

[https://doi.org/10.52326/jss.utm.2025.8\(1\).01](https://doi.org/10.52326/jss.utm.2025.8(1).01)

UDC 339.97:664(6)



## POLITICAL ECONOMY OF FOOD SYSTEMS: AFRICA AND THE RUSSIA-UKRAINE WAR

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Received: 12. 28. 2024

Accepted: 02. 14. 2025

**Abstract.** This article examines the connection between political developments, economic structures, and food systems in Africa, focusing on the Russia-Ukraine war. The article explores how the prevailing political economy influences food production, distribution, and consumption, identifies the conduits through which the war impacted the food system value chain, and proposes how national and local governments can build resilient food systems capable of meeting the population's food needs amidst crises. The findings show that the war affected Africa's food system mainly by disrupting the supply chain of commodities that Africa used to develop and sustain its food system. The war disrupted inputs, energy, and food products from Russia and Ukraine to African countries that depend on these countries for these commodities. The article also proposes response mechanisms to the impacts of the war and how African countries can navigate future disruptions and build resilient food systems capable of meeting the population's food needs. The article could be exciting for politicians and policymakers working on food security, food sovereignty, and diplomatic issues.

**Keywords:** *Africa, agriculture, food systems, Russia and Ukraine war.*

**Rezumat.** Articolul examinează legătura dintre evoluțiile politice, structurile economice și sistemele alimentare din Africa, concentrându-se pe războiul Rusia-Ucraina. Articolul explorează modul în care economia politică dominantă influențează producția, distribuția și consumul de alimente, identifică canalele prin care războiul a afectat lanțul valoric al sistemului alimentar și propune modul în care guvernele naționale și locale pot construi sisteme alimentare rezistente, capabile să satisfacă nevoile alimentare ale populației în timpul crizelor. Descoperirile arată că războiul a afectat sistemul alimentar al Africii în principal prin perturbarea lanțului de aprovizionare cu mărfuri pe care Africa le-a folosit pentru a-și dezvolta și susține sistemul alimentar. Războiul a perturbat inputurile, energia și produsele alimentare din Rusia și Ucraina către țările africane care depind de aceste țări pentru aceste mărfuri. Articolul propune, de asemenea, mecanisme de răspuns la impactul războiului și modul în care țările africane pot naviga în viitoarele perturbări și pot construi sisteme alimentare rezistente, capabile să satisfacă nevoile alimentare ale populației. Articolul ar putea fi captivant pentru politicienii și factorii de decizie care lucrează la securitatea alimentară, suveranitatea alimentară și problemele diplomatice.

**Cuvinte cheie:** *Africa, agricultură, sisteme alimentare, război dintre Rusia și Ucraina.*

## 1. Introduction

In August 2022, the *Razoni* cargo ship, which carried about 26,000 tonnes of grain, slowly sailed out from the port of Odesa under the United Nations-brokered Black Sea Grain Initiative. The ship became the first to leave Ukraine since the Russia-Ukraine conflict outbreak in February 2022. The war had blocked food transportation from a region that constitutes 30% of the world's grains and the source of 12% of globally traded calories [1]. Before the war, Ukraine supplied 42% of sunflower oil, 18% maize, 14% wheat, and 10% barley to the global food market. Russia also contributed 21% sunflower oil, 16% maize, 9% wheat, and 10% barley [2]. The two warring countries were major exporters of fertilisers, minerals, agricultural products, and energy to other global regions, including Africa [3]. The war demonstrated how food systems are by-products of numerous factors, including agriculture policy, politics, and the broader economy. It highlighted the supremacy of political economy (the interplay between politics and economics) to food systems (intricate networks related to agricultural and food production and consumption) at the international level. This demonstrates the centrality of the political economy in food access and utilisation, yet comprehensive exploratory investigations on the political economy of food systems amidst crises remain scant.

While many studies on food prices and subsidies and how these factors relate to hunger, undernourishment, and food production and consumption exist [4-7], studies that explore the political economy within the context of a crisis are limited. Most previous studies identify household aspects as major determining factors of food security, while community and regional aspects have not received satisfactory attention. This is despite the fact that food access and utilisation are sometimes used as a war weapon, an instrument to punish political opponents and a tool to accrue political capital politicians [8]. This article, therefore, seeks to close this knowledge gap in literature. The concept of political economy is used in this article to generally denote the combined and networking effects of economic and political structures or processes. Karl Marx, one of the leading philosophers on political economy, described it as a combination of political and financial circumstances of a particular location (community, country, region, continent, or even the world), taking into account the location, population, various classes, production patterns, export and import, consumption, and commodity prices, and so forth [9]. In the context of food systems, viewed this way, political economy gives insight into how a particular food system is impacted by the various processes unfolding elsewhere. For Marx [9 p. 41], the approach provides an understanding of the "rich totality of many determinations and relations" and the 'concrete' understanding, which emerges through "iterations between conceptual abstractions and detailed empirical observation..." In a globalised world, food systems are now highly dependent, feeding into and drawing from each other [10]. Smooth functioning depends on the overall harmony of all the systems interacting with each other. Many factors can change a food system. These factors can be through external or internal forces or both and the feedback mechanisms between these interactions.

The article (i) explores the effect of the Russia-Ukraine war on African food systems, (ii) identifies the conduits through which the war impacted the food system value chain, from pre-production and production to storage, processing, and distribution to food consumption within households and other food outlets, and (iii) proposes how national and local governments can build resilient food systems capable of meeting the population's food needs amidst crises. The article provides critical insights to policymakers on understanding food

system opportunities and challenges during a crisis. It draws attention to how a crisis can further slay human lives and complicate possibilities for quick recovery following a crisis. The article also exposes how politicians often manipulate food systems to increase political capital, thus frustrating the realisation of Sustainable Development Goals (SDGs). It also flags the necessary investments that national governments can make to make their food systems independent and more resilient.

This article is organised as follows: after the introduction, the research method for the article is presented. The article then presents food systems as a conceptual framework and reviews the related literature. This is followed by the presentation of findings and their discussion. Lastly, conclusions are drawn from the findings and the discussion.

## 2. Materials and Methods

This article deployed a conceptual research design to explore the effects of the Russo-Ukrainian war on African food systems. This approach was vital because it did not involve conducting practical experiments or gathering new empirical data [11]. The approach is based on observing and analysing existing information on the topic. The key advantages of the approach are that it involves few resources compared to other types of research where practical experimentation is required and saves time and assets. It only utilises the assessment of existing writing [12]. Its disadvantages, however, are that conclusions and recommendations are drawn based on literature instead of empirical investigation [11,13].

The article relied on grey literature (institutional reports, newspaper articles, and blogs) and academic literature (journals, chapters, and books). The articles for analysis were identified in Google Scholar and Scopus databases. These databases were preferred because they did not require any institutional login details. The search words used were 'Russia and Ukraine war', 'Russo-Ukrainian war', 'food security', and 'food system'. In addition to having at least two of the keywords in the title, abstract, or keywords, the articles needed to have the term 'Africa' in the title. It also needed to have been published between March 01, 2022, and September 30, 2024, written in English and downloadable, focusing on food security or food systems and Africa. The initial search yielded 654 articles, of which 379 were immediately excluded because they were published before the conflict began in February 2022. In addition, 72 articles were excluded because they were not in the two databases. Another 27 articles were excluded because they were not in English, and their translation was unavailable.

Furthermore, 37 articles were excluded because they were not downloadable, while another 84 were excluded because they were not in Africa. Lastly, 31 articles were excluded because, although they explored the Russo-Ukrainian war, they did not explore its impact on food security or food systems. Eventually, 24 articles were selected for analysis. These articles are summarised in Table 1.

Table 1

An overview of literature on the Russia-Ukraine war

Articles	Pre-production	Production	Processing/ Packaging/ Storage/ Distribution	Consumption
Antwi-Boateng & Al Nuaimi [14]		√		
Duho et al. [15]	√	√	√	√
Chihwai [16]				

Continuation Table 1

Mhlanga & Ndhlovu [17]	✓			✓
Mhlanga & Ndhlovu [18]		✓		
Ndhlovu & Dube [19]	✓			
WFP [20]		✓		
Aidi [21]		✓	✓	
Mhlanga & Ndhlovu [22]	✓	✓	✓	✓
Berahab [23]	✓		✓	✓
Tinarwo et al. [24]	✓	✓	✓	
Hatab [2]	✓			✓
Zindi [25]	✓			✓
Wudil et al. [26]	✓	✓		✓
One Africa [27]		✓		✓
Papadavid [28]	✓	✓		✓
Mlaba [29]	✓	✓		✓
FEWSNET [30]	✓	✓		
Raga et al. [31]	✓			
Lopes [32]	✓			
Ngepah [33]	✓			
Ndhlovu & Mhlanga [34]	✓			
Hackenesch & Lacher [35]	✓			✓
Wang et al. [36]	✓			✓
Total – 24 articles				

**Note:** ✓ denotes that a particular article (in the row) covers a particular food system component (in the column).

The selected articles were read through to ensure that they focused on food security or food systems in Africa. Latent content analysis, a method whereby meaning is deduced from what is contained in a text(s) – was used to establish how the war has impacted Africa's food system. Latent content analysis provided in-depth insights into how the war is perceived as having impacted Africa's food system. Thematic data analysis was used. The key components of a food system were used: production, processing, transportation, and consumption. The pre-production component was also added due to its prevalence in the article. Most of the selected articles covered more than one component of the food systems and were, therefore, recorded as such in Table 1.

The research method utilised offered key benefits: it is easily replicable, and researchers can utilise the same texts used in the study to verify the conclusions reached. The method was also affordable and did not require any use of special software. In this way, regardless of experience, researchers can easily follow up on the results reported here by going through the methodology deployed.

The use of secondary literature, however, has particular limitations. The inclusion of articles only published in Scopus and Google Scholar and grey literature mainly by international policy organisations could have excluded other relevant publications from other sources. In addition, the choice of search words could have influenced the selection of articles. Furthermore, the Russia-Ukraine war is still unfolding, and new studies currently underway may uncover new facts. The author acknowledges these limitations.

### 3. Food Systems: A Conceptual Framework

The war between Russia and Ukraine has had enormous impacts on food systems, thus significantly touching the nerves of the food security conditions of countries. By definition, food systems include the entire array of actors and their interwoven value-adding actions

engaging in the production, processing, distribution, and consumption of food products produced from agriculture, forestry or fisheries, and food industries, and the broader economic, societal, and natural environments in which they are [37,38]. The first point of production in the value chains is traditionally viewed as farming communities. However, other actors are in the pre-production category, such as input industries that produce fertilisers, pray chemicals, and seeds (even though seeds come from farming itself). The range of actors also involves science, technology, and innovation actors that may seem detached and yet integral to the food system. Food and non-food inputs result from interwoven value chains within food processing industries. Other pertinent food system actors, such as public and private quality and safety control bodies, are connected to these value chains. Every food system is a set of activities contributing to food availability, access, and utilisation (see Figure 1).



**Figure 1.** Food system value chain.

Source: Author.

In addition to the food systems direct actors listed in Figure 1, other actors, which include national and local governments, civil society, non-governmental stakeholders, lawmakers, policymakers, land activists, and/or lobbyists, also influence the food environment through their actions and decisions [39].

For a food system to be regarded as sustainable, it has to deliver food security and nutrition for all in a manner that safeguards the socioeconomic, cultural, and environmental bases of food production for use by future generations [6]. The interface of the components of a particular food system is fundamental to ensuring its sustainability. Exchanges and dynamics between and among the actors in the system generate new properties that may not be located in or explained by a single component or sub-component but are characteristic of the entire system [40]. Just like social, economic, and environmental factors, the prevailing political scenarios also wield much influence on how food system activities unfold, generating multiplier effects. Political conflict is one of the significant causes of food insecurity globally because it is detrimental to food system components [18]. Using the Russia–Ukraine conflict, this article offers insights into how conflicts affect food systems.

#### 4. Literature Review: Food and Nutrition (in)Security in Africa

The literature on the impact of the Russia-Ukraine war on humanity and its activities is increasing [7,41]. Hunger and malnutrition are among the key challenges that Africa faces. These are triggered by numerous factors ranging from war and conflict, leader deficit, climate change, and pandemics, such as COVID-19. The Russia-Ukraine war only arrived to complicate the situation.

The war also has risked the possibility of the global achievement of the fight against poverty and hunger (SDGs 1 and 2). Before the Russia-Ukraine war, hunger was already on

the rise across countries, thus threatening the SDG agenda [7]. The UN [42] also reported that the fight against hunger and food insecurity was already not on track even before COVID-19. The war exacerbated the situation. Africa was identified as among the global regions which experienced severe challenges in eradicating hunger [4,6]. This region had conflicts and insurgencies which severely affected food production, transportation, and utilisation [43]. For instance, in 2017, a war in South Sudan plunged 42% of the country's population into severe food insecurity [44]. Somalia, South Sudan, Chad, and the Democratic Republic of Congo have also recorded very high child undernourishment and under-five mortality rates due to their political instabilities [44]. In Zimbabwe, high food insecurity and stunted food systems have been linked to the historical standoff between the ruling party and leading political groupings, particularly following the short-circuited land redistributions of the early 2000s [45]. In 2021, 18 African countries experienced armed conflicts [46]. In 12 of these, significant deaths were recorded [46]. This was also felt in agriculture and across the entire food system chain. According to Shararah [47] and Kang [48], the instant effects of wars and conflicts on food systems are a drop in overall agricultural production and a destabilisation of the market systems, resulting in general price hikes, food shortages, and subsequent food insecurity and hunger.

The challenges being experienced in Africa's food system are also linked to the region's leadership crisis. According to Duho et al. [15], leadership deficit has retarded efforts against hunger and food security prospects across African countries. This crisis has resulted from weak, misplaced, and disruptive projects, including those that directly affect the agriculture sector. For instance, the adoption of Structural Adjustment Programmes in the 1980s left many African farmers without the support of governments, thus resulting in a significant collapse of agriculture. In Cameroon, the devaluation of the currency in line with SAPs reduced land access by households who traditionally contributed significantly to food production for local consumption [49]. Sahn and Arulpagasam [50] also found that following currency devaluation, land occupied by estates soared from 300000 hectares to 843000 hectares in 1980. In Malawi, land inequality also worsened the anti-poor distribution of rural grains. Before the liberalisation of the market in the 1980s, over 60% of peasant households had satisfactory access to agri-inputs, enabling them to make significant contributions to food production. After liberalisation, however, 20% of markets were reduced as companies shut down as they failed to adjust to the new reforms [51]. In Tanzania, farmers also began to experience challenges related to input access due to sudden high prices following the elimination of the 80% subsidy [52]. The fertiliser prices also increased to levels that many farmers could not afford, particularly smallholder and peasant farmers in Ghana and Kenya. This saw a sharp decline in the use of fertilisers by these farmers.

Similarly, their production levels also plunged. In Senegal, the market liberalisation and the discontinuity of input subsidies in 1980 affected fertiliser distribution, which subsequently affected groundnut production across the country [53]. Between 1980 and 1986, an 88% decline in fertiliser use was reported nationally [49].

Climate change and its associated natural hazards, such as drought, storms, floods, and cyclones, have devastated food and nutrition [54]. Climate change is implicated as having severely compromised food security and African livelihoods [55]. Chronic declines in agricultural productivity and water resources are pervasive in Africa. Numerous factors account for the region's susceptibility to natural hazards: the agriculture-dependent structure of the economy, high poverty rates, credit constraints, financial exclusion, adaptive

technology shortages, and rain-fed farming. It is predicted that climate change could severely disrupt food systems and decrease crop yields by 50%, thus causing about 20% of Sub-Saharan Africa (SSA) children to be undernourished by 2050 [56].

One of the indicators of a wounded food system on the continent is the frequency of undernourishment - understood as the percentage of the population whose usual food consumption is inadequate to provide the dietary energy levels essential for maintaining a standard and active life [57]. It is important to mention that most undernourished people in Africa are found in SSA. Table 2 shows the number of people undernourished in different African regions from 2005 to 2019. The data show that only North Africa has experienced a decline, while the rest of the sub-regions have recorded increases in undernourishment. Undernourishment is projected to rise to 25.7% in 2030 from 19.1% in 2019 [54].

Table 2

**Undernourishment prevalence in Africa**

Year	2005	2010	2015	2016	2017	2018	2019	2030
World	12.6	9.6	8.9	8.8	8.7	8.9	8.9	9.8
Africa	20.0	18.9	18.3	18.5	18.6	18.6	19.1	25.7
SSA	23.9	21.3	21.2	21.4	21.4	21.4	22.0	29.4
Eastern	32.2	28.9	26.2	27.1	26.8	26.7	26.2	33.6
Central	35.5	30.4	28.2	28.8	28.7	29.0	29.8	38.0
Southern	4.9	5.4	7.0	8.0	7.0	7.9	8.4	14.6
Western	13.8	12.1	14.3	14.2	14.6	14.3	15.2	23.0
Northern	9.8	8.8	6.2	6.3	6.6	6.3	6.5	7.4

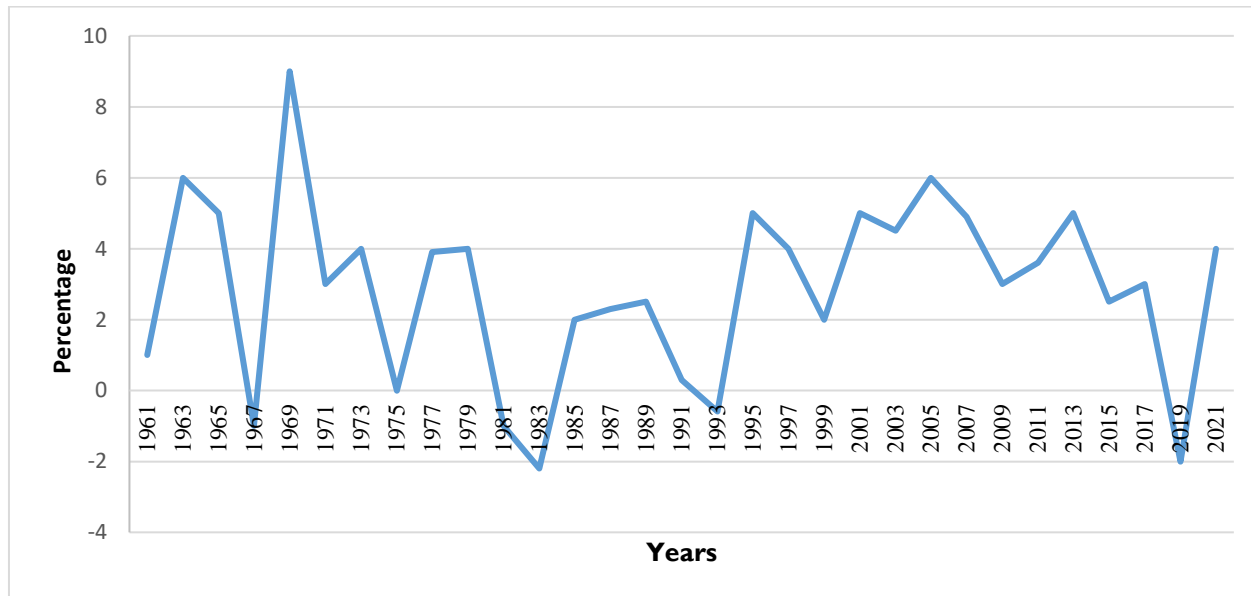
Source: Author, Developed from FAO [34]

\* Values projected up to 2030

The reviewed literature concurs that economic expression is the most effective way of addressing food system challenges [4,46]. The economic growth of any country is closely tied to the favourable functioning of its political system [45]. Therefore, dealing with hunger and food insecurity is also tied to the welfare of the broader economy, as supported by favourable politics.

According to Harrigan [58], the best strategy to fight hunger and poverty and ensure food system resilience is to increase economic growth through favourable democratic political systems. Poverty is well dealt with through targeted policies at national and regional levels. Thus, efforts to improve the functioning and resilience of a food system should target eliminating poverty through effective policies. A study of 14 countries in the 1990s established that although poverty declined in 11 countries with high economic growth, it increased in 3 countries with low or stagnant economic growth [26]. Chambo [59] found that a 1% increase in per capita income ignited a 1.7% reduction in poverty rates. However, SSA has had the world's most volatile economic growth rate, with the average annual growth rate of per capita real GDP from the mid-1980s to 1994 mainly negative and recovered to a mere 1.2% between 1995 and 1997 [26].

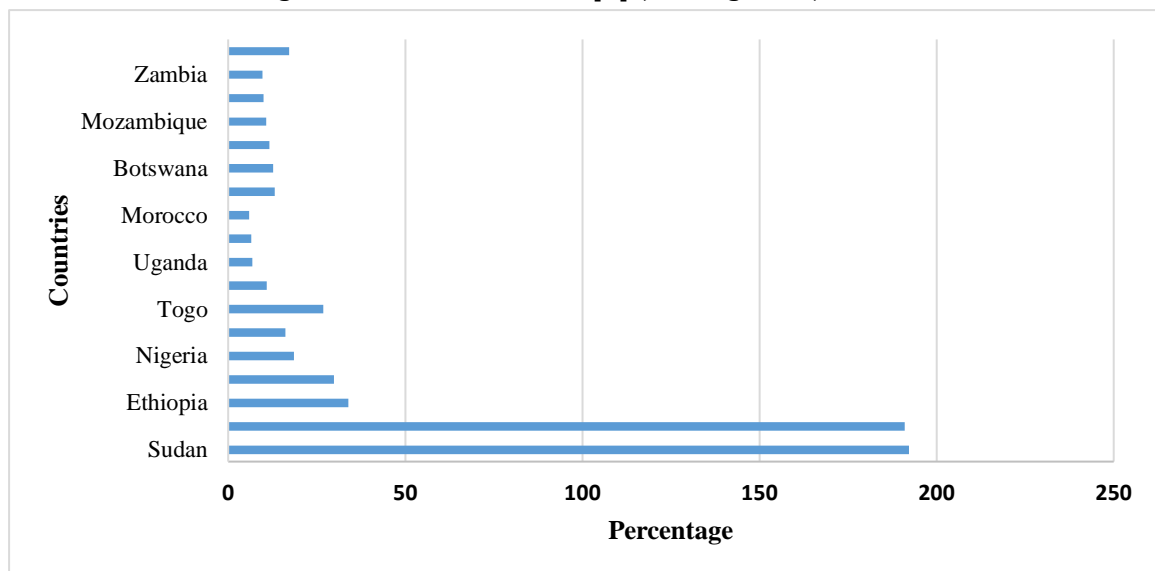
This has been partly due to political instability and political leadership's adoption of poor and misplaced policies [60]. Figure 2 summarises the economic journey of SSA from 1961 to 2021. Adam et al. [61] argue that due to internal and external shocks, SSA could take longer to recuperate economically and socially. Poverty and food challenges persist despite recent improvements in economic growth rates.



**Figure 2.** SSA economic growth over time.

Source: Author, Developed from various sources.

Several empirical studies found that price shocks have been the primary source of Africa's food system challenges. For instance, Wossen et al. [62] observed that child malnutrition increased when Mozambique increased food prices. A 50% rise in food prices ignited a 5.8% increase in poverty. This consequently affected other components of the local food system. Using data gathered from over 50000 individuals in 18 SSA countries, Verpoorten et al. [63] studied how the worldwide food price crisis of 2005–2008 and the associated response mechanisms impacted household food security. They found that urban dwellers were the most affected, while rural folks seemed to fare smoothly. In particular, they found that the severity of food insecurity decreased by 9.2% in rural areas but increased by 7.8% in urban areas between 2005 and 2008. In Ethiopia, Matz et al. [64] found that the unstable price of teff resulted in people's destitution, causing them to reduce their daily meals. The urban poor resorted to skipping or missing meals. Lately, food prices have increased by double digits on average throughout SSA countries, with politically unstable such as Sudan and Zimbabwe recording over 180% increases [8] (see Figure 3).



**Figure 3.** Average food inflation (March to August 2022).

Source: Author, Developed from various sources.



Between June and August of 2022, soaring food prices because of the war were the significant causes of the food insecurity of over 38 million people in SSA [8,15]. The below-average agricultural output in the 2021/22 season and disrupted trade flows triggered high food prices in Africa, particularly for staple products [8]. Of the more than 30 nations with food costs listed by FAO, a significant number was in Africa: Burundi, the Central African Republic, Chad, Côte d'Ivoire, the Democratic Republic of Congo, Eritrea, Ethiopia, Ghana, Guinea-Bissau, Kenya, Lesotho, and Liberia [15].

Agricultural productivity, particularly for crops, has been underperforming in SSA since the mid-1970s compared to other global regions [65]. Structural Adjustment Programmes from the early 1980s to the early 1990s only worsened the situation [10]. Since then, most SSA have been relying on food imports. SSA countries spent around US\$43 billion on food imports in 2019, possibly due to decades of underinvestment and neglected public infrastructure [48,66], rapid population growth, climate change, underinvestment, and other challenges, including COVID-19. One key challenge closely related to this study and requiring expansion is the impact of conflict on Africa's food system.

Marx et al. [67] found that wars and insurgencies were the disruption causes to Africa's food system. von Grebmer et al. [68] approximated that US\$52 billion or 75% of public aid meant agricultural development was lost to conflicts between 1980 and 1997 in SSA. Boliko [69] also found that about 79% of stunted children were found in regions currently in political instability. The UN also reported that over 34 million people in SSA were either undergoing or recovering from armed conflict and required food and other humanitarian assistance [70].

In Nigeria, Ghana, and Mali, conflicts between herders and farmers have significantly hampered food system operations [71]. Gangsters, terrorists, and criminals have forced significant proportions of farmers to abandon fields and flee to safety. For instance, in northeast Nigeria, Boko Haram and the Islamic State have forced approximately 2.5 million peasant farmers to flee their homes. Agunyai and Ojakorotu [72] estimated that over US\$120 billion in agricultural output was lost due to conflicts and wars between 2016 and 2017 in Africa. In Nigeria and Cameroon, border violence has significantly disrupted food transportation and even production within borderland communities. The Ambazonian separatist grouping has forced many Cameroonians to migrate to Nigeria. In contrast, the Boko Haram rebellion has displaced people, including a significant number of farmers, towards Cameroon, Chad, and Niger [73]. Wudil et al. [26] estimate that nearly 4.3 million people in Cameroon need urgent food assistance due to conflicts in the sub-region.

The literature shows that food systems are not adversely impacted by wars and conflict within their immediate location but also those far off [46,48,70]. Therefore, the interconnectedness of countries and regions following the globalisation wave has introduced new challenges that were not previously imagined. In showcasing how food systems are affected by developments that unfold elsewhere, this article brings the Russia-Ukraine war into perspective. The literature on these issues is currently unfolding. The article, therefore, contributes to ongoing debates.

## **5. Results**

This article's findings show that the ongoing Russia-Ukraine war has significantly affected most African countries' food systems since February 24, 2022. The impact of the war is felt through spikes in the prices of energy, food, and agricultural inputs caused by supply chain disruptions. At the time of writing, the war was still ongoing despite international de-

escalation efforts. The findings show that the war impacts Africa's food systems by affecting its components: pre-production, production, processing/packaging/storage/distribution, and consumption.

### 5.1. Pre-production

More than any other components of Africa's food systems, the Russia-Ukraine war significantly changed the pre-production component that forms the basis of food production. The diverse inputs (seeds, agrochemicals, fertilisers, and farm equipment) used in agriculture are sourced from actors within this stage of the food system value chain [15, 19]. The destruction of infrastructure in Ukraine (roads, ports, electricity grids, railways networks, factories, and communication networks) [23] and the shutting down of commercial shipping through Odesa and other ports in the Black Sea generated challenges for countries which receive commodities through such ports [24]. The shutting down of ports and the international sanctions executed on Russia have disrupted commodity flows between Russia and the world, including agricultural inputs that are basic to African agriculture [34]. Trade restrictions, airspace closure, contractor uncertainty and anxieties over security also drove up commodity transportation costs [2,26].

With most African countries relying on both Russia and Ukraine for agricultural inputs [25, 28], disruptions in supply chains adversely impacted planting cycles in the 2022-2023 but also the 2023-2024 season [31]. The rising costs of urea, ammonia, and phosphates soon cascaded into higher fertiliser costs [26]. After an 80% increase in 2021, the war added 30% by the beginning of May 2022 [32]. In Mozambique and South Africa, Ngepah [33] found that food insecurity was generated through the war's impact on agricultural inputs imports (e.g., fertiliser, fuel), vital for food production and its subsequent distribution. Before the war, in 2020, Nigeria imported fertiliser at the value of US\$84.03 million from Russia, Ghana (\$38.65 million), Côte d'Ivoire (\$32.47 million), South Africa (\$57.8 million), Angola (\$2.72 million), Zimbabwe (\$8.545 million), Tanzania (\$25.58 million), and Uganda (\$10 million) [15]. Hackenesch and Lacher [35] observed that by disrupting the commodity supply, the Russo-Ukrainian war exposed African countries' vulnerability to the political economy of the global capitalist system by affecting agricultural inputs and food commodities, particularly grains.

The war has also disrupted energy supplies to Africa. Energy is required for the smooth operation of diverse agricultural activities. Examples of energy use in agricultural production include fuel for agricultural equipment (tractors, trucks, water pumps, and many others) and production facilities, and other downstream activities, such as cooling, processing, transporting, and distributing food products [2,25]. Energy shortages have seen African countries scrambling for cheaper and dirtier fuels that will eventually damage equipment [36]. Only 11 countries are large oil and gas exporters, while the rest are net importers. With the ongoing conflict, higher energy prices can boost these countries while significantly affecting the rest of the energy-importing countries [15]. Before the war, energy prices were already rising due to many factors, such as COVID-19 and lower energy supplies. However, the prices are stable and within the US\$80 and US\$95 price range. After the invasion, oil prices topped USD\$100 a barrel [35]. Because of Russia's large oil export shares, the war quickly ignited energy supply shocks and a continuous upsurge in energy prices [21]. These energy spikes compromised the capacity of African farmers to access fuel, considering the poor economies of their countries [18]. Most African countries preside over poor economies, largely agrarian, and with less determination towards industrialisation. Therefore, with the

competition for energy supplies, most of these countries are being hit hard by the volatility in oil prices. Countries such as South Africa, Namibia, Zambia, and Zimbabwe were already battling energy crisis before the war. The spikes in energy prices following the war have, thus, significantly slowed down manufacturing activities as high energy prices affect productive economic sectors as power crises continue [17]. Therefore, the war significantly disrupted the input base for African agriculture, undermining the entire food system.

## **5.2. Production**

The Russia-Ukraine war is implicated in causing higher production costs for African farmers [14] and lower household incomes [28]. Russia is the major fertiliser supplier, which many African countries use to increase farm productivity [15,26]. Cuts in supplies triggered high prices of fertilisers, making it tough for African farmers, most of whom are smallholder and peasant farmers, to acquire fertilisers at affordable prices, thus directly adversely impacting productivity [17]. Lower productivity by farmers also negatively impacted the performance of other actors across the food system chain [20]. According to the WFP [20], about 4.05 million Zimbabwean people were food insecure in February 2023, partly due to the war, which stifled agricultural production. The 2022-2023 season in many African countries was also adversely affected due to input challenges, especially fertiliser [24]. The war triggered a shortage of agricultural machinery and equipment needed in countries like [16,21,24].

Overall, the findings illustrate that the war affected the African food system by undermining the agricultural input base. With no access to adequate inputs, African food production, which is dominated by smallholder peasant producers, struggled to meet the food needs of the foods of a region whose population is increasing.

## **5.3. Processing/Packaging/Storage/Distribution**

The African food system's processing, packaging, storage and distribution components are discussed only in passing in the identified articles [16,21,24]. This component of the food system is discussed mainly alongside other components, particularly the pre-production and consumption components. However, the few existing articles on this component allude to the impact on transportation due to fuel shortages [15,23].

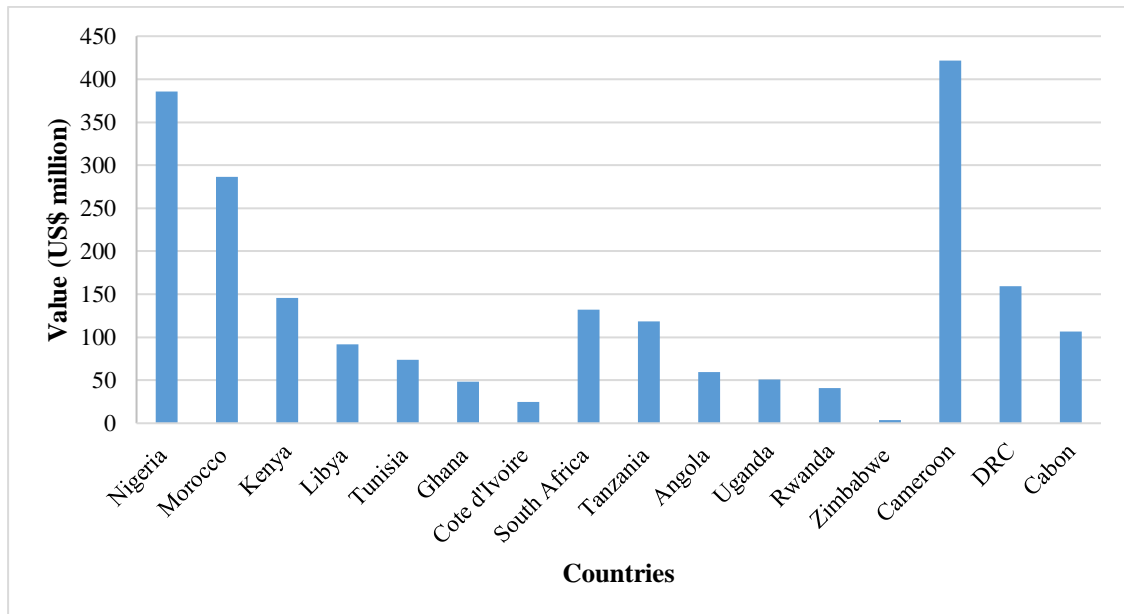
Overall, only a limited number of the selected articles focused on the impact of the war on processing, packaging, storage and distribution. This possibly highlights the continent's limited participation in the value addition of agricultural products.

## **5.4. Consumption**

The debates on the war's impact on the food system's consumption component abound. Virtually all the identified articles extensively commented on the war's impact on Africa's consumption. This possibly confirms the region as mainly a consumer. The war has heavily hit the continent, from energy and food to agricultural equipment [15, 23]. The war has underscored Africa's dependency on other regions for its basic food products [74]. Africa emerged as a net food importer [15], exacerbating the food insecurity condition of countries on the continent [25]. The war heightened vacillations in agricultural products and food prices due to shortages in essential commodities [26]. The World Bank [75] confirms that due to the war, maize and wheat prices increased by 27% and 13%, respectively, in January 2023 compared to January 2021. This ignited food inflation, mainly in lower-income countries [15].

The impact has been severe in regions which depend on food imports from Russia and/or Ukraine, such as Africa [27], worsening the food poverty of millions of people [76].

Russia and Ukraine export maize, wheat, and barley grains to Africa. Before the war, the two countries collectively supplied wheat worth US\$4.8 billion to Africa [76]. The two countries also have significant amounts of maize and sunflower oil in Africa [29]. From Ukraine, Libya imported US\$264.66 worth of cereals in 2020; US\$346.99 million in Tunisia; US\$9.43 million in Kenya; US\$17.79 million in Uganda; US\$9.38 million in Somalia; and US\$264.66 million in Sudan [23]. Figure 4 summarises the value of cereal imports by African countries from Russia.



**Figure 4.** Cereal imports from Russia by African countries.

Source: Author: Adapted from various sources.

Southern Africa imported about 80% of its wheat from the two countries [29,77]. In East Africa, Burundi, Uganda, Rwanda, Tanzania, Somalia, and Sudan also imported about 50% of their wheat from the two countries [1]. Sudan imported as high as 75% of its wheat from the two countries. Other countries with high percentages of wheat imports from the two countries included South Africa (80%), Congo-Brazzaville (69%), and Senegal (66%) [2]. As soon as the war began, South Africa, Kenya, Uganda, Zimbabwe, Mozambique, and Cameroon recorded high price hikes in wheat and other food products as their wheat was mainly imported from the Black Sea region [29]. In Zimbabwe, for instance, the basket of basic food items rose by an average of 7% in US\$ from March to September 2022. The staple maize meal increased by an average of 14%, while vegetable oil prices rose from US\$2.07 per litre in January to US\$3.23 in July [25]. Prices for maize grain in the Masvingo province, Zimbabwe, ranged between US\$7 and US\$8 per 20kg in 2023, up from US\$5 to US\$6 per 20kg in January 2022 before the war [30]. The surge in food prices threatened food access by the poor and vulnerable and further undermined their food security. The Russia-Ukraine war, therefore, touched all the nerves of Africa's food systems, much to the worsening of the situation in a region in which about 333 2 million people were classified as severely food insecure [78] while 20% were undernourished in 2016 [79].

## **6. Discussion**

The disruption of Africa's food systems by the Russia-Ukraine demonstrates the interference of the political economy in local, regional, and global food systems. Findings show how political and economic events unfolding elsewhere easily spill over and become matters of concern. The article confirms early studies that have bemoaned the fatalistic implications of the Russia-Ukraine war on humanity and its activities [41,60]. While the war negatively impacts all global regions, Africa seems to be the most affected due to its high dependence outlook and agrarian nature. Since political independence in the early 1960s and 70s, African scholars have been lamenting the dependency syndrome that characterises countries on the continent [1,77,78]. African countries continue to rely on their former European colonisers to navigate social, political, and economic challenges. This syndrome has significantly compromised Africa's capacity to take bold steps towards realising its development. Thus, despite presiding over some of the best farmlands, the Russia-Ukraine war, in just two remote countries, has been heavily felt on the continent. While other global regions have been affected on the financial and energy fronts by the war, Africa has been affected right on the food front, with the food systems of most countries rendered dysfunctional.

The war demonstrated that most African countries depend not only on Russia and Ukraine for advanced commodities (improved inputs such as seed, spray chemicals, and equipment) but also on simple products such as maize, rice, barley, and wheat. This shows that Africa has failed to develop its agriculture sector due to its vulnerability to political and economic events afar off. However, Africa's dependency is confined not only to food access and production but also to innovation [1,79]. Africa has limited agriculture inputs production centres. Thus, equipment and inputs have to be imported. This has aggravated the continent's vulnerability to the impacts of the ongoing war.

As an agrarian community, the war has affected Africa across the food systems chain, from pre-production to consumption. The limited access to agricultural inputs immediately impacts production, processing, and, thus, consumption of food by households. Most African households rely on agriculture for their livelihoods and incomes [80]. Therefore, events affecting the agriculture sector are easily transmitted to most households. Furthermore, the majority of African food producers are smallholder farmers (around 80%) [81]. Limited financial resources by these farmers require governments to make sustained interventions to ensure access to the necessary inputs and markets. The disruptions of the input supply chain by the war, as well as the international sanctions on Russia, have, thus, complicated input access, significantly negatively impacting this agrarian region.

The impact of the war on Africa's food system is not uniformly felt across countries. Countries have also been affected on different fronts. For instance, South Africa, Egypt, Congo-Brazzaville, Senegal, and Morocco have been the most affected, particularly due to their reliance on the two countries for wheat [2]. Most of the other countries have been affected due to their dependence on inputs, particularly fertiliser and oil. Thus, the more the country is tied to the two countries' political economy, the more its food system has also been impacted.

Overall, the war has significantly impacted Africa's food system due to the importance of the two warring countries in terms of food products provision to Africa. The two countries supply most of the food grains (maize, wheat, and rice), inputs (fertiliser), and energy (fuel) to most African countries. For these reasons, the political and economic developments in the

two countries have easily affected Africa's food system, thus posing a food security challenge. Intervention mechanisms should include sustained diplomatic interventions to encourage Russia and Ukraine to de-escalate the conflict to avoid a global food security crisis. African governments must develop their food systems and ensure resilience to avoid susceptibility. This will enable them to only look to other countries for other products, such as fuel, which they cannot produce locally. In cases where African countries cannot make particular commodities for themselves and are forced to import, they should diversify where they import to avoid being stranded in localised disruptions.

## 7. Conclusions

This article examined the connection between political developments, economic structures, and food systems in Africa, focusing on the Russia and Ukraine wars. The article shows that the war disrupted global supply chains, from which African countries benefited immensely from the food and farming requirements. Most African countries acquire agricultural inputs such as fertilisers, seeds, and spray chemicals from Russia and Ukraine. They also source agricultural equipment from the two countries. In addition, most African countries acquire wheat, maize, sunflower oil, and fuel from Russia and Ukraine. As a result, the disruption in the supply chain in the Black Sea region and the international sanctions placed on Russia by the international community soon touched the nerve of Africa's food system, food pre-production (inputs), production (farming), distribution, and consumption.

The war has showcased how food systems are heavily tied to countries' and regions' political and economic systems. With malnutrition on the rise globally, it is more vital than ever to ensure functional diplomacy to resolve misunderstandings and problems at local levels before their effects can spill over. The war, however, also exposed the dependency syndrome in Africa. As an agrarian community with vast tracks of the best farmlands globally and vast traditional knowledge and expertise in smallholder farming, Africa's food system should have been one of the least affected by the war. External dependency on agriculture basic inputs seed should be one area that needs to be addressed as a matter of agency.

The article recommends that African governments learn from the war and develop their food systems to ensure resilience. This should be achieved through plant seed and fertiliser innovations so that countries can only look to other countries for other products, such as fuel, which they cannot produce locally. African countries should also diversify where they import particular products to avoid being stranded in localised disruptions. Future studies should explore how African governments can work together to strengthen their food systems.

**Acknowledgments:** The author acknowledges the University of Johannesburg for affiliation support.

**Conflicts of Interest:** Author declares no conflict of interest.

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**Citation:** Ndhlovu, E. Political Economy of Food Systems: Africa and the Russia-Ukraine War. *Journal of Social Sciences* 2025, 8 (1), pp. 6-24. [https://doi.org/10.52326/jss.utm.2025.8\(1\).01](https://doi.org/10.52326/jss.utm.2025.8(1).01).

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