in Nigeria, with a view to providing solutions to these problems. One of such problems is that the majority of the population of the country are in rural areas with most of them engaged in non-farming activities. The issue of bush burning and other poor land management practices have led to global warming which affects crop yield. The continued dependence on imported staple food, like rice, wheat and fish, has made our people perpetual dependants on imported food items and not producers. This, therefore, discourages agriculture and is a threat to food security. With all these problems in mind, the paper is of the view that policies should be designed to reduce negative environmental impact by encouraging waste conversion, training of young educated people interested in agricultural entrepreneurship and providing financial and technological support, as well as increased investment in irrigation facilities. Above all, corruption in high places must be checked.*

**Keywords:** Food Security challenges, non-farming activities, policies, environmental Impact

## Introduction

Prior to the era of petroleum dependence, agriculture was the driver of the economy and main source of foreign exchange earnings. For decades now, government expenditure of the oil revenues has favoured the urban non-agricultural sectors. Food insecurity is one of the global problems that have plagued nations like Nigeria, with seemingly no workable solution in sight. The situation is compounded by the global economic meltdown marked by high cost of tuber and cereals in urban and rural areas. Furthermore, efforts at ensuring food security have been very slow and ineffective. For instance, Operation Feed the Nation (OFN) did not feed the nation neither did the Green Revolution transform agriculture, as reflected in the continuous neglect of agriculture in favour of oil which some have considered as a curse to Nigeria. There are two variables in use in this topic. One is agriculture and the other is food

insecurity. Efforts will be made to look at these variables vis-a-vis the objectives of the study.

Agriculture is a term that has evoked a plethora of definitional responses from scholars and professionals. Abellanos and Pava (1987) see agriculture as the growing of both plants and animals for human needs. Abellanos and Pava's definition of agriculture seems not to be enough as it did not include what happens to grown plants and animals in terms of economic gains. They only mentioned its use for humans only. Rubenstein (2003) sees agriculture as the deliberate effort to modify a portion of earth's surface through the cultivation of crops and the raising of livestock for sustenance or economic gain. Rubenstein gave a more comprehensive definition of agriculture where he states that these grown crops are used for human needs and for economic gains too. Whatever be the case, agriculture is





practiced for the purpose of producing food and other human needs such as clothing, shelter, medicines, weapons, tools, ornaments and indefinitely many more. It is likewise practiced as a business for economic gain. The ultimate purpose is essentially important in clarifying what agriculture is.

### **Functions of agriculture**

In addition to food security, agriculture has some other three contributions; they include the following:

1. **Environmental Function:** Agriculture and related land use can have beneficial or harmful effects on the environment. Agriculture can protect the environment from flood, while it can also cause environmental damage through such agricultural practices as bush burning and use of chemicals in crop and livestock production.
2. **Economic Function:** Agriculture remains a principal force in sustaining the operation and growth of the whole economy, even in highly industrialized countries. Valuation of the various economic functions requires assessment of short, medium and long term benefits. Important determinants of the economic function include the complexity and maturity of market development and the level of institutional development.
3. **Social Function:** Maintenance is basic to sustaining agro-ecology and improving the quality of life of rural residents, particularly of the young, women, the elderly and other marginal groups.

Let us look at the second variable (food insecurity) in this paper.

Food insecurity or crisis is a situation that exists when people lack secure access to sufficient amount of safe and nutritious food for normal growth and development and an active and healthy life. This may be caused by the unavailability of food, insufficient purchasing power, inappropriate distribution,

or inadequate use of food at the household level. According to Offiong (2001), food security in sub-Saharan Africa has deteriorated since independence, with food shortages becoming very rampant. It is estimated that about one-quarter of sub-Saharan African population obtained, on average, less than 80% of the daily calories supply recommended by World Health Organisation and Food and Agricultural Organisation of the United Nations (FAO). Nigeria ranked among West African countries with undernourished population of more than 35%.

Nigeria has the ambition of diversifying her economy from crude petroleum dependency. The country also faces a looming food security crisis with a growing population that is increasingly dependent on imported foods. The once dominant subsistence oriented farm economy is at risk of gradual marginalisation. Insecure land tenure, scarcity of funds and credit, labour scarcity despite overall high unemployment, and stagnant technology have crippled its further development. Until today, a wide range of policies, programmes and projects has had limited impact in ameliorating these problems. Given the choice, young people from the rural areas rather try their luck in urban centres. Climate change compounds the challenges confronting agriculture. The sector is dependent on the natural resource base and thus faces risks such as desertification, rising temperatures, changing rainfall patterns and sea level rise, leading to degrading agriculture and exacerbating conflict.

### **Agriculture and Food Security: Trends and Dynamics**

Two broader trends challenge agriculture and food security: population dynamics and climate change

**Population dynamics:** Present and projected population dynamics carry major implications for agriculture and food security.



Nigeria's food security challenges will grow with its population. At current food production growth rates, Nigeria remains unable to feed its population. Production will have to expand at a higher rate. Nigeria's urban population has outstripped the rural population. This shift to urban centres will become even more pronounced. Despite its rural roots, the urban population is disconnected from food production and relies on the market for food supplies, whether domestically produced or imported. Youth make up a growing share of the population and are the bulk of urban migrants. The challenge is to retain them, educate and employ the next generation of farmers.

Agriculture provides an opportunity to turn rural poverty and stagnation into development. At least in theory, the rural youth could produce the food that the urban youth consume. However, this would assume that the urban youth have the required purchasing power. A different scenario may play out in which rural youth do not benefit and agribusiness produces the bulk of food for urban centres. Can there be agricultural jobs without consumers?

Agriculture as a development issue will remain a core challenge for Nigeria for the coming decades. To address the challenge, Nigeria should adopt a twin-track approach, both encouraging agri-business and supporting the large population of smallholders. This is critical to rural food security, social cohesion and poverty alleviation. As agricultural technology development and diffusion has stagnated, the sector continues to rely on labour for farm power. This stagnation is due to a lack of domestic innovation, especially in mechanization that is appropriate to the ecology. Farmers cannot afford the available equipment, and in turn there is a lack of local maintenance capacity.

Government policy should, more than in the past, consider environmental challenges and improve poor past and present agricultural management practices, which

hinge on input support, and land resource utilization, management and conservation. The central role of women in the agricultural economy needs to be finally recognised and reflected in the policies and measures that purport to buttress smallholders.

### **Climate Change**

The Nigeria Meteorological Agency (NIMET) has demonstrated dramatic changes in weather patterns over the period from 1941 to 2000: irregular rainfall give rise to fewer rainy days. The combination of late onset and early cessation of rains led to a shorter rainy season in most of the country from 1971 to 2000 compared to the period 1941 to 1970. Between 1941 and 2000, annual rainfall decreased by 2-8mm across most of the country, with the exception of Port Harcourt where it increased by 2-4mm. Long-term records show that over the past 105 years, the amount of rainfall per year dropped by 81mm. The trend of declining rainfall worsened after 1970 and continues to this date. Changes in the amount of rain, increased rainfall intensity and changes in rainfall patterns lead to decreased resource productivity and production. Changes and erratic rainfall patterns make it difficult for farmers to plan their operations, may reduce the cropping season and can lead to low germination, reduced yield and crop failure. Erratic weather interferes with processing of produce (such as sun-drying of crops and smoking of fish). Increased frequency of major storms causes damages to farm land, crops and livestock. Major storms can also cause road wash-out, which makes it difficult to access farms and to market products.

### **Green Agriculture and Food Security**

Before Nigeria can address the underlying problems articulated above, three issues need to be resolved that directly determine the success of a transformation of agriculture and improving food security in the face of changing climate.



1. Nigeria's economy is sensitive and vulnerable to the often unstable international crude oil market: The economy is far over 80% dependent on the petroleum sector as the source of public finance. Despite this significance, the oil sector has not spurred economic growth, has created very few jobs and its wealth has been distributed among a small elite. A national policy framework is needed to diversify Nigeria's economy.
2. The preferred pathway for agricultural development in Nigeria: The rural economy is heavily dependent on smallholders whose primary need is household subsistence. Despite being the target group of the National Accelerated Food Production Programmes (NAFPP) and successor programmes since 1972, they produce little marketable surplus. These programmes aimed to raise output, productivity, income and thus, break the cycle of poverty. The failure of this approach has a significant social impact.
3. A "green" agricultural sector to assure food security for the growing population:- There is controversy around what constitutes a green agricultural economy. The current crisis provides an opportunity to refocus policies and refine strategies towards an agricultural sector that is resource efficient, socially inclusive and low carbon.

Understanding this, we can proceed and address the underlying problems that a green deal for Nigeria's agriculture and food security needs to contend with.

Nigeria remaining a largely agrarian country: The experiences of other countries are that, even where aggregate output and value of production increases, the share of agriculture in GDP declines over time. Nigeria's goal should still be to raise aggregate output and

value of production through value addition along the production/supply chain. A comparable trend can be observed in agricultural employment where less labour is engaged in agriculture yet output increases. In Nigeria's case, however, the drop in the number of people engaged in agriculture is not the outcome of structural economic change but the abandonment of rural life. In contrast, a higher-yielding, more intensive agriculture in developed countries has emerged from technological development, especially mechanisation which raises total factor productivity (land, labour and capital). With stagnant technology in Nigeria, maintaining agricultural production will be difficult. When projected into the future, Nigeria's young, growing urban population is alienated from rural life and the farming vocation. This shows the urgent need for two national policy interventions. The first is developing local technology, especially mechanisation capacity. The second is developing a successor generation of farmers. Incentives and subsidies are needed to achieve this.

The agricultural sector needs sustainable growth: production that is socially inclusive, with the benefits equitably distributed to reduce rural poverty and food insecurity. Contrary to common beliefs, according to the International Institute of Tropical Agriculture (IITA) and government statistics, cassava and maize yields per hectare have risen. The rate of increase has, however, not kept up with the increase in consumption.

We want to keep it natural, which is the whole philosophy behind what we are doing. It's linked to your lifestyle and your health, which is also the kind of values behind what I'm trying to do. Yes, I hope that eventually, being organic will improve my sales. Because definitely, there are a lot of illnesses that are now being treated with natural foods, and I believe that with enough awareness, enough push, I will see an improvement in sales in favour of organic



foods. I think we have more than what it takes to have enough food here in Nigeria, and even to share with the world."

The transformation programme supports improved seeds and seedlings which cannot be diverted from agricultural into non-farm use. The National Agricultural Seeds Council (NASC) is the responsible government agency. In some countries, genetically modified (GM) seeds have been introduced. Whether these have entered Nigeria is not known, but the government has not promoted or distributed them. Many Nigerians including major NGOs oppose the use of GM seeds out of concern for health and ecology, as well as the anticipated socio-economic impacts. Farmers have a limited ability to pay and local markets are not reliable when it comes to supplying inputs. Suspicion remains about the use of so-called terminator genes in GM seeds. Were Nigeria to grow GM crops, this would potentially harm its ability to export food to Europe.

### **Challenges to a Green Deal for Agriculture and Food Security**

A vibrant sustainable agricultural economy with equitable benefits is attainable, the following issues, however, need further examination: what is the potential of organic/low external input sustainable agriculture to feed a growing population? What is the potential for improved resources efficiency without adverse consequences for soil and water? What are the critical low carbon issues in Nigeria's agriculture?

The adaptation measures used by smallholders might provide insights. The traditional response to resource problems is to seek new land. This only works where land use is extensive, allowing for migration of people and livestock. At present, farmers are not simply searching for new land and water sources. As soil fertility declines and the limits of the traditional fallow cycles are exceeded, they seek external inputs to raise output per hectare. In addition, farmers and herders seek non-agricultural livelihood

means. It is, however, clear that farmers will need to abandon generations-old practices. Improved farm management practices are likely more effectively introduced by educating future farmers. The current policy reference is to promote external inputs like inorganic fertilizer and bio-tech seeds. This is, however, done in the absence of a comparative analysis of the sustainability and true costs and benefits of high-input versus organic farming in Nigeria. This makes it impossible to confront concerns that a transition to low external input or organic farming may raise the cost of food. The experiences in more advanced economies with this are mixed.

It is noted that Nigerian farmers make a marginal contribution to global warming through deforestation. This can be addressed by the extension services advising on agro-forestry, alternative land preparation and weed control measures. Nigerian farmers still believe that bush burning prevents weed infestations that will require more labour to combat. Labour scarcity has become more prevalent. But intervention will have to factor in gender roles. In most Nigerian farming systems, both women and men provide farm labour, but there is gender stereotyping of roles: example, weeding and post-harvesting handling, where harvest losses accrue, are commonly the role of women.

### **Conclusion**

In conclusion, strong economic performance is not in conflict with great environmental performance. Through innovation, Nigeria can achieve agricultural sustainability and food security.

### **Recommendations**

The following package of measures towards a green deal for Nigeria's agriculture is recommended for implementation in the context of a two-track approach, on the one hand fostering agri-business to increase production for the growing urban population, on the other hand offering continued support



to smallholders with the aim of alleviating poverty. Both need incentives and subsidies. To improve the basis for decision-making, a comprehensive mapping of agricultural potential is needed taking the following factors into account:

- The agricultural sector is highly impacted by the changing climate.
- The negative environmental impact of agriculture needs to be reassessed in order to be reduced, including deforestation and bush burning.
- Resources one could take for granted are or will soon be less available and cost more water, for example, is increasingly scarce due to changing rainfall patterns and from drying aquifers and rivers.
- Appropriate technological and management innovations exist that improve productivity and efficiency while reducing Greenhouse Gas (GHG) emissions, including utilizing livestock waste in biogas silos and reducing post-harvest losses through local processing
- The promotion of high value and organic agricultural products, notwithstanding the fact that it serves a niche market, can boost farmer's earning and potentially foreign exchange.

Policies should be designed to reduce negative environmental impact by encouraging waste conversion, using energy-efficient means of production and employing renewable energy from wind farms, solar, small-scale hydro and biomass. A reduction in non-biodegradable waste and storage materials can also be achieved.

Nigeria needs a programme devoted to a new generation of farmers that trains young educated people interested in agricultural entrepreneurship and provides financial and technological support. They should be enabled to use improved technologies and modern management approaches that help ensure farm profitability

and sustainable resource use.

Urbanization has led to large-scale acquisition of land by the government land that has often been allocated to small elite. As competition for land increases, the government needs to provide secure tenure and access to land. At present, access to land is restricted for cultural reasons, by the existence of communal holdings with unclear use rights, as well as misappropriation and large-scale acquisitions.

Agriculture is mostly rain-fed. Increased investment and extension for irrigation facilities, including water harvesting and precession drip systems should be targeted at market-oriented, younger and educated farmers.

For now, consistent enforcement of existing regulations on land use and management, including bush burning and land degrading practices can accomplish this. A reduction in chemical use in crop and livestock production, including fishing should be promoted. This has immediate health benefits and provides some additional farm employment. Maintenance of soil fertility and protecting ecological diversity is crucial to the future of farming. To this end, bush burning should be stopped by training and raising public awareness, moral and community-driven persuasion and consistent enforcement of the existing regulations. Material-flow analysis and application of such lessons should become mandatory in the education of a new generation of Nigerian farmers. Integrated soil and pest management and integrated crop and livestock systems that operate as close loops linking waste, by-products and inputs are examples of innovation.

There is a need for holistic climate change governance. To this end, a national climate change commission is expected to bring stakeholders across the narrow confines of ministries, departments and agencies together. For now, the adaptation measures recommended in the NASPA should be adopted.

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