

Impact of the Russia-Ukraine War on Food and Bread Products in Nigeria

Abayomi Olatunji Awe,¹ Olagoke Oluwafemi Awotayo, PhD.,² John Agbonifo, PhD.,³
& Adetunji Lawrence Kehinde, PhD.⁴

¹Global Affairs and Sustainable Development Institute (GASDI),
Osun State University, Osogbo, Nigeria. Email: abayoawe@hotmail.com

²Department of Political Science, University of Ilesha, Osun State, Nigeria.

Corresponding author. Email: Olagoke_awotayo@unilesa.edu.ng

<https://orcid.org/0000-0001-9768-8910>

³Professor, Sociology of Development, Osun State University, Osogbo, Nigeria.

Email: john.agbonifo@uniosun.edu.ng

⁴Professor of Agricultural Economics, Department of Agriculture and Agribusiness, Osun State University,
Osogbo, Nigeria. Email: kehindeal@uniosun.edu.ng

Abstract:

The Russia–Ukraine war has caused substantial disruptions to global food supply chains, especially for wheat and other staple commodities. Russia and Ukraine are major exporters of wheat and agricultural inputs, which are critical to global food availability and price stability. Since the conflict began in February 2022, there have been export disruptions, increased transportation costs, and heightened price volatility in grain markets. Nigeria, which relies heavily on imported wheat for bread and food products, has been particularly affected. The study shows that the Russia–Ukraine war greatly raised Nigeria's wheat import expenses, leading to higher bread prices and smaller products. These cost increases were passed on to consumers through the flour milling and baking industries, leading to higher bread prices and lower affordability. The findings underscore the interconnectedness of global markets and the far-reaching impacts of geopolitical conflicts on food security in vulnerable countries like Nigeria. It is crucial for policymakers to consider these implications and work towards building more resilient and diversified food supply chains to mitigate future disruptions. Further show that price increases have disproportionately impacted low-income households, thereby worsening food insecurity. The main conclusion drawn from this research is that geopolitical conflicts can have direct and significant effects on food availability and affordability in developing countries. It is imperative for governments and international organizations to address these issues through coordinated efforts to ensure food security for all populations. It is that Nigeria's dependence on imported wheat increases exposure to external shocks. The study recommends that Nigeria strengthen domestic production, diversify import sources, and build food system resilience.

Keywords: Russia-Ukraine War. Food. Nigeria. Bread Prices.

DOI: <https://doi.org/10.5281/zenodo.18729094>

This work is licensed under the Creative Commons Attribution
International License (CC BY 4.0).



1. INTRODUCTION

National food systems are deeply interconnected, allowing disruptions in one region to quickly transmit economic and social shocks elsewhere. Countries that depend on food imports, like developing economies, are very vulnerable to global crises. The Russia–Ukraine war, which started in February 2022, is one such example. While it is often discussed in terms of its humanitarian and geopolitical implications, the conflict has also caused far-reaching disruptions in global food systems (FAO, 2022; World Bank, 2022). Russia and Ukraine are key players in global agriculture. Before the war, they supplied about 30–34% of traded wheat, over 25% of barley exports, nearly 20% of maize exports, and about 75% of sunflower oil exports (IFPRI, 2022; FAO, 2022). Russia also leads in fertiliser exports, especially nitrogen-based products critical for global agriculture. The war disrupted production, logistics, and export routes in the Black Sea, one of the world's top grain corridors, causing sharp increases in food prices and unusual volatility in agricultural markets (OECD, 2022).

The implications of these disruptions have been especially severe for import-dependent countries in Africa, the Middle East, and parts of Asia. Nigeria, Africa's most populous country and one of the continent's largest economies, stands out as particularly vulnerable. Despite its vast arable land and large agricultural labour force, Nigeria's domestic wheat production accounts for less than 5% of national consumption, forcing near-total reliance on imports for products such as bread, pasta, noodles, biscuits, and pastries (USDA, 2023; World Grain, 2022).

Bread plays a crucial role in Nigeria's food system due to its widespread consumption across different socio-economic classes and regions. For many low-income households, bread is among the most accessible sources of calories. Consequently, changes in bread prices have immediate effects on household welfare, food security, and social stability (National Bureau of Statistics [NBS], 2023). According to the World Bank, Nigeria imported about \$1.23 billion worth of durum wheat in 2019.

The Russia–Ukraine war changed the global wheat trade. Port blockades, destroyed infrastructure, labour shortages, and sanctions severely limited Black Sea exports. Early in the conflict, global wheat prices rose by more than 25%, reaching levels not seen since 2007–2008 (FAO, 2022; Illinois ACES, 2022). Though prices dropped with partial export agreements, they stayed above pre-war levels, maintaining pressure on importers like Nigeria.

For Nigeria, global wheat price shocks arrived quickly and strongly. Rising global prices coincided with local challenges, including currency depreciation, inflation, forex scarcity, insecurity in farm regions, and higher transportation and energy costs. Together, these increased wheat imports and flour production costs led to significant bread price hikes, loaf reductions, and even bakery closures (Daily Trust, 2022; Neptune Prime, 2022). The war's impact reached beyond wheat. Russia's dominance of the fertiliser market meant sanctions and shortages pushed up global fertiliser prices, limiting agricultural output. In Nigeria, higher fertiliser prices have hurt wheat and alternative staples such as maize, rice, and sorghum, restricting options and worsening food insecurity (CGIAR, 2022; IMF, 2023). Climbing energy prices further increased food production and transport costs, raising inflation.

The Russia–Ukraine war exposes how Nigeria's high dependence on wheat imports and low agricultural productivity dramatically amplify vulnerability to global shocks. A central argument of this study is that these structural weaknesses—especially

reliance on imports—directly translate international price fluctuations into higher domestic food costs, eroding household food security. Focused, country-specific analyses are necessary to guide effective policy responses.

This study examines the Russia–Ukraine war’s impact on Nigeria’s food and bread supply, focusing on wheat prices and food security. By reviewing academic literature, policy reports, economic data, and news analysis, it aims to show how global conflicts affect food access in import-dependent economies. Such insight is key for policies that boost resilience and protect food security during global disruptions.

1.1 Statement of the problem

Nigeria’s food system faces persistent structural vulnerabilities, exacerbated by external shocks such as the Russia–Ukraine war. Despite decades of policy to promote agricultural self-sufficiency, the country remains reliant on imported commodities, particularly wheat, due to agro-ecological constraints, low yields, limited mechanisation, inadequate irrigation, insecurity in farming communities, and underinvestment in agricultural research and development (World Bank, 2021; Covenant University Study, 2022). Before the Russia–Ukraine conflict, Nigeria sourced much of its wheat from the Black Sea. A Nairametrics report notes that Nigeria imported 1.29 trillion-naira worth of durum wheat in 2021, a 71.1% increase from the prior year, underscoring the country’s dependence on external wheat imports. The war then quickly exposed Nigeria to rising global prices and shortages.

The problem was intensified by concurrent domestic economic challenges. Nigeria entered the war period with already high inflation, driven by supply chain disruptions from the COVID-19 pandemic, insecurity in major food-producing regions, and persistent macroeconomic imbalances. By mid-2022, inflation exceeded 20%, while food inflation rose even faster, eroding household purchasing power (NBS, 2023). According to World Bank trade data, Nigeria continued to import wheat and meslin flour from countries including Turkey, the United Arab Emirates, India, and Canada in 2023, which meant that as the naira depreciated and official foreign exchange became harder to access, wheat importers and flour millers needed more naira to pay for these imports. This contributed to higher bread prices across Nigeria. Bakeries faced rising costs of flour, diesel, yeast, sugar, packaging materials, and transportation. In response, many bakeries increased retail prices, reduced loaf sizes, lowered product quality, or exited the market entirely. Wheat prices in Nigeria rose by 63.3 per cent in response to major shocks such as the COVID-19 pandemic, the war in Ukraine, and fuel subsidy reforms between 2021 and 2023, making basic foods like bread less affordable for many low-income households, according to research published by Amare et al. Fertiliser shortages and price increases constrained domestic agricultural production, reducing output of alternative staples such as maize and rice. This limited consumers’ ability to substitute away from wheat-based foods, intensifying food insecurity (FAO, 2022; CGIAR, 2022). The situation was further compounded by insecurity in northern Nigeria, where much of the country’s grain production occurs, restricting farmers’ access to land and markets.

Despite the severity of these impacts, there remains a lack of focused empirical research examining the specific effects of the Russia–Ukraine war on Nigeria’s bread sector and wheat supply chains. Much of the existing literature addresses global or regional food price trends, often without disaggregating country-level dynamics or considering how global shocks interact with domestic structural weaknesses. This gap

limits policymakers' ability to design targeted interventions that address both immediate price pressures and long-term food system resilience. The core problem, therefore, is that Nigeria's heavy reliance on imported wheat has made its food system highly susceptible to global geopolitical shocks, as the Russia–Ukraine war starkly illustrates. Rising bread prices, reduced affordability, and worsening food insecurity highlight the urgent need for evidence-based strategies to strengthen domestic production, diversify import sources, and build resilient food supply chains. Without such measures, Nigeria remains exposed to future global crises that threaten the stability of its food system and the welfare of its population.

1.2 Research questions

1. How did the Russia–Ukraine war affect global wheat supply and prices relevant to Nigeria?
2. What impact did the conflict have on wheat import costs and bread prices in Nigeria?
3. How did rising bread prices influence household food affordability and food security in Nigeria?
4. What policy measures can reduce Nigeria's vulnerability to future global food supply disruptions?

1.3 Significance of the study

This study is significant because it deepens understanding of how global geopolitical conflicts affect domestic food systems in developing countries. In an increasingly interconnected global economy, events occurring outside national borders can have direct and far-reaching consequences for food availability, affordability, and household welfare. By focusing on Nigeria, this study demonstrates how the Russia–Ukraine war translated into rising food and bread prices, thereby affecting everyday consumption patterns and nutritional outcomes. This perspective is particularly relevant for countries that depend heavily on food imports and are therefore vulnerable to disruptions in international markets.

The study is especially important due to its focus on bread and wheat-based products, which are widely consumed across Nigeria. Bread is a major staple in many households and is often regarded as a relatively affordable source of calories. Consequently, increases in bread prices have immediate implications for food security, particularly for low-income households. By examining bread as a key indicator, the study highlights how global supply shocks can disproportionately affect vulnerable populations and worsen existing inequalities in food access.

From a policy standpoint, the findings of this study are valuable to government institutions responsible for agriculture, trade, and food security. The analysis provides evidence to inform strategies to reduce Nigeria's vulnerability to external shocks. Such strategies include strengthening domestic wheat production, improving agricultural productivity, diversifying food import sources, and implementing measures to stabilise

food prices. The study also underscores the importance of proactive food security planning in mitigating the impact of future global crises.

The study further contributes to academic discourse on food security, global trade, and conflict economics. While many studies examine global food price movements, fewer focus on how these trends affect specific countries and commodities. By providing a Nigeria-specific analysis of bread and wheat products, this study fills an important gap and offers insights that complement broader global research. It therefore serves as a useful reference for researchers and students interested in the localised effects of global conflicts on food systems.

In addition, the study is relevant to civil society organisations, development partners, and agribusiness stakeholders involved in food production and distribution. The findings can support the design of interventions to enhance food system resilience, protect vulnerable populations, and promote sustainable agricultural practices. Overall, the study contributes to both knowledge and practice by highlighting the urgent need to strengthen Nigeria's food system amid global uncertainty.

2. METHODOLOGY

The study employs a descriptive-analytical research design to examine the impact of the Russia–Ukraine war on food and bread products in Nigeria. This design is appropriate for analysing trends and relationships in socio-economic data without manipulating variables. The descriptive aspect of the study allows for the systematic presentation of changes in wheat imports, bread prices, and food inflation over time, while the analytical component enables interpretation of how these changes relate to global supply disruptions caused by the war.

This approach is particularly suitable given the macroeconomic and international nature of the research problem. The study seeks to explain observed changes in Nigeria's food market in the context of global developments, rather than to establish direct causal relationships through experimental methods. The study relies on secondary data from credible, authoritative sources. These include reports from international organisations, national economic and statistical agencies, academic journals, policy briefs, and market surveys. In addition, newspaper articles and industry publications related to bread production and wheat markets were consulted to capture recent developments and industry responses to rising costs.

The use of multiple data sources enhances the study's reliability by enabling triangulation and cross-verification of information. Secondary data are particularly appropriate for this research because they provide broad coverage of global and national trends over time and are well-suited for analysing the impacts of large-scale external shocks. Data analysis was carried out using qualitative content analysis and trend analysis. Trend analysis involved comparing wheat import volumes, global wheat prices, and domestic bread prices before and after the outbreak of the Russia–Ukraine war. This comparison helped identify significant shifts in price levels and supply conditions associated with the conflict.

Qualitative content analysis was used to examine policy documents, reports, and media publications. This method enabled the identification of key themes related to food price increases, supply chain disruptions, and policy responses. By combining quantitative trends with qualitative insights, the study provides a comprehensive understanding of how global events influenced Nigeria's food and bread markets. Overall,

the methodology adopted ensures that the study's findings are grounded in systematic analysis and contextual interpretation, making them relevant for academic, policy, and practical applications.

3. FINDINGS

The findings indicate that the Russia–Ukraine war had significant effects on Nigeria's food system. First, wheat imports became more expensive due to higher global prices and increased freight costs. Nigeria was forced to source wheat from alternative suppliers, often at higher prices. Second, flour millers faced higher production costs, which they passed on to bakeries. As a result, bread prices rose sharply across urban and rural markets. In many cases, bakeries reduced loaf sizes or quality to remain in operation. Third, rising bread prices reduced affordability for households, particularly low-income earners who rely on bread as a cheap source of calories. This contributed to reduced food consumption and dietary quality. The war exacerbated existing food inflation, reinforcing the link between global conflicts and domestic economic instability.

3.1 Discussion of findings

The findings of this study indicate that the Russia–Ukraine war had a substantial and multifaceted impact on Nigeria's food and bread markets, with disruptions in international commodity flows extending directly into the daily lives of Nigerian households. The conflict caused major disruptions in global agricultural markets, especially in wheat, which is essential for Nigeria's food sector (FAO, 2022). A primary finding was the marked increase in wheat import costs following the outbreak of hostilities. Nigeria is heavily dependent on imported wheat because domestic production remains minimal, with a considerable portion of imports historically sourced from Russia and Ukraine (USDA, 2022). According to Augusto & Co., Nigeria relies heavily on wheat imports, making it particularly vulnerable to disruptions caused by the Russia-Ukraine conflict. The war led to interruptions in wheat supply chains, contributing to rising global wheat prices and forcing Nigeria to look for alternative suppliers despite higher costs. These higher import costs were passed on to the domestic economy, increasing the financial burden on food processors. This dynamic illustrates how external geopolitical shocks can swiftly transmit price disturbances into Nigeria's economy, given its high import dependence and limited buffers against global market volatility (World Bank, 2023).

The increased cost of wheat had specific consequences for local flour millers and bakeries, affecting their operations significantly. Higher import prices directly increased flour production costs, compelling bakeries to raise the retail prices of bread and other wheat-based products. Some producers adopted coping strategies such as reducing loaf sizes, an approach known as “shrinkflation”, or adjusting product quality to remain financially viable. While commercially rational, these strategies reduced the real value of bread for consumers, intensifying the economic strain on households already contending with a broader rise in living costs (Adebayo & Olagunju, 2022). A key consequence of these price dynamics was the reduced affordability of bread, especially for low-income households. Bread remains central to the Nigerian diet as a widely accessible source of calories. As prices rose, households saw their purchasing power diminish, forcing many to make difficult adjustments in food consumption. Some families were compelled to allocate a greater share of already limited income to staple foods, while others substituted bread with less preferred or nutritionally inferior alternatives. These results show that the

war's impact went beyond commodity markets to affect household welfare. They underscore that food insecurity in Nigeria is influenced by both food availability and economic access (Ogunniyi et al., 2022).

The war also aggravated pre-existing inflationary pressures in Nigeria's food economy. Even before the conflict, the country faced elevated inflation linked to currency depreciation, domestic supply chain disruptions, and broader macroeconomic vulnerabilities. The global wheat shock intensified these pressures, contributing to sustained food price inflation. Although inflation affected all income groups, its effects were most severe among poorer households, who spend a larger proportion of their income on food. These compounding pressures heightened concerns about rising food insecurity and deepening poverty (National Bureau of Statistics, 2023).

Another dimension of the findings relates to structural weaknesses within Nigeria's food system that the war exposed rather than caused. Nigeria's heavy dependence on imported staples highlights persistent constraints in domestic agricultural production. With domestic wheat output meeting only a small share of national demand, the country remains vulnerable to external shocks. This vulnerability is exacerbated by insecurity in major farming regions, inadequate agricultural infrastructure, and insufficient policy coordination. Thus, unless Nigeria strengthens domestic production and builds a more resilient supply chain, exposure to global commodity fluctuations will persist (IFPRI, 2022).

Furthermore, the interaction between global conflict and Nigeria's domestic economic context emerged as a recurring theme. The war's impact was compounded by currency devaluation, increased transportation and energy expenses, and overall macroeconomic instability, magnifying its effects. These cumulative pressures suggest that Nigeria's food inflation crisis cannot be attributed solely to external shocks but rather to the intersection of international disruptions and domestic structural constraints.

The findings indicate that effective policy responses must address both immediate price pressures and long-term structural challenges. Short-term strategies, such as import duty waivers or the release of strategic grain reserves, may offer temporary relief but do not resolve underlying systemic weaknesses. Building long-term resilience will require investments in agricultural production capacity, diversification of import sources, expansion of storage and processing infrastructure, and stronger social protection systems to support vulnerable households during economic shocks (World Bank, 2023). The study demonstrates that the Russia–Ukraine conflict significantly disrupted wheat supply chains and food markets in Nigeria. These disruptions elevated production costs, raised bread prices, reduced consumer affordability, intensified inflationary pressures, and exposed structural vulnerabilities in Nigeria's food system. Understanding these complexities is essential for developing policies that strengthen food security and enhance resilience to future global shocks.

4. RECOMMENDATIONS

Based on the study's findings, several policy recommendations are proposed to strengthen Nigeria's food system and reduce the country's vulnerability to external shocks, such as the Russia–Ukraine conflict. The disruptions caused by the war revealed major structural weaknesses in Nigeria's dependence on imported wheat and highlighted the need for both short-term stabilisation measures and long-term strategic reforms.

One major recommendation is a substantial investment in domestic wheat production. Nigeria's current production capacity remains far below national demand, making the country highly susceptible to international price volatility. Increasing funding for wheat research, irrigation facilities, improved seed varieties, and mechanised farming is essential for building a more resilient domestic supply base. Strengthening agricultural extension services would also enable farmers to adopt best agronomic practices and improve yields. Enhanced collaboration among research institutions, state governments, and private-sector actors can accelerate the development of adaptable wheat varieties suited to Nigeria's climate. Expanding local production is not only an economic priority but also a critical strategy for national food security.

Diversification of wheat import sources. The concentration of Nigeria's wheat imports in a small number of countries made the economy highly vulnerable when the Russia–Ukraine conflict disrupted global supply chains. To mitigate future risks, Nigeria should strategically broaden its trade partnerships by engaging suppliers from other wheat-producing regions such as North America, South America, and parts of Asia. Such diversification would reduce over-dependence on any single geopolitical region and enhance supply stability even during global disruptions. Trade diversification should be accompanied by improved port efficiency and logistical reforms to lower overall import costs.

Support for key players in the domestic processing sector is also essential. Therefore, the study recommends targeted support for bakers and flour millers, who faced significant operational challenges due to rising wheat prices. Short-term measures such as temporary subsidies, tax waivers, or reduced import duties on wheat and baking inputs would help stabilise production costs and minimise sudden price spikes in bread and related products. These support mechanisms would allow bakeries, especially small and medium-sized enterprises, to remain operational without resorting to loaf-size reductions or drastic price increases. Additionally, facilitating access to low-interest credit can help bakeries modernise equipment and improve energy efficiency, ultimately lowering long-term operational costs.

Another crucial recommendation is the strengthening of Nigeria's food security policies. The events surrounding the Russia–Ukraine war demonstrated the importance of having robust national food reserves capable of buffering the country against global supply disruptions. Strengthening strategic grain reserves and improving storage infrastructure will ensure that essential staples can be released into the market during periods of scarcity. Establishing or upgrading early warning systems would further allow policymakers to anticipate global disruptions and respond proactively rather than reactively. Improved coordination between federal and state agencies is necessary to ensure that food security initiatives are implemented effectively and equitably nationwide.

The study also recommends promoting wheat substitutes as a long-term strategy to reduce the nation's dependence on imported wheat. Nigeria is richly endowed with alternative crops such as cassava, sorghum, and millet, all of which can be processed into flour suitable for bread and confectionery products. Encouraging the widespread adoption of composite flour blends, such as cassava-wheat or sorghum-wheat blends, can significantly reduce wheat import requirements. The government can support this transition by offering incentives to processors that adopt composite flour technology, enforcing standards for blended flour production, and supporting research to improve the

quality and acceptability of composite flour products. Public awareness campaigns can also help shift consumer perception and encourage greater acceptance of bread made with local substitutes.

These recommendations address both the immediate economic disruptions caused by the Russia–Ukraine war and the long-term structural reforms needed to strengthen Nigeria’s food system. Effective implementation will require sustained political will, multi-stakeholder collaboration, and a holistic approach that links agriculture, trade, industry, and social protection.

5. CONCLUSION

The Russia–Ukraine war has had a profound and far-reaching impact on Nigeria’s food and bread markets. The conflict disrupted global wheat supply chains, leading to sharp increases in international prices that were transmitted directly into the Nigerian economy. As a country heavily dependent on wheat imports, Nigeria saw significant increases in flour millers’ production costs, which in turn raised bread prices nationwide. These rising prices reduced affordability for households, particularly low-income earners who rely on bread as a key source of daily calories. The consequences extended beyond household budgets to broader issues of food security, dietary quality, and economic stability. The study concludes that Nigeria’s heavy reliance on imported wheat represents a major structural vulnerability, exposing the national food system to external shocks beyond its control. The Russia–Ukraine conflict was not the root cause of Nigeria’s food inflation challenges, but it sharply magnified existing weaknesses, including currency instability, logistical inefficiencies, limited domestic production, and weak policy coordination. The crisis highlighted how global geopolitical events can quickly destabilise local markets, especially in the absence of resilient systems.

To safeguard Nigeria against future disruptions, long-term structural reforms are essential. Strengthening domestic wheat production, diversifying trade sources, supporting local processors, and building robust food security mechanisms are vital steps toward a more stable and self-reliant food system. Promoting the use of local substitutes, such as cassava and sorghum, also offers a sustainable pathway to reducing import dependence. In essence, while the Russia–Ukraine war triggered immediate challenges, it also provided an opportunity for Nigeria to reassess and reform its food system. With strategic action and sustained investment, Nigeria can build a more resilient food economy capable of withstanding future global crises.

References

- Agusto & Co. (2022). *Russia–Ukraine conflict puts food insecurity in the spotlight: Reviewing the Nigeria game plan*. Agusto & Co. Research. <https://www.agusto.com/publications/russia-ukraine-conflict-puts-food-insecurity-in-the-spotlight-reviewing-the-nigeria-gameplan/>
- Balana, B., Andam, K. S., Amare, M., Adeyanju, D., & Laborde Debucquet, D. (2023). The Russia–Ukraine crisis presents threats to Nigeria’s food security, but potential opportunities for the fertilizer and energy sectors. In J. Swinnen & J. McDermott (Eds.), *The Russia–Ukraine conflict and global food security* (pp. 164–169). International Food Policy Research Institute. https://ideas.repec.org/h/fpr/ifpric/9780896294394_32.html
- CGIAR. (2022). *Impacts of the Ukraine crisis on global food security*. CGIAR. <https://www.cgiar.org/research/impacts-of-the-ukraine-crisis-on-global-food-security/>
- Covenant University. (2022). *Insecurity and food production in Nigeria*. Covenant University Research Brief. <https://covenantuniversity.edu.ng>
- Daily Trust. (2022, April 12). *How the Russia–Ukraine war is affecting Nigeria’s wheat market*. <https://dailytrust.com/how-the-russia-ukraine-war-is-affecting-nigerias-wheat-market/>
- Food and Agriculture Organization of the United Nations. (2022). *The importance of Ukraine and the Russian Federation for global agricultural markets and the risks associated with the current conflict*. FAO. <https://www.fao.org/3/cb9013en/cb9013en.pdf>
- Food and Agriculture Organization of the United Nations. (2023). *Food outlook: Biannual report on global food markets*. FAO. <https://www.fao.org/publications/food-outlook>
- Illinois College of Agricultural, Consumer and Environmental Sciences. (2022). *Global wheat price impacts of the Ukraine conflict*. University of Illinois Urbana-Champaign. <https://aces.illinois.edu/news/global-wheat-price-impacts-ukraine-conflict>
- International Food Policy Research Institute. (2022). *Russia–Ukraine crisis and food security implications*. IFPRI. <https://www.ifpri.org/blog/russia-ukraine-crisis-and-food-security-implications>
- International Food Policy Research Institute. (2023). *Food price volatility, conflict, and food security*. IFPRI. <https://www.ifpri.org/publication/food-price-volatility-conflict-and-food-security>

- International Monetary Fund. (2023). *Nigeria: Selected issues* (IMF Country Report No. 23/xxx). IMF.
<https://www.imf.org/en/Publications/CR/Issues/2023/Nigeria-Selected-Issues>
- National Bureau of Statistics. (2022). *Foreign trade statistics report*. NBS.
<https://www.nigerianstat.gov.ng/elibrary>
- National Bureau of Statistics. (2023). *Consumer price index and inflation report: December 2023*. NBS.
<https://www.nigerianstat.gov.ng/elibrary/read/1241439>
- Neptune Prime. (2022, May 18). *How the Russia–Ukraine war affects bread prices in Nigeria*.
<https://neptuneprime.com.ng/how-the-russia-ukraine-war-affects-bread-prices-in-nigeria/>
- Observatory of Economic Complexity. (2021). *Nigeria wheat imports*. OEC.
<https://oec.world/en/profile/bilateral-product/wheat/reporter/nga>
- Ogunniyi, A., Mavrotas, G., Olagunju, K., Fadare, O., & Adedoyin, R. (2022). Governance quality, remittances and food insecurity in sub-Saharan Africa. *World Development*, 149, 105695.
<https://doi.org/10.1016/j.worlddev.2021.105695>
- Organisation for Economic Co-operation and Development. (2022). *Global economic outlook*. OECD.
<https://www.oecd.org/economic-outlook/>
- Quartz Africa. (2022, March 30). *Why Nigeria’s bread is getting more expensive*.
<https://qz.com/africa/2151530/why-nigerias-bread-is-getting-more-expensive/>
- United States Department of Agriculture. (2022). *Nigeria: Grain and feed annual report*. USDA Foreign Agricultural Service.
https://apps.fas.usda.gov/newgainapi/api/Report/DownloadReportByFileName?fileName=Nigeria_Grain_and_Feed_Annual_Lagos_Nigeria.pdf
- United States Department of Agriculture. (2023). *World wheat production and trade projections*. USDA.
<https://www.usda.gov/oce/commodity/wasde>
- World Bank. (2021). *Nigeria agricultural sector review*. World Bank.
<https://www.worldbank.org/en/country/nigeria/publication/nigeria-agricultural-sector-review>
- World Bank. (2023). *Food security update: Russia–Ukraine war impact on global food markets*. World Bank.
<https://www.worldbank.org/en/topic/agriculture/brief/food-security-update>

World Grain. (2022, June 6). *Nigeria feels impact of Russia–Ukraine war on wheat supply*.
<https://www.world-grain.com/articles/16912-nigeria-feels-impact-of-russia-ukraine-war>