

# Transforming Nigeria's Agrifood System

## Wealthier, but Also Healthier

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**T**ransforming current food systems is widely acknowledged as key to achieving multiple Sustainable Development Goals, including zero hunger, good health and well-being, and climate action (FAO et al. 2021). Yet even before the COVID-19 pandemic, billions of people lacked access to adequate nutritious, safe, and affordable foods for a healthy diet (Hirvonen et al. 2020). Poor-quality diets are at the root of all forms of malnutrition, including child stunting, micronutrient deficiencies, and overweight/obesity, as well as common noncommunicable diseases – the consequences of which can last a lifetime and affect both individuals and societies (Willet et al. 2019).

Food system transformation is therefore imperative, as evidenced by the United Nations' holding its first-ever Food Systems Summit in 2021 (UN 2021). In Nigeria, as in other parts of Africa south of the Sahara, where farming continues to provide food and livelihoods for most poor people, transforming the agriculture sector is probably the most critical part of overall food system transformation. The Nigerian government and development partners have recognized this urgent need in the recently concluded National Dialogues held in preparation for the Food Systems Summit (FMFBNP 2021). The COVID-19-related health and economic crises have underscored agriculture's importance as well as that of related policies. Now, a year and a half into the pandemic and amid increasing climate impacts and a recent rise in insecurity across Nigeria affecting farm activities, there is unprecedented need and momentum to reshape the country's agriculture sector to be crisis-resilient, environmentally sustainable, a vibrant generator of jobs and wealth, and a provider of healthy diets for all. Transforming food systems for healthier diets, however, will require a paradigm shift that puts consumers and their diets at the center of policymaking. Such a shift will entail striking a balance in Nigeria's agricultural policy between traditional objectives like farmer support, staple food availability and price stability, and cash-crop export stimulation, on the one hand, and the new responsibility for better nutrition and health for all people, on the other.

### KEY MESSAGES

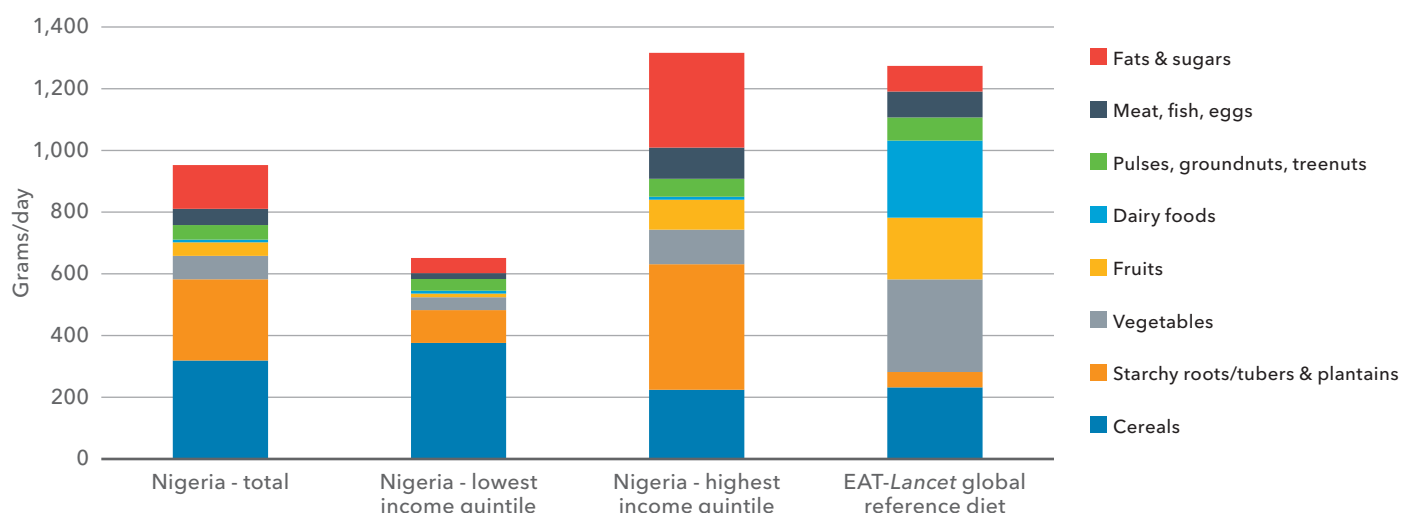
- Nigeria faces a growing burden of multiple forms of malnutrition driven primarily by poor-quality diets.
- Agricultural policies should focus more on consumer needs for healthier diets and create an enabling environment for improving production, availability, and affordability of nutritious foods.
- Transforming Nigeria's agrifood system requires long-term policy commitment and public investments, coherence between federal and state policies, and macroeconomic stability for effective policy implementation.
- Food system transformation and agricultural commercialization hold great promise for improving both smallholder farming and the diets of all Nigerians.

## NUTRITION, ECONOMIC CRISES, AND AGRICULTURE

Home to some 211 million people, Nigeria is Africa's most populous country as well as its largest national economy, leading oil exporter, and largest food producer, but it is also a major net food importer (World Bank 2021a; FAO 2021). Food security remains a challenge for the country, where, even before the COVID-19 crisis, 40 percent of the population lived below the national poverty line and many experienced food shortages. Over the past year and a half, high inflation rates arising from multiple demand and supply shocks, compounded by policy distortions and exigencies of the pandemic, have increased poverty and made food less affordable (NBS 2020; World Bank 2021b).

Malnutrition is likewise a major problem in Nigeria. According to the latest joint estimates from UNICEF, the World Health Organization (WHO), and the World Bank, nearly 12 million children under five (35 percent) in the country are stunted (UNICEF et al. 2021). At the same time, roughly

**FIGURE 1** Nigerians' food consumption composition compared to the EAT-Lancet global reference diet



**Source:** Based on household panel data from the Nigeria General Household Survey, Panels 2021-13 and 2015-16 (NBS 2019a, 2019b).

**Note:** The EAT-Lancet global reference diet is defined to meet nutritional requirements for children older than 2 years and adults and to reduce the incidence of noncommunicable diseases and overall mortality (Willett et al. 2019). It provides a useful benchmark for a healthy diet and is based on a total caloric intake of 2,500 kcal per day, as required by an average adult person. Presented food consumption averages are measured per adult equivalent (1 AE = 2,500 kcal/day). Food consumption is somewhat underestimated, especially for the highest income quintile, because foods consumed away from home are not considered. Households' expenditure for food-away-from-home consumption accounts for 9 percent of their total food expenditure, on average.

21 million Nigerians over the age of 15 are overweight and 12 million are obese – or 20 percent and 11 percent, respectively (Adeloye et al. 2021). The coexistence of multiple forms of malnutrition is prevalent and has grown rapidly in both urban and rural areas (Ecker et al. 2020).

Diets in Nigeria, across the population and in all income quintiles, are lacking diversity and continue to include too many calories from staple foods and too few from nutritious foods such as vegetables, fruits, pulses and nuts, and some animal-source foods (Figure 1). The most recent Demographic and Health Survey shows that, in 2018, 77 percent of children between 6 and 23 months were fed an insufficiently diversified diet that fell short of a daily minimum of five out of eight food groups. While the proportion of children lacking the minimum dietary diversity was greatest (83 percent) in the lowest wealth quintile of the Nigerian population, even among the highest wealth quintile, a large majority of children (63 percent) consumed inadequately diversified diets (NPC and ICF 2019). Shocks will only make this worse: studies have found that in times of crisis poor households tend to consume fewer nutritious foods, which are generally more expensive (Headey and Ecker 2013; Headey and Alderman 2019).

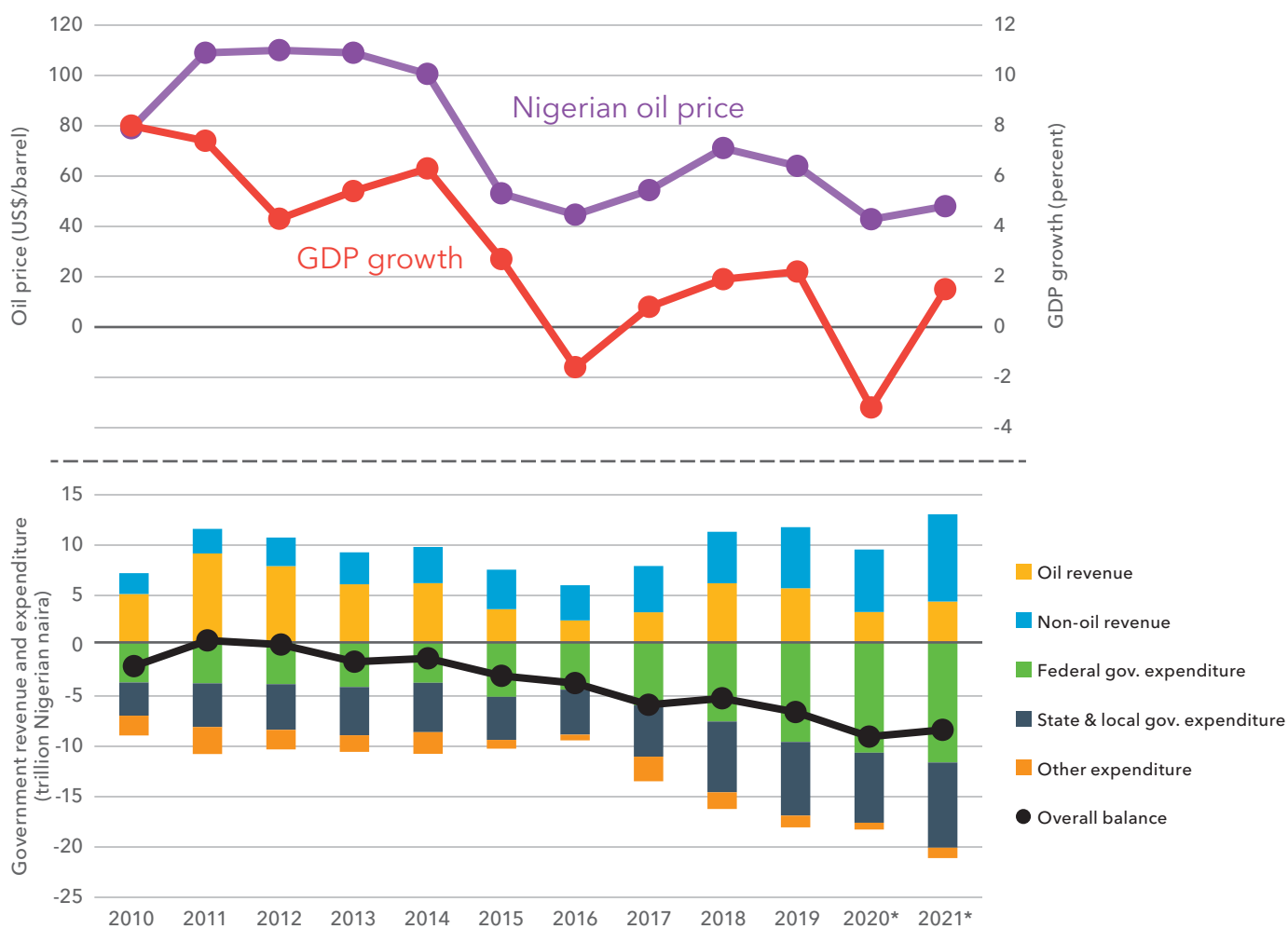
Agriculture remains the dominant sector in Nigeria's economy, accounting for more than a fifth of total GDP and a third of total employment (World Bank 2021a). Roughly 88 percent of farms in Nigeria are family-operated smallholder farms (FAO 2018). Nevertheless, the economy and government budgets rely heavily on oil exports and revenues, leaving the country vulnerable to global economic volatility and fluctuations in oil

prices; Nigeria was thrust into recession when oil prices plummeted in 2016 and again in 2020 (Figure 2). The effects of such vulnerability ripple through society: when oil revenues shrink, imports become more costly, inflationary pressure rises, and government budgets for urgently needed investments become more constrained.

Nigeria is a large importer of agricultural products – especially wheat, rice, sugar, palm oil, fish, and dairy products. In 2016, the value of agricultural imports stood at US\$6.8 billion, equivalent to 17 percent of the value of oil and gas exports and 17 percent of agriculture's gross production value (FAO 2021; IMF 2019). Most food that households consume is purchased rather than self-produced – even among farm households in rural areas (Ecker and Hatzenbuehler 2021). Food price inflation is therefore a major threat to household welfare and food security. Moreover, agricultural production relies heavily on imported seeds, fertilizer, agrochemicals, and other inputs. Thus global economic shocks threaten small farm production as well.

Inflation rose steadily throughout 2020, reaching a new high by March 2021 – four years after the previous recession – with food prices accounting for roughly 63 percent of the total increase in 2020 (World Bank 2021b). In both the 2016 recession and the COVID-19 pandemic, externally induced economic shocks were amplified by domestic demand and supply shocks. On the supply side, unfavorable weather as well as insecurity and conflict in several parts of the country affected food production and market access, driving up food prices, damaging rural livelihoods, and deterring investment in local food systems. Because

**FIGURE 2** Trends in key economic and financial indicators



**Source:** Based on data from Nigerian authorities and IMF staff estimates and projections (IMF 2013, 2014, 2016, 2017, 2019, 2021).

**Note:** \* Projections.

many nutritious foods are perishable, their supply chains are fragile and easily disrupted, making it particularly difficult to maintain diverse diets in crises. Consumers anticipating shock-induced price increases incorporate these expectations into food consumption decisions, while small-holder farmers factor them into their production decisions. Moreover, agriculture has long served as the employer of last resort in Nigeria, and family farms have absorbed large numbers of workers during economic crises, including the COVID-19 pandemic. Periodic influxes of displaced urban workers into the rural economy, however, cause uncertainty that discourages investment in productive capital such as infrastructure and mechanization (World Bank 2021b).

## INTEGRATING AGRICULTURAL POLICYMAKING

Under Nigeria’s 1999 Constitution, the federal government and state (and local) governments are responsible for

providing public goods and services in agriculture. Effective agricultural policy design and implementation therefore depend on coordination and integration across the three tiers of government. Yet intergovernmental collaboration has proved to be challenging, and the extent of intergovernmental and interagency coordination in the implementation of past agriculture sector strategies varied from one state to another (Olomola 2015). Moreover, at all levels of government, the consistency of agricultural goods and services provision has been vulnerable to fluctuations in oil revenues. Between 2010 and 2019, oil and gas revenues varied annually between 41 percent (in 2016) and 72 percent (in 2011) of total government revenues, with similar shares in the federal and state and local government expenditures (Figure 2).

Yet under relatively stable financial conditions, agricultural policymaking can work effectively. For example, certain components of the 2011–2015 Agricultural Transformation Agenda (ATA), particularly the Growth Enhancement Scheme

(GES), succeeded to an extent. This was due to a combination of federal and state cooperation, institutional reforms, effective federal ministerial leadership, professional policy process facilitation, and introduction of supply chain management to implementation procedures (Olomola 2015). Research suggests that, even under deteriorating macroeconomic conditions, farmers in states where the GES was relatively well implemented were less reliant on own production for food consumption and, due to their improved access to modern farm inputs and associated food security risk mitigation, remained better positioned for agricultural commercialization than did farmers in states where it was not (Ecker and Hatzenbuehler 2021).

These trends and experiences underscore both the promise and the current limitations of agricultural policy in Nigeria. As the pandemic arrived and economic growth vanished, several national agricultural and development plans were drawing to a close. It was in this context that the Federal Ministry of Agriculture and Rural Development began developing the 2021–2024 national agricultural sector strategy, known as the National Agricultural Technology and Innovation Plan (NATIP), and the Federal Ministry of Finance, Budget, and National Planning started to prepare the Medium-Term National Development Plan 2021–2025. The COVID-19 crisis delayed completion of both. With modest economic recovery on the horizon but no expectation of the pandemic's ending soon, these strategies should be refined and adapted to the "new normal."

Beyond helping farmers recover from the pandemic, a key focus of the new agricultural policy will be to spur a transition from mainly subsistence farming to more modern, commercial agriculture that will generate income opportunities and provide food and nutrition security. Ensuring policy coherence and continuity across ministries and from the local to the national level will be essential to achieve transformational change. Effective long-term planning requires it. However, continued macroeconomic instability and volatile government budgets will undermine long-term progress.

## SHIFTING THE PARADIGM

How can agriculture be transformed to deliver healthier and more affordable diets for all as well as better and more secure rural livelihoods? The sector must address several key issues. First, farmers in Nigeria are perpetually on a precipice due to the country's reliance on oil exports and the associated macroeconomic volatility. Second, the population is growing fast, and the country is undergoing rapid urbanization, increasing the pressure on agriculture to meet domestic food demand with a declining natural resource stock (AGRA 2020). Third, and related, demographic shifts have spurred a nutrition transition toward poorer quality diets (Popkin et al. 2012).

Macroeconomic conditions can influence farm households' production and consumption patterns, and therefore both their incomes and their diets. The pandemic has demonstrated this dynamic (Andam et al. 2020). But as farmers everywhere know, and particularly those in import-dependent countries, a crisis of much smaller magnitude – or even the looming possibility of one – may affect livelihoods and change behaviors. Neither commercialization nor production diversification alone can change that: under Nigeria's ATA, which aimed at increasing agricultural intensification and commercialization, farm households' food production diversity and dietary diversity both increased, although largely from producing and consuming a greater variety of staple foods, while the share of consumed calories from nonstaple foods declined (Ecker and Hatzenbuehler 2021). This indicates that farmers first and foremost behave in ways to mitigate risks during crises and lean times, making trade-offs for greater expected security in the short term. During such periods, smallholders will often focus production on their families' basic food needs to reduce dependency on markets, both for buying food to secure a minimal diet and for selling crops to secure their livelihood. Yet such risk-mitigation strategies can have adverse outcomes in the medium and long term – namely, degrading dietary quality and impeding income growth from commercialization. To integrate smallholder farms in the transformation process, policies must be crafted and implemented in a way that lessens the need or impulse for such strategies.

Due to Nigeria's heavy reliance on cereal imports, coupled with political incentives to keep staple food prices low, policy discussions often center around raising agricultural productivity for import substitution that relies heavily on import restrictions. Direct and indirect public support to farmers has been concentrated on the production of maize, rice, and sorghum (Takeshima and Liverpool-Tasie 2015). Much less attention has been given to the production of more nutritious foods such as vegetables, fruits, pulses, and certain animal-source foods like dairy foods and eggs. Such a staple-focused policy distorts agricultural incentives, changes relative food prices, and therefore lowers the cost of calorie-rich, micronutrient-poor diets relative to more nutritionally balanced diets. Yet given current productivity constraints (including low use of modern agricultural inputs, low levels of mechanization, and lack of irrigation combined with climate change impacts), increasing domestic staple crop production enough to meet the needs of Nigeria's rapidly growing population will likely become less cost-effective over time.

In contrast, production of most nutritious foods, which is more labor-intensive, has greater income potential for farmers and can drive job creation along the value chains. Additionally, promoting high-quality production and processing of traditional grains (such as millet and sorghum) and pulses, which are less water-intensive and contribute

to improved soil quality, may help farmers to become more crisis-resilient and earn higher incomes. Finally, Nigeria's restrictions on beef, pork, poultry, and egg imports might need to be adjusted, as they often result in higher prices for consumers without stimulating production, especially among smallholders. For example, consumption of poultry, long subject to import bans, has stagnated, and there is some evidence of an increase in informal imports from neighboring Benin rather than growth in local production (Andam et al. 2017). Such protective import bans also tend to disproportionately benefit large producers and hurt poor consumers, with relatively little fiscal benefit in terms of tax revenue gains (Johnson and Dorosh 2017; Dabalén and Nguyen 2018).

Adopting a more balanced agricultural strategy that recalibrates production incentives has great potential to raise smallholders' incomes while making healthier diets more affordable and accessible to consumers. A critical first step is to systematically assess how agricultural policies impact people's diets and how dietary outcomes compare with other key outcome indicators such as productivity growth, employment, and poverty (Pauw et al. 2021). Such evaluations can facilitate evidence-based food system policymaking and identify win-wins solutions. It is important to emphasize, however, that for the strategy shift to work it must happen on both the production *and* consumption side. Promoting healthy diets and curbing the demand for staple foods, especially among the growing overweight and obese population, and for highly processed foods, would not only improve public health (including lowering healthcare costs), but would also reduce Nigeria's heavy reliance on imports of cereals, oil crops, and sugar. However, if consumers do not switch to healthier diets, this strategy risks greater trade imbalances and food import dependence. Economic

incentives are crucial, and the policy responsibility extends beyond agriculture, with social protection being particularly important. Cash transfer programs in both urban and rural areas, including for poor farm households, are likely to be essential. Changing consumer behavior will also involve nutritional education, for example, in schools and through public information campaigns (Olney et al. 2021; Nguyen et al. 2021). Such efforts should be undertaken together; on their own, neither behavior change communication nor poverty reduction and agricultural interventions will succeed in transforming Nigeria's agrifood system to confront the accelerating nutrition transition, with all its consequences for human health and economic development.

## REAPING THE BENEFITS

The benefits of reorienting agriculture toward its role in food systems will reach well beyond the farm. In Nigeria, a policy shift that prioritizes consumer needs for healthy diets would not only improve the livelihoods of small farmers but also create new income opportunities for processors in peri-urban areas – while at the same time providing better diets for people in all socioeconomic strata living in rural, peri-urban, and urban areas alike. Careful, research-based modification of value chains for nutritious foods such as vegetables, fruits, pulses, and certain animal-source foods will help to make Nigeria's agriculture and food system more inclusive, more conducive to healthy diets, and more aligned with national and international development goals. In short, appropriate policies and investments have the potential not only to offset losses from crises but also to transform food systems so that they are strong and resilient and provide income opportunities for millions of farmers and healthy diets for all Nigerians.

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