

**PATHWAYS TO TRANSFORMING THE LOCAL FOOD SYSTEMS IN
ADDRESSING POVERTY AND HUNGER IN NIGERIA**

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Abstract

Like many other developing countries, Nigeria is grappling with the challenges of meeting the growing demand for food, ensuring food security, and improving its population's nutrition and health. Achieving the Sustainable Development Goals (SDGs), which are targeted to end hunger, achieve food security and improved nutrition, and eradicate poverty by 2030, requires transforming the local food system to be sustainable, equitable, and resilient. The task of transforming the food systems in Nigeria is complex and multifaceted and requires the collective efforts of stakeholders across the food supply chain. This paper reviews the current state of the food systems in Nigeria, identifies the significant challenges facing the sector, and proposes pathways for transforming the local food systems in Nigeria.

Keywords: zero hunger, stakeholders, farmers, food security, Nigeria

INTRODUCTION

Food systems are critical to ensuring food security, improving nutrition, and promoting economic development. Food is a basic human need; access to nutritious and safe food is essential for human health and well-being (Garcia et al., 2020; Chidiebere-Mark et al., 2022). Providing sufficient and nutritious food for all to meet the diet requirements for a healthy and active life for the populace is needed to achieve economic growth and development. Feeding an ever-increasing population through agriculture is only part of the bargain. Agriculture can facilitate poverty reduction in rural areas and manage ecosystem goods and services within the prevailing environmental change (Hansen et al., 2019; Akpan & Zikos, 2023).

The agricultural sector is the backbone of the Nigerian economy. However, smallholder farmers, who are important players in the agricultural sector, lack access to modern farming techniques and technologies, and these results to lower productivity and increase in post-harvest losses. They are predominantly rural-based, and their production is primarily stapled like

cassava, yam, maize, wheat, sorghum and beans. The small size of their holdings cannot support the demand for sufficient and nutritious foods, resulting in supply deficit and food insecurity. According to the World Food Programme (WFP, 2021), over 20 million Nigerians are food insecure, with malnutrition rates among children under five years of age as high as 37% in some parts of the country. In the 2022 Global Hunger Index, Nigeria was ranked 103 out of 121 countries with a score of 27.3, indicating a severe level of hunger (www.globalhungerindex.org). The number of people suffering from hunger and food insecurity has risen in the past decade, and the COVID-19 pandemic further exacerbated the issue (Martinez, 2021; Okoroh & Chidiebere-Mark, 2021; Amare et al., 2020). More so, the conflicts in Northern Nigeria, with pockets of evidence in other parts of the country (UN, 2019; OCHA, 2020), and the severe floods that washed off farmlands in 2022 (Onukwue, 2022) pose a grim outlook for food supply and food security in the future.

The local food system in Nigeria is unsustainable and hence cannot address the four fundamental issues of; feeding the world population, delivering healthy diets, delivering equal and equitable benefits, and ensuring the sustainability of the food system to address the negative impacts on the environment (Bene et al., 2019). There are significant barriers that have limited all the elements of the local food systems, from food production to processing, and transportation, till waste recovery. As demand for local foods increase, and there is an advocacy for consumer awareness on the benefits of consuming diverse diets, there is need to highlight the benefits of consuming local foods and ensuring the availability and affordability. Hence, there is an urgent need to transform the local food system to actualize the SDGs by 2030, particularly SDG 1 and 2 that targets eradication of poverty and hunger. The transformation of the local food system calls for collective action in identifying and addressing pathways to transform the food system.

WHAT IS A FOOD SYSTEM?

There are differing definitions of the food system and what it is not. Many scholars have attempted to define the food system considering the different components that make up a food system. IFAD (2023) defines the food system as “all the interactions between people and the natural world – land, water, the climate, etc. – and the natural world’s effects on human health and nutrition. It also includes the inputs, institutions, infrastructure, and services that support the functioning of all these aspects and the role of diets and cultural practices in shaping outcomes.” Nguyen (2018) defines the food

system as “encompassing the entire range of actors and their interlinked value-adding activities involved in the production, aggregation, processing, distribution, consumption, and disposal of food products that originate from agriculture, forestry, fisheries, and food industries, and the broader economic, societal, and natural environments in which they are embedded.” Food systems exist at various scales: global, regional, national, and local (von Braun et al., 2021).

HLPE (2017) defines the food system as “all the elements (environment, people, inputs, processes, infrastructures, institutions, etc.) and activities that relate to the production, processing, distribution, preparation, and consumption of food, and the outputs of these activities, including socio-economic and environmental outcomes”. This comprises the food value chain, the food environment, consumer behaviour.

LOCAL FOOD SYSTEMS

Global trade and international partnerships has facilitated the movement of food across countries. This has positive implications for providing diverse foods and diets beyond geographical boundaries. For example, fish harvested in Iceland could be found on the plate of a consumer in Nigeria. Consumers taste and varied attitude to food and diets have further expanded the demand for foreign foods. However, it is imperative that local food systems be strengthened to supply most of the demand of the local consumer in the face of climate change, as transportation of food over long distances sometimes result in the deterioration of these foods, increased prices and carbon footprints.

A local food system provides foods that are grown domestically or locally, and this shortens the distance between the producer and the consumers (Enthoven and Van den Broeck, 2021). In local food systems, all the processes from production to consumption and waste takes place over smaller geographical areas. A local food system promotes the growth of local farmers market and supports all the food systems actors for improved income and enhanced market access. Previous studies have reported that local food systems improve consumers access to nutritious and safe foods, increase the income of farmers and other food systems actors, promote environmental health and mitigate the effect of climate change (Enthoven and Van den Broeck, 2021; Diekmann et al., 2020).

THE CURRENT STATE OF THE FOOD SYSTEM IN NIGERIA

Nigeria is a populous country with an estimated population of 223 million people (World Population Prospects, 2022). A third of the population is employed in the agricultural sector, and they are predominantly smallholder farmers who are highly dependent on rain-fed agriculture (FAO, European Union, & CIRAD, 2022), with average land holdings ranging between 1 hectare in the south and 4 hectares in the north (Matemilola & Elegbede (2017)). The major staples cultivated in Nigeria are rice, cassava, maize, sorghum, millet, and yam, and the foods consumed are predominantly carbohydrate-dense foods.

There are predominantly low yields in crop production as the farmers are constrained by inadequate irrigation, low adoption of technology, climate change, pests and diseases, conflicts, etc. (Akpata, 2023; Onyeneke et al., 2022; Fawowe, 2020). Food safety issues prevail, such as food-borne diseases, which cause about 200 000 deaths annually (Ezirigwe, 2018). Over 40% of Nigerians in 2019 lived in low-income families (spending less than N137, 430 per person in the family each year), and 57% of all household expenditures in the country is on food (National Pathways to Food System Transformation, 2023). A report by Gain shows that the incidence of anaemia among women of reproductive age accounts for 55.1% of women aged 15 to 49 years; 31.5% of children under 5 years of age are stunted (this is higher than the average of 30.7% for the African region); and 6.5% are affected by wasting (<https://globalnutritionreport.org/resources/nutrition-profiles/africa/western-africa/nigeria/#overview>). The Gain report further reveals that 1.6% of children under 5 years of age are overweight. Nigeria has shown limited progress towards achieving the diet-related non-communicable disease (NCD) targets. 15.7% of adult (aged 18 years and over) women and 5.9% of adult men are living with obesity. Nigeria's obesity prevalence is lower than the regional average of 20.8% for women and 9.2% for men. At the same time, diabetes is estimated to affect 6.8% of adult women and 7.5% of adult men. In 2021, 28.3% of Nigerians were below the minimum level of dietary energy consumption (Akpata, 2023).

In 2021, a national food systems dialogue which saw the participation of stakeholders prioritized achieving SDGs 1,2,3,4,5,8, 10 and 17. The recommendation from the dialogue was grouped into 6 solution clusters with short and long term expectations. The solution clusters include; investing in food security and nutrition knowledge dissemination, skills' development, and information management systems to enhance agricultural productivity; building sustainable, responsive, and inclusive food systems; value chain and market system development for improved productivity, improved livelihoods, and poverty reduction; increase demand for, and consumption of

adequate, nutritious, and healthy foods, including in humanitarian contexts ; promotion of peace-building initiatives, food marketing and regulation standards and an enabling environment for food systems activities; and linking research, innovation, and extension for a sustainable food system

NEED FOR LOCAL FOOD SYSTEMS TRANSFORMATION IN NIGERIA

The challenges facing the food system in Nigeria are numerous and complex. They include low productivity, inadequate infrastructure, limited access to finance, poor quality control, an inadequate policy environment, poor logistics, and limited market linkages, which result in high transaction costs and inefficient value chains. Smallholder farmers who have limited access to contemporary farming techniques and technologies dominate the agricultural sector of the Nigerian economy, which results in subpar output, post-harvest losses, and low profitability for farmers and other chain actors. These challenges have resulted in food insecurity, malnutrition, and poverty, especially among rural communities.

Transforming the local food system within the Nigerian landscape would entail fundamental changes that are sustainable in the investments, markets, institutions, and regulations that shape them. The aspiration to attain climate neutrality and the SDGs by 2030 is tied to changing the food system (von Braun, 2021). IFAD (accessed July 4, 2023) argues that any modifications to the food system must take into account both the viewpoints of the consumers who rely on the system for their food purchases as well as the workers whose livelihoods depend on it. This emphasizes the opportunity for food producers (and other workers within the food system) to sustainably provide nutritious food for all and to be adequately rewarded for their work so that they do not become vulnerable to hunger (IFAD, accessed 7/4/2023). Food system changes are continuous.

The UN Food Systems Summit (2021) captured five action tracks in support of the SDGs; ensuring access to safe and nutritious food for all (ending hunger and all forms of malnutrition), shifting to sustainable consumption patterns (promoting and creating demand for healthy and sustainable diets and reducing waste through promoting reuse and recycling of food resources); boosting nature-positive production (acting on climate change, reducing emissions and increasing carbon capture, regenerating and protecting critical ecosystems, and reducing food losses and energy wastage); advancing equitable livelihoods and value distribution (eliminating poverty, distributing risk, escalating inclusion and distribution of value.); and finally, building resilience to vulnerabilities, shocks and stresses (promoting the continued functionality of sustainable food systems). These action tracks

identify opportunities and problems in the food system and provide a roadmap for transforming it to meet the SDGs.

PATHWAYS FOR TRANSFORMING THE LOCAL FOOD SYSTEMS

1. Improving productivity

To change Nigeria's food system, smallholder farmers must increase their productivity. This can be accomplished by using contemporary farming technologies, extension services, and access to financial services. Recent studies have shown that the use of contemporary farming technologies, such as improved seed varieties, fertilizers, and mechanized equipment, can significantly increase smallholder farmers' productivity (Takeshima & Salau, 2010; Ojo et al, 2019).

Extension services are also critical to improving smallholder farmers' productivity. Extension services provide farmers with the knowledge and skills they need to adopt modern farming practices and technologies. Many scholars have linked access to extension advisory services to improvements in farmers' productivity (Danso-Abbeam et al., 2018; Obasi et al. 2013). More so, access to financial services is crucial to smallholder farmers' ability to access modern farming technologies and extension services. Access to credit facilities is positively associated with farmers' adoption of modern farming technologies (Teye & Quarshie, 2021).

2. Enhancing Value Chain Efficiency: Improving the efficiency of the food value chain

Transforming local food systems are critical to reducing post-harvest losses, increasing profitability, and improving food security. This can be achieved by enhancing value chain efficiency through improved infrastructure, such as storage facilities, transportation networks, and market linkages. Recent studies have highlighted the importance of value chain upgrading for enhancing the competitiveness of agricultural products in Nigeria (Chidiebere-Mark, 2018, PWC, 2017).

3. Strengthening Food Safety and Quality Control

Ensuring food safety and nutrition is critical to promoting public health and enhancing the competitiveness of Nigerian food products in domestic and international markets. Strengthening food safety systems and promoting healthy diets can help to reduce the burden of food borne illnesses and malnutrition in Nigeria. Ensuring food safety can be achieved by developing quality control systems, certification schemes, and regulatory frameworks. Strengthening food safety and nutrition interventions can help improve the health and well-being of Nigerians (Onyeaka et al., 2021).

4. Strengthening the Policy Environment

Developing a supportive policy environment is critical to transforming the food systems in Nigeria. This can be achieved by formulating and implementing policies that promote investment, innovation, and food value chain development. OECD (2023) emphasized the need for policy coherence and coordination across government agencies and stakeholders in the food systems sector.

5. Promoting Research and Innovation

Encouraging research and innovation in the food systems sector is critical to developing new technologies, practices, and products to enhance productivity, efficiency, and quality control. Izuogu et al., (2023) and Malabo Montpellier Panel (2019) asserts that digital technologies has potentials for enhancing agricultural productivity and value chain efficiency in Nigeria

6. Investing in Climate-Smart Agriculture

Climate change poses a significant threat to food systems in Nigeria, affecting crop yields, food security, and livelihoods. Investing in climate-smart agriculture, which includes conservation agriculture, agro-forestry, and improved water management, can help reduce climate change's impact on food systems. Previous studies have shown that Climate-smart agriculture has potentials to enhance the resilience of smallholder farmers in Nigeria (Ariom et al., 2022; Ifeanyi-Obi et al., 2022; Adesina, & Loboguerrero, 2021).

7. Promoting Gender Equality

Gender inequalities are pervasive in the food systems in Nigeria, with women often facing limited access to land, credit, and extension services. Promoting gender equality in the food systems can help to enhance productivity, reduce poverty, and improve nutrition. Recent studies have emphasized the importance of women's empowerment in agriculture and the need for gender-sensitive policies and programs in the food systems sector (Njuki et al., 2020).

8. Promoting Inclusive Business Models

Inclusive business models that involve the participation of smallholder farmers and other actors in the food value chain can help to promote a sustainable and inclusive growth in the food systems (Pouw et al., 2023). These models can improve market access, reduce transaction costs, and enhance the profitability of smallholder farmers. Inclusive business approaches aim at addressing the food security issues and poverty in a society, and can also promote sustainable livelihoods Kaminski, et al., (2020) noted that inclusive business models should focus on both economic and

social upgrading. The economic impact of an inclusive business model is designed to address poverty and inequality, while the social impact of an inclusive business approach targets the poor and vulnerable. Economic empowerment is expected to translate to improved nutrition.

CONCLUSION

Transforming the food system in Nigeria is critical to ensuring food security, improving nutrition, and promoting economic development. The challenges facing the sector are numerous and complex, but the proposed pathways can help address these challenges and promote the transformation of the food system in Nigeria. A collective effort from all stakeholders, including farmers, policymakers, researchers, and the private sector, is needed to make the proposed pathways a reality and transform the food system in Nigeria.

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