

Food Security in Nigeria: Challenges and Threats

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Abstract

Nigeria is currently grappling with a variety of security threats that are undermining its sovereignty. These threats encompass communal and religious conflicts, urban violence, arms smuggling, kidnapping, human trafficking, cybercrime, armed robbery, terrorism, and banditry. Recently, food insecurity and escalating food costs have emerged as new forms of insecurity in Nigeria. This paper employs qualitative methods using secondary sources such as newspapers, internet resources, and existing scholarly works. The findings reveal that rural banditry, clashes between farmers and herdsmen, climate change, and the Russia–Ukraine war are both remote and immediate factors contributing to food insecurity in Nigeria. The paper underscores the implications of food insecurity for achieving Goal 2 of the 2030 Sustainable Development Goals (SDGs). It recommends collaborative efforts across all levels of government to address issues like rural banditry, clashes between farmers and herdsmen, political unrest, and disputes. It also calls for proactive measures to mitigate the effects of climate change and to establish an early warning system to inform farmers. The paper suggests that the Nigerian government should strive to lessen the impact of the Russia–Ukraine war on wheat and fertilizer ingredient imports. It also advocates for an urgent reorientation of herdsmen to adopt modern cattle-rearing methods that are more profitable and healthier.

Introduction

Feeding the world's population, which currently stands at over seven billion, is a significant global challenge (Ayinde, Akinbode & Otekunrin, 2020). In 2019, around 690 million people suffered from hunger due to conflicts, terrorism, lack of human capital, and adverse climate change. Of these, 135 million individuals living in 55 countries and territories experienced severe food insecurity. Africa is home to 73 million of these individuals. Food insecurity is a major problem confronting many African governments. It is driven by factors such as an increase in extreme poverty, high levels of corruption, and frequent conflicts. The global food crisis has also seen a slight uptick due to the destructive activities of terrorists, bandits, and insurgents.

Northern Nigeria, often referred to as the "food basket of Africa," has been adversely affected. The region produces and exports various food products such as onions, peppers, yams, and potatoes. However, farmers have been driven away by terrorists, bandits, and insurgents, leading to abandoned farms (Akinola & Uzodike, 2013). Nigeria has the highest number of extremely poor people globally. Despite this, Nigeria's Global Food Security Index (GFSI) ranking has improved since 2013; in 2019, it ranked 94th out of 113 countries. However, Nigeria continues to grapple with food insecurity issues, particularly in the northeastern and north-central regions, where conflicts/insurgency, kidnapping, armed banditry, livestock rustling, and extreme weather conditions exacerbate the situation.

However, to ensure food security across the states and increase exports, the Nigerian government must intensify efforts to enhance food production and processing activities. According to Oderinde, Akano, Adesina, and Omotayo (2022), Nigeria's food security situation is precarious due to several reasons, including rising energy costs, climate change impacts, and terrorism. These factors influence the cost and accessibility of food in the country. They further explained that rising temperatures, political instability, increasing food prices, and unpredictable energy supply have had concerning effects on the cost, availability, and stability of food sources. For a country with a rapidly growing population like Nigeria, it is crucial to take significant steps to increase food production, mitigate climate change impacts, and improve energy sources. To ensure food security for all its citizens, Nigeria must restructure the essential elements of its food systems and their interconnections.

The activities of terrorists and bandits have severely disrupted social and economic activities in border communities of Nigeria, as well as Cameroon, Niger Republic, and Chad (Olowoselu et al., 2014). This has led to a worsening humanitarian situation in the Lake Chad Basin (Nigeria, Niger, Chad, and Cameroon), with nearly 2.2 million people forcibly displaced in the region (UNHCR, 2016; United Nations, 2015).

It is based on the foregoing that this paper examines the conceptual clarification of food insecurity; impacts of the Ukraine/Russian War on food security in Nigeria; Boko Haram, rural banditry and food insecurity; the effect of Fulani herdsman and farmers' clashes on food insecurity; the hike in food price and food insecurity; violence, politics, and food insecurity in Nigeria; climate change and food insecurity; and food insecurity and Sustainable Development Goals in Nigeria.

Method and materials

The paper employed a qualitative approach. This approach can be used to gather in-depth insights into a problem or generate new ideas for research. It is commonly used in the humanities and social sciences. In this study, the documentary method of data generation was used, and data were obtained from books, journal articles, conference papers, online materials, official documents, and periodicals. The documentary method of data collection allows for a deep understanding of new ideas, and provides an opportunity to have an in-depth study on the variety of security threats that are affecting Nigeria's food security. The documentary study helps to discover knowledge gap(s) in the literature. The data were analysed using a content analytical technique.

Conceptual clarification on food insecurity

Masa and Chowa (2020) note that food insecurity disproportionately impacts adolescents and young adults in Sub-Saharan Africa (SSA). However, research on youth food insecurity in SSA is limited. They further explored the prevalence, associated socioeconomic factors, and the moderating influence of gender on food insecurity among young people. Chronic and acute food shortages are most prevalent in Sub-Saharan Africa due to a shortfall in production and recurring natural and man-made calamities. Drahmeh, Hamid, and Rohana (2019) argue that food insecurity is a significant public health issue worldwide, with malnutrition causing almost 300,000 deaths annually. They identified household food insecurity as the primary risk factor. Over half of all child deaths in Sub-Saharan Africa are attributed, either directly or indirectly, to poor nutritional quality and low food consumption.

Svetlana and Ivanova (2018) identify a fundamental issue that governs human existence: the disparity between plenty of food for some and malnutrition for others. They argue that ensuring food security requires a joint effort involving politics, agriculture, and logistics for delivering goods. Despite numerous UN programs and cooperative efforts to alleviate hunger, only temporary local gains have been achieved. Studies have shown that Nigeria's population has increased significantly from 33 million in 1950 to approximately 192.3 million currently. This remarkable population growth has put tremendous pressure on the land and water resources used by farmers and pastoralists. As a result, transhumance routes have been blocked, grazing ground has been lost to agricultural development, and the greater southward movement of pastoralists has caused friction with local communities (FAO et al., 2019).

Rattan (2007) estimates that the global population has grown from 2–10 million at the onset of settled agriculture, approximately 10–12 millennia ago, to 6.5 billion in 2006. It is projected to stabilize at 10–12 billion by 2100. The majority of this future population growth will occur in developing nations, where a significant portion of the world's population currently grapples with severe resource constraints and food insecurity. This rapid population growth has led to a significant conversion of natural ecosystems to agricultural land uses, particularly between 1700 and 2000. This includes the conversion of savanna, grassland, steppe, forest, and woodland. The area used for grazing land also expanded significantly. Agricultural expansion and intensification through

ploughing, irrigation, and chemical use have exacerbated soil degradation problems, which are estimated to affect 1,966 MHA globally. A large portion of this degradation is caused by water and wind erosion. This has also increased the area of irrigated land to about 280 MHA, or 19% of the total cropland area, using 18,200 km³ of water for evapotranspiration, or 26% of the total terrestrial evapotranspiration.

Despite an increase in global population, agricultural yields saw a dramatic increase in the second half of the 20th century, leading to an increase in global food output per person. However, between 2000 and 2025, the demand for cereals is projected to increase globally at a pace of 1.3% per year. This necessitates an increase in the mean grain yield of these cereals, particularly in emerging nations. Nigeria has been heavily dependent on oil for its foreign exchange earnings and government revenue since the oil boom of the 1970s (Nwozor, Olanrewaju, & Ake, 2019). Prior to this period, Nigeria produced food at a reasonable level of self-sufficiency and was a significant exporter of several cash crops. However, as oil surpassed agriculture in importance, agriculture steadily declined due to negligence by successive governments. As a result, many farms were abandoned, severely affecting the industry.

Nigeria's transition from self-sufficiency in food to dependence, leading to substantial imports to address food shortages, has had negative implications. However, the government is making efforts to reorient the agricultural sector towards enhancing productivity and competitiveness.

Adenle, Azadi, and Manning (2018) concur that sustainable agriculture can mitigate some of the significant challenges faced by African agricultural practices, particularly in sub-Saharan Africa (SSA), where agriculture primarily drives economic growth. This article poses an essential question: Can sustainable agriculture help Africa overcome its food insecurity and poverty? To answer this critical question, we review and evaluate data concerning the benefits and challenges of adopting sustainable agricultural practices in Africa. Achieving the Sustainable Development Goals (SDGs) by 2030 will partly depend on enhancing agricultural sustainability, which is crucial for ensuring food security and reducing poverty. African governments and the international community need to collaborate more effectively to tackle issues such as war, disease, political instability, and disputes. Consequently, institutional changes and agricultural policies at national, regional, and local levels need to be formulated to support household income growth, food security, and poverty alleviation.

The impacts of the Russia–Ukraine war on food security in Nigeria

Nigeria is not immune to the negative effects of the current conflict between Russia and Ukraine on world food security. The United Nations' Food and Agriculture Organisation (FAO) issued a warning that the war would cause an additional 8 to 13 million people to go hungry in 2022–2023. In other words, over the course of a year, they would not get enough food to meet their basic daily energy requirements. Currently, there are more than 800 million undernourished individuals in the world.

Measures to stop the spread of Covid-19 have adversely affected the food and nutrition security of low-income and marginalised households and communities, (Ebata, Nisbett, & Gillespie, 2021). They posit further that the concepts of resilience and political economy are used to analyse how Covid-19 has affected food systems in low- and middle-income nations. Before the Russia–Ukraine war, these two countries provided one-fifth of the world’s exports of maize and 30% of the world’s exports of wheat. Additionally, they produced 80% of the world’s exports of goods made from sunflower seeds. In 2021, Russia was also one of the nations with the highest fertiliser exports.

The FAO (2022) estimates that at least 50 countries buy at least a third of their wheat from Russia and the Ukraine. Unfortunately, the conflict between Russia and Ukraine, which broke out on February 24, 2022, has worsened the world’s already precarious food security status and disrupted daily life throughout the agricultural growing season. Though early output estimates for freshly grown crops in Ukraine were hopeful, the fighting is preventing many farmers from harvesting and exporting their crops.

The escalating hostilities between Russia and Ukraine pose a serious risk to world food security. Increased food insecurity in nations like Nigeria that depend on imports from these countries could result from the disruption of agricultural activities in these regions. Therefore, it is essential that nations and international organisations collaborate in order to reduce these effects and guarantee food security for everyone. Esfandabadi, Ranjbari, and Scagnelli (2022) concur that the ongoing conflict between Ukraine and Russia has had a profound impact on the global food and energy systems. This is primarily due to Russia’s crucial role in supplying natural gas and fertilisers worldwide, as well as the substantial contributions of both Russia and Ukraine in exporting grains and oilseeds to international markets. Consequently, the Russia–Ukraine war conflict has led to a scarcity of crops and grains in the food market.

Hassen and Bilali (2022) note that the ongoing Russia–Ukraine war, characterized by a clash between two prominent agricultural nations, has resulted in a range of adverse socioeconomic consequences that are currently reverberating globally and have the potential to further worsen, particularly in terms of global food security. Should the conflict escalate, the already dire food crisis will intensify, presenting a formidable obstacle for numerous nations, particularly those heavily dependent on food imports.

Huff (1995) states that in February 2022, during the aftermath of the devastating coronavirus pandemic, Russia’s invasion of Ukraine emerged as a highly significant interstate armed conflict, comparable in impact to the Second World War. This conflict had far-reaching consequences for the global economy, particularly in terms of disrupting agricultural-goods and energy supply chains. As a result, it exacerbated existing inflationary pressures, leading to increased poverty, inequality, and food insecurity. Huff (1995) further states that these issues were already at alarming levels due to the pandemic. Consequently, these trends are likely to worsen the underlying causes of conflict and instability, especially in countries heavily reliant on food and energy imports. Moreover, the unprecedented humanitarian crisis and the subsequent need for reconstruction in Ukraine will divert international humanitarian aid and development funding away from other global conflicts and crises. The worsening food insecurity serves as a visible manifestation

of how the combined shocks of the coronavirus pandemic and the war in Ukraine intersect with the ongoing and accelerating climate change emergency.

Nweke, Obi, and Igweike (2022) note the pattern of food inflation in Africa and examine the impact of the Russia–Ukraine war on food inflation in the continent. The study also seeks to determine whether the ongoing war between Russia and Ukraine is likely to instigate social unrest in Africa. A sample of four African countries—namely Nigeria, South Africa, Kenya, and Morocco—was selected. Data were sourced from the Trading Economics database and analyzed using descriptive analysis, trend analysis, mean, and percentage. The results of the study revealed that Nigeria had the highest food inflation rate among the sampled countries, while Morocco had the least food inflation rate. However, both Morocco and Kenya were the most affected by food prices as a result of the war (Nweke, Obi, & Igweike, 2022).

Kappel (2022) observes that the conflict in Ukraine has precipitated a dire situation for economically disadvantaged nations and those reliant on imported goods, consequently exacerbating hunger and poverty in Africa. The continuous rise in food prices has the potential to spark social unrest in Africa. This is because food is a basic necessity of life, and when prices become unaffordable, they can lead to protests, riots, and other forms of social unrest. In conclusion, this study provides valuable insights into the pattern of food inflation in Africa and the impact of the Russia–Ukraine war on food prices across the continent. The findings of the study highlight the need for policymakers to take proactive measures to address the issue of food inflation and ensure that food remains affordable for the masses.

Food insecurity in Nigeria: Looking beyond Russia–Ukraine war

Adeyemo (2023) states that though the war in Ukraine has had a significant impact on global food prices – as the conflict has led to a decline in the supply of major staple foods – it is important to recognize that food and nutrition insecurity is not limited to international conflicts. In Nigeria, the population in conflict zones, particularly in the northwest, has been facing a food insecurity crisis due to ruthless banditry. Factors such as climate change, natural disasters, violence between farmers and herders, kidnappings, and other forms of insecurity have also affected food production and distribution in the country. Despite these challenges, agricultural productivity has been growing, and there have been technological and institutional innovations within the agrifood markets and value chain that have the potential to reduce poverty and food insecurity. One key aspect of the food value chain (FVC) is the reduction of losses and waste. In Nigeria, losses and waste occur in all phases of the FVC, from pre-harvest to consumption activities. To address this issue, there is a need for the development of post-harvest and processing technologies that can add value to agricultural products and minimize losses. However, there are several barriers to the fulfillment of the agrifood value chain's potential in Nigeria, including capacity, governance, infrastructure, and policies conducive to sustainability and growth. By addressing these barriers and implementing innovations in post-harvest and processing technologies, Nigeria can improve food security and reduce waste in the country.

Babatunde and Ajayi (2010) note that the negative correlation between Nigeria's population growth and food crop production highlights the necessity for government assistance and policies to effectively tackle food insecurity and poverty in the country. Unfortunately, Nigeria's agriculture sector lacks value chain initiatives and modern storage facilities, which exacerbate the problem of food losses and waste. The absence of value chain initiatives means that farmers do not have access to information on market demand, pricing, and quality standards, which leads to a glut of produce during peak harvest periods and low prices. Additionally, the lack of modern storage facilities means that farmers are forced to sell their produce immediately after harvest, even if the market is not favorable, leading to further losses. These challenges highlight the urgent need for investment in modern storage facilities and value chain initiatives to improve the efficiency and profitability of Nigeria's agriculture sector.

Boko Haram and rural banditry and food insecurity in Nigeria

George, Adelaja, and Weatherspoon (2020) state that countries that are grappling with conflict, violence, and fragility are home to over 50% of the 815 million individuals who suffer from undernourishment globally. This is largely due to the fact that conflict can have a devastating impact on food security, as it can lead to the destruction of agricultural infrastructure, hinder economic growth, and result in high levels of unemployment. As a result, it is imperative that we address the root causes of conflict and violence in order to ensure that individuals have access to the basic human right of food.

Dunn (2018), in his words, notes that the Boko Haram insurgency in Northeast Nigeria has significantly impacted child health outcomes as a result of the disruption of social services and the rise in food insecurity. In the same manner, Kah (2017), in his analysis, delves into the persistent issue of food insecurity in certain regions of Nigeria and Cameroon, which has been exacerbated by the presence of the Boko Haram insurgency. Since its emergence in 2009, this insurgency has not only devastated entire communities but also resulted in the destruction of food crops, the loss of livestock, and the displacement of farmers to protective camps. Consequently, many individuals now heavily rely on food assistance provided by international organizations. While Nigeria and neighboring countries strive to contain the insurgents, they have inadvertently created or worsened a larger problem: food insecurity, which has far-reaching consequences extending beyond national boundaries. As a result of the insurgency, local markets have been forced to close, leading to a decline in customs duties and further exacerbating the issue. Emmanuelar (2015) agrees that the Boko Haram insurgency plays a substantial role in exacerbating humanitarian crises in Northern Nigeria, with significant implications for human casualties, food insecurity, and the displacement of individuals within the region.

The effect of Fulani Herdsmen and Farmer's clashes on food insecurity in Nigeria

The consistent clashes between Fulani herdsmen and farmers in Nigeria have profound effects on the nation's food security. Ajibefun (2018) highlights that the threats posed by Fulani herdsmen have severe repercussions on socioeconomic development, not only in the affected states, but across Nigeria as a whole. Incidents of property destruction and rape have led to a decline in economic and social prosperity in states where these conflicts are prevalent. Onwunyi and Anekwe (2020) agree that the agricultural output in Benue State has been significantly impacted by these clashes. The continuous violent conflicts, largely due to population growth and disputes over scarce resources such as grazing and farming lands, have instilled fear in many farmers, causing them to abandon farming.

Justin-Ugo and Unufe (2019) note that the conflict between farmers and herdsmen has extended to other regions of the country beyond the Northeast. The government has implemented several strategies and laws, such as the Cattle Colonies (CC) and the Rural Grazing Area (RUGA), to try to resolve this conflict. However, these measures have been met with resistance from both farmers and herdsmen. Therefore, it is crucial for the Nigerian state to re-evaluate its current legislation regarding land access for both community members and outsiders. The country's population boom, which remains a significant concern, also necessitates the development of a practical policy framework. These conflicts between farmers and herdsmen, due to their impact on capital and human resource production, have drawn attention from both the government and the private sector.

Hike in food price and food insecurity in Nigeria

Ochuba and Cookey (2020) observe that high food prices are often associated with food insecurity, as they hinder people's ability to access an adequate food supply. This goes against one of the fundamental principles of food security, which is ensuring that food is accessible to all individuals. In order to achieve food security, which is a key objective in the United Nations' Millennium Development Goals (MDGs) and Sustainable Development Goals (SDGs), it is crucial that food be economically accessible to everyone. According to data released by the National Bureau of Statistics (NBS) in March 2020, Bayelsa State in Nigeria has been facing the challenge of exorbitant food prices. The data revealed that out of the 43 food items reviewed, Bayelsa State had the highest cost for 15 of them. This makes it the state with the highest food prices in the entire federation.

Empirical evidence from Babalola and Isitor (2014) suggests that a significant proportion, specifically 60%, of the household income in Lagos State, Nigeria, is allocated towards food expenditures. This finding is indicative of low income levels and elevated food costs, thereby underscoring the pressing need for policy interventions aimed at mitigating urban food prices and addressing food insecurity.

Goni, Mohammed, Sing, and Bila (2014) in their work note that the analysis of the food insecurity situation in the Northern part of Borno State revealed that a significant proportion of households, approximately 64.5%, did not meet the minimum calorie requirement and were

thus classified as food insecure. Moreover, the households in the area were found to produce food that lasted for only about 5.6 months on average after harvest, and a staggering 91.1% of households did not produce food that lasted for 12 months after harvest. The study also examined the animal protein intake of households and found that they were only able to meet 25.86% of their daily per adult equivalent animal protein requirement. Furthermore, the mean food expenditures as a percentage of total income of the households indicated that approximately 78.47% of their daily per adult equivalent income was spent on food. These households are highly vulnerable to future food insecurity, particularly in the event of food price increases. High food prices reduce real income and exacerbate the prevalence of food insecurity and malnutrition among poor households by reducing the quality and quantity of food consumed. Therefore, it is crucial to address the underlying causes of food insecurity and develop sustainable solutions to ensure food security for all households in the area (Goni, Mohammed, Sing, & Bila, 2014).

Charles, Josephine, Ngozi, Chidimma, and Charles (2017) opine that Nigeria, despite its substantial population and abundant oil resources, continues to maintain a predominantly rural agrarian economy. The prevalence of food insecurity within the country is alarmingly high, with approximately seventy percent of the population subsisting on less than one hundred naira, N100 (equivalent to US\$0.70) per day. Charles et al. (2017) further state that the determinants contributing to this state of food insecurity within the region are multifaceted. First, there exists a weak supply side, characterized by inadequate production and distribution of food, which fails to meet the escalating demand resulting from population growth. Additionally, rural poverty exacerbates the situation, as impoverished communities lack the financial means to access sufficient food resources. The scarcity of farmland further compounds the issue, limiting agricultural productivity and impeding the ability to meet the nutritional needs of the population.

Violence, politics, and food insecurity in Nigeria

Allen (2020) states that the issue of food security in Nigeria is greatly influenced by the presence of violence and politics, particularly in relation to the country's oil industry, cult groups, conflicts between herdsmen and farmers, and the Boko Haram insurgency. This analysis aims to explore the impact of politics and violence on the increasing rate of food insecurity in certain parts of Nigeria. When individuals in villages are forced to flee from the violence perpetrated by cult groups, clashes between herdsmen and farmers, and the terror of Boko Haram, the availability and affordability of food are significantly affected. It is crucial to hold those responsible for this violence accountable for the consequences it has on the food supply. Furthermore, the connection between oil-related violence and food insecurity is worth considering. The oil industry has caused significant pollution, leading to a reduction in cultivable land and fishing opportunities in the Niger Delta. This, in turn, has a direct impact on the availability of food. By analyzing both secondary and primary data, this chapter argues that a complex web of illegal political relationships and considerations, often involving non-state actors and criminal armed groups, is rapidly diminishing the labor force in peasant agriculture. As a result, the availability and affordability

of food are increasingly threatened. The intertwining issues of violence and politics have a profound effect on food security in Nigeria. The displacement caused by various forms of violence, coupled with the negative consequences of the oil industry, has led to a significant reduction in the labor force involved in agriculture. This, in turn, poses a threat to the availability and affordability of food in the country.

Climate change and food insecurity in Nigeria

Sub-Saharan Africa (SSA) had an increase in food insecurity in 2022, according to the World Food Programme (WFP). It is anticipated that at least 123 million people, or 12 percent of SSA's population, were acutely food insecure in 2022, suffering from high malnutrition and unable to achieve basic food consumption demands. Food insecurity is predicted to get worse with climate change, which might also undo recent advancements in development. SSA's health and educational outcomes have improved for decades, but rising food insecurity could have a severe impact on children's nutrition and educational success.

The likelihood and intensity of violent conflict are both made more likely by the negative effects of climate change, according to growing evidence. However, local social, political, and economic circumstances shape how these effects specifically affect violent conflict. While not the main driver of violence and conflict, Mobjork, Krampe, and Tarif (2020) state that climate change can have both direct and indirect effects on local, national, and even regional security. Small-scale local conflicts between farmers and herdsmen in Nigeria have grown into organised terrorism among migratory herders. These armed herders target farming communities in Nigeria's Middle Belt region with increasingly sophisticated small arms, causing substantial internal displacement, the loss of local livelihoods, disruption of food production, and food insecurity.

Climate change poses a severe threat to human security and poverty in Africa, according to Kumssa and Jones (2010). In Africa, where the majority of livelihoods depend on climatically dependent ecosystems and resources, the effects of climate change are expected to be disproportionate and severe. Additionally, Africa lacks the ability to adjust to and manage the negative effects of climate change. According to Senakpon, Dedehouanou, and McPeak (2020), climate change will make extreme weather occurrences more frequent and more severe. Such climate-related calamities will present substantial security challenges and points of vulnerability in the future, whether or not they fuel conflict.

Africa is regarded as one of the continents most vulnerable to climate change because of its reliance on rain-fed agriculture and its poor adaptive capacity. This vulnerability is not evenly dispersed. The historical occurrence of climate-related hazards, population density, family and community resilience, governance, and political violence are only a few of the elements that contribute to Africa's vulnerability. The Democratic Republic of the Congo, Guinea, Sierra Leone, Somalia, and South Sudan are among the African nations most vulnerable to the security effects of climate change. Extreme climate change is becoming a greater hazard to human welfare worldwide, according to Pickson and Boateng (2022). It is specifically argued that extreme floods,

combined with the looming prospect of drought, can explain differences in food security between nations. Given the ongoing disputes and lingering questions concerning the specific effects of climate change on food security, it is still unclear whether global hunger and food insecurity are being significantly worsened by climate change. Climate change is having a negative impact on food security, according to Dasgupta and Robinson (2022). However, rather than focusing on current issues, the majority of research concentrates on potential future ramifications, as well as on connections to food production or productivity rather than food security itself. In contrast, they investigate the extent to which climate change can plausibly be held responsible for the recent changes in food insecurity.

Food insecurity and sustainable development goals in Nigeria

In order to accomplish Goal 2 of the 2030 Sustainable Development Goals (SDGs), which aims to “end hunger, ensure food security, improve nutrition, and promote sustainable agriculture,” Osabohien, Adeleye, and De Alwis (2020) investigate the effect of agro-financing on food production in Nigeria. Increased agro-funding at low interest rates, according to their predictions, would entice farmers to buy high-yield seedlings, machinery, and other farm tools, as well as organic inputs that boost total agricultural productivity and improve food production. Additionally, they recommend that the agrarian industry receive greater capital, with less stringent credit requirements, and that more fertile land be set aside for farming.

One of the world’s regions with the fastest rates of urbanisation is Sub-Saharan Africa. Only eight years remain until the achievement of the Sustainable Development Goals (SDGs) of eradicating hunger, food insecurity, and all kinds of malnutrition, according to FAO et al. (2022). The “new normal” of frequent and recurrent droughts, floods, cyclones, rising temperatures, and rising sea levels will make it challenging to attain the 2030 UN Sustainable Development Goal 2 (SDG2) on food security.

According to a paper by John, Trudell, Burnet, and Ziegler (2021), 676.1 million people in Africa, or 52.5% of the continent’s population, faced moderate to severe food insecurity in 2018. As Africa is impacted by war, climate change, and economic downturns, this extraordinarily high incidence continues to rise. When Sustainable Development Goal 2.1 was introduced, aiming to end hunger and ensure access to enough food by 2030, especially for vulnerable groups, food insecurity became a global issue. Food insecurity may have a negative impact on mental health, a stigmatised area of medicine that is frequently inaccessible in Africa.

The Sustainable Development Goals (SDGs) are a group of 17 global objectives that, by 2030, seek to eradicate poverty, safeguard the environment, and guarantee peace and prosperity for all. All parties, notably governments, must cooperate closely and cooperatively to accomplish these goals. The SDGs can be advanced through governments adopting policies, allocating resources, and implementing programmes. Governments do, however, encounter a variety of difficulties and limitations that may impede their development and effectiveness. Therefore, it is crucial for governments to implement policies and solutions that are effective in assisting them in overcoming

these obstacles and achieving the SDGs. Several of these strategies include: strengthening partnerships, resource mobilisation, technology transfer and capacity building, development assistance commitments, inclusive partnerships, matching grants, monitoring and evaluation.

Conclusion

This study has comprehensively investigated the multifaceted dimensions of food insecurity in Nigeria, underscoring its profound and far-reaching consequences. The findings reveal that food insecurity exacerbates poverty, hinders economic development, and imperils mental health, productivity, and national stability. The study highlights the devastating impact of food insecurity on Nigeria's population, characterized by reduced workforce participation, diminished productivity, and impaired physical and cognitive abilities. The root causes of food insecurity, including insurgencies, terrorist operations, climate change, and global conflicts, necessitate urgent attention and collective action. To mitigate the debilitating effects of food insecurity and achieve the Sustainable Development Goals in Nigeria, it is crucial to prioritize food security, support vulnerable populations, and foster a sustainable food system that ensures economic growth, social stability, and human well-being.

Recommendations

Nigeria is facing multiple issues such as rural banditry, farmers-herders clashes, political unrest, and disputes. These issues have negative impacts on the security, stability, and development of the country. Therefore, it is recommended that all levels of government work together to combat these issues and create a peaceful and prosperous Nigeria. Some of the recommendations are:

- a) **Mitigate the effects of climate change.** Climate change is one of the main causes of farmers-herders clashes, as it reduces the availability of land and water resources for both groups. The government should take concrete steps to adapt to and mitigate the effects of climate change, such as implementing sustainable land management practices, promoting renewable energy sources, and creating early warning signals and responses to educate farmers and herders on how to cope with climate shocks.
- b) **Reduce the impact of the Russia–Ukraine war..** The ongoing war between Russia and Ukraine has disrupted the global supply chain of wheat and fertilizer ingredients, which are essential for Nigeria's food security and agricultural sector. The government should explore ways to reduce its dependence on these imports, such as diversifying its sources of wheat and fertilizer ingredients, increasing its domestic production capacity, and supporting local farmers with subsidies and incentives.
- c) **Reorient Fulani herdsmen towards modern methods of rearing cows.** The traditional nomadic lifestyle of Fulani herdsmen is becoming increasingly incompatible with the modern demands of the society and the environment. The government should urge Fulani herdsmen to adopt modern methods of rearing cows that are more profitable and healthy,

such as ranching, feedlotting, or dairy farming. The government should also provide them with adequate support and training to facilitate their transition.

- d) **Ensure that governments are responsible for their promises to reach the SDGs.** This means tracking and assessing actions, updating on achievements and difficulties, and gaining insights from what works and what does not. Governments should also assist each other in reaching the SDGs, promoting collaboration and openness with various actors. Tools like Voluntary National Reviews (VNRs) enable governments to exchange experiences and obtain feedback. However, effective responsibility depends on a solid monitoring system and a readiness to share data honestly.
- e) **Boost agricultural research and development.** This is essential to tackle food security and nutrition issues, especially in the face of climate change, population growth, land deterioration, and water shortage. This includes developing technologies like genetic engineering and drought-resistant crops, as well as providing support to farmers through extension services, training, inputs, and credit. For example, Nigeria's adoption of the NERICA rice variety has considerably increased rice production. However, such boosts must consider ethical and environmental concerns and require sufficient funding and infrastructure for research institutions.

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