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## Review of the problems of the agro-industrial complex of Ukraine in connection with Russia's military aggression

**Abstract.** The war in Ukraine, unleashed by the aggressor state, has resulted in the loss of a significant portion of Ukrainian production, exports, raw materials, and food potential, creating substantial risks of prolonged economic instability, including threats to global food security. The purpose of this study was to analyse the impact of Russian military aggression on Ukraine's agricultural sector, particularly focusing on the economic challenges that have arisen in this field. Additionally, it examined the new circumstances and opportunities for the recovery and adaptation of agricultural producers in the post-war period. To achieve this aim, the following methods were employed: scientific generalisation, analysis and synthesis, forecasting, and scientific extrapolation. The literature review identified publications forming three thematic clusters. Analysis of the first cluster revealed that before the war, Ukraine, alongside Russia, ranked among the top ten global producers and exporters of agricultural products. In this context, foreign researchers expressed concerns regarding the potential threat to global food security. Analysis of the second cluster indicated that during the post-war years, Ukraine's export potential in the agricultural sector was reduced to a manageable level due to the Grain Agreement and the reorientation of agricultural product flows towards land routes on Ukraine's western border. The third cluster highlighted that the stability of Ukraine's agricultural sector will be severely disrupted if the war persists for an extended period. The practical significance of this article lies in its comprehensive analysis of the economic challenges faced by Ukraine's agricultural sector, offering a foundation for devising effective strategies to support and restore this crucial sector during the war and in the post-war era.

**Keywords:** agribusiness; industry; food market; global food security; food market; Google Scholar; ScienceDirect

### INTRODUCTION

The ongoing war between Ukraine and Russia is the largest conflict in Europe since World War II and has numerous geopolitical, economic, infrastructural, environmental, and medical

consequences. Agriculture, as a leading industry in Ukraine, plays a pivotal role in generating export revenue and ensuring food security for other countries. P.M. Makarenko *et al.* (2023), based

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on pre-war data from the State Statistics Service of Ukraine, noted that the competitiveness of Ukraine's agri-food sector constitutes approximately 19% of the country's gross domestic product (GDP) and is the main budget-generating sector of the national economy, contributing about 12% of the country's budget and a third of its commodity structure. The report highlighted that many authors evaluate Ukraine's contribution to the global food system and its security in comparison to Russia's role. Russian and Ukrainian agricultural production significantly exceeds domestic consumption and represents a disproportionately large share of the global market.

As reported by H. Hussein & M. Knol (2023), data from the United States Department of Agriculture (USDA) indicate that in 2020, Russia and Ukraine accounted for approximately 6% of the global maize harvest, 12% of the wheat harvest, and 13% of the barley production. By 2020, Russia and Ukraine collectively accounted for over 70% of global exports of sunflower oil and sunflower meal, approximately 30% of barley exports, 27% of wheat exports, and 17% of rapeseed exports. Given their critical role in the global food supply, the conflict between these two countries has significantly disrupted and posed a substantial threat to the stability of the world's food system. N. Demianenko *et al.* (2023) observed that the global challenges of 2019-2023 have further impacted the global food system. Supply chains were particularly disrupted by Russian aggression, affecting not only African nations but also the broader international community. The authors propose that the creation of startups could serve as a driving force for global Industry 4.0, facilitating the development of a 4.0 supply chain. The human resources of Ukrainian agricultural workers have also been severely impacted. According to the Food and Agriculture Organisation (FAO, 2024), more than 150,000 farmers have been affected by the war and forced to migrate.

In the context of Russian aggression, Ukrainian agricultural producers face a severe shortage of financial resources due to rising production costs. For example, O. Dorosh *et al.* (2024) noted that capital investments in the agricultural sector in 2023 decreased by 26.1% compared to the previous year, amounting to 51.4 billion UAH. The authors propose addressing this issue

through budget financing, effective taxation, a fair pricing policy, preferential loans (particularly for organic farming), grant support, and new subsidy schemes. O. Shubravskaya *et al.* (2024) highlighted the weakness of state support for Ukrainian agriculture, drawing comparisons with Polish farmers. According to their findings, Ukrainian producers receive 35 times less support per hectare than their Polish counterparts. Only 1.4% of income from agricultural production factors received by Ukrainian producers is allocated to subsidies. The authors argued that opportunities for agricultural development within the framework of European integration primarily involve diversifying production and export structures, improving agricultural product processing, accelerating the adoption of resource-efficient innovative production technologies, establishing transit flows, increasing exports to global markets, and expanding the share of Ukrainian agricultural products that comply with the European Union's environmental and climate requirements.

According to estimates by the Kyiv School of Economics, 5.56 billion USD will be required to rebuild Ukraine's agricultural sector over the next 10 years (Neyter *et al.*, 2024). The war between Russia and Ukraine has resulted in the loss of a significant portion of Ukraine's production, export, and food potential, creating a substantial risk of long-term economic instability. At the same time, as noted by T. Bodnarchuk (2022), new challenges have fostered favourable conditions and opportunities for restructuring the national economy towards the development of the high-tech sector and enhancing the informational capabilities of traditional industries. As there were no comprehensive reviews of publications addressing the Ukrainian agro-industrial complex in the context of Russian military aggression, this article aimed to compile such a review, highlighting key clusters of publications. This overview of issues related to the Ukrainian agro-industrial complex, based on a literature search using Google Scholar and ScienceDirect, utilises the keywords "Agro-industrial complex" and "Ukraine" in Google Scholar within the time frame 2018-2024. In ScienceDirect, the term "Agriculture of Ukraine" was used for searches limited to 2023-2024. The tool primarily

searches articles in Elsevier publications, including those indexed in the Scopus database.

In the literature search conducted between 2018 and 2021, two clusters of publications were identified: the production and export potential of Ukraine's agro-industrial complex prior to the onset of Russia's full-scale aggression, and the impact of Russia's full-scale aggression on the production and export potential of Ukraine's agro-industrial complex, including the development and implementation of measures to enhance the resilience of agriculture and facilitate Ukraine's post-war recovery. Methods of scientific generalisation were employed to systematise data on the impact of the war on the agricultural sector. This approach allowed for the identification of the main trends, problems, and challenges facing agriculture, as well as the formation of recommendations for the recovery and development of the sector under crisis conditions. Methods of analysis and synthesis were applied for a detailed examination of the economic impact of the war on the agricultural sector. These methods facilitated the identification of key factors affecting agricultural productivity and sustainability, as well as the collection and integration of diverse data to develop comprehensive conclusions and recommendations. Methods of scientific extrapolation and forecasting were utilised to evaluate future trends in the agricultural sector under wartime conditions. These methods enabled the determination of potential scenarios regarding the conflict's impact on production, markets, and foreign economic relations, alongside the formulation of recommendations for the long-term stabilisation of agriculture.

### **PRODUCTION AND EXPORT POTENTIAL OF UKRAINE'S AGRO-INDUSTRIAL COMPLEX BEFORE THE ONSET OF RUSSIA'S FULL-SCALE AGGRESSION**

Ukraine ranks among the world's leading producers and exporters of agricultural goods, primarily due to its favourable climatic and natural conditions for agricultural development. The country's agroindustrial complex comprises specialised enterprises and organisations engaged in the production, processing, transportation, marketing, and proper storage of

agricultural products (Zaharin, 2018; Ivaskevich, 2018). Under normal conditions, Ukraine is a global leader in agricultural production, with an annual output of 90-100 million tonnes of food (Izhevsky, 2018; Naumenko, 2019). Before the war, the agri-food sector was the cornerstone of the national economy, serving as the primary budget-generating industry. It contributed approximately 19% to the gross domestic product (GDP), 12% to the state budget, and accounted for one-third of the country's export commodity structure.

According to additional data, Ukraine's agricultural sector contributes approximately 10% to the GDP and generates 40% of the country's foreign exchange earnings from exports. Agriculture occupies over 41.4 million hectares of Ukrainian land, with about 31 million hectares under private ownership and 10.4 million hectares owned by the state and communes (Dun-ska & Bilykh, 2022; Gromov, 2022). With 33% of its land area dedicated to agriculture, a favourable climate, and proximity to major markets, Ukraine has established itself as a critical agricultural export hub with substantial processing capacities. The country leads globally in sunflower oil exports and ranks among the top grain exporters. Between 2019 and 2021, Ukraine accounted for approximately 10% of global wheat exports, 15% of maize exports, 15% of barley exports, and nearly 50% of sunflower oil exports. Furthermore, the agri-food sector is a cornerstone of Ukraine's economy, contributing significantly to employment and GDP. According to the USDA, Ukraine ranked as the second-largest grain exporter globally after the United States in 2019-2020. In 2021-2022, Ukraine's share in global exports included approximately 40% of sunflower oil, 27% of sunflower seeds, 5% of barley, 3% of wheat, 3% of rapeseed, and 2% of maize (Ukraine: FAIRS export..., 2023).

J. Wandel (2023) provided additional insights into the combined export potential of Ukraine and Russia. In 2020, these two countries collectively accounted for 69% of global sunflower meal exports, 65% of sunflower oil, 28% of wheat, and 15% of maize. Ukraine, in particular, dominated global markets for sunflower meal and oil, while Russia emerged as the largest wheat exporter, surpassing the European Union, the United

States, Canada, and Ukraine. The war in Ukraine has significantly disrupted the operations of these two major agricultural producers, posing a severe threat to the food security of low-income nations. This crisis has heightened international concerns about global food security. Despite considerable political, economic, and social transformations since Ukraine's independence and its transition to a market economy, land policies and systems of intensive agricultural production have remained largely unchanged.

Meanwhile, global challenges related to food supply and environmental safety persist as critical issues requiring urgent solutions (Degtyareva, 2018). For instance, UN experts estimate that the combined effects of the war and the COVID-19 pandemic will drive the number of food-insecure individuals to its highest level in 15 years (Lucii & Korniyuchuk, 2022). As one of the world's top ten exporters of agricultural products, Ukraine's sustainable and innovative development in agriculture holds the potential to enhance its agroecological profile. This development could create the foundation for increased competitiveness in both domestic and international markets, thereby contributing to the resolution of global food security challenges (Radchenko & Pidvalna, 2020; Dumanska, 2023). In summary, addressing global food security challenges requires urgent solutions, and Ukraine's focus on sustainable agricultural development could play a key role in enhancing its competitiveness while contributing to global food supply stability.

### **THE IMPACT OF RUSSIA'S LARGE-SCALE AGGRESSION ON THE PRODUCTION AND EXPORT POTENTIAL OF THE UKRAINIAN AGRICULTURAL SECTOR**

In 2022, the ongoing military conflict in Ukraine plunged the agricultural sector into its most challenging period since the country gained independence. Land occupation and the war led to the loss of 3.5 million hectares of arable land, alongside shortages of labour, machinery, fuel, and capital, as well as the disruption of supply chains. This situation brought unprecedented hardship to farmers. The conflict, which escalated significantly since February 2022, resulted in reduced crop yields and the physical destruction of agricultural activities. A decline in

grain acreage (by over 30%) and the blockade of export routes from Ukrainian ports contributed to a global food crisis (Chub, 2022). The blockade of these ports has caused food shortages and rising prices in several developing countries, leading to significant social upheaval (Chala & Barbul, 2020; Babenko, 2021).

The Russian military occupation has effectively incapacitated Ukrainian ports, through which approximately 90% of Ukraine's agricultural exports were previously transported. According to the Ministry of Agrarian Policy of Ukraine, while ports once handled around 150,000 tonnes of grain, only about 20,000 tonnes are now being moved by rail. Despite these challenges, the Ministry reported that the 2022 harvest was expected to be over 67 million tonnes. Following the signing of the Grain Agreement, August 2022 saw 68 ships depart from Ukrainian ports, transporting 1.72 million tonnes of agricultural products to 18 countries. The total volume of agricultural shipments across various logistics routes in August amounted to roughly 5 million tonnes. Throughout 2022, Ukraine's agricultural and food exports totalled 50.9 million tonnes, with a total value of 21.1 billion USD (Lucii & Korniyuchuk, 2022). Ukrainian agricultural and food products accounted for 53% of total exports in 2022 and remained the most exported product in the entire sector.

Improved logistics, access to the railway, and proximity to the western borders ensured efficient production for Ukrainian companies in 2022 (Demianenko *et al.*, 2023). The share of the European Union in Ukraine's total exports increased from 41% in 2021 to 62% in 2022. Turkey, China, and India were other important trading partners. The reorientation of Ukraine's trade towards the EU was facilitated by the signing of the Black Sea Grain Initiative and the creation of the "Solidarity Road" by the European Commission to strengthen Ukraine's ties with the EU (Hubeni *et al.*, 2024). As these data show, Ukraine continues to contribute to global food security, supported by robust financing of the agricultural sector. Thus, according to the Ministry of Agriculture, by the beginning of 2023, Ukrainian farmers had received more than 34.5 billion UAH in support for the development of their farms (Rudevska *et al.*, 2024).

Despite the ongoing military conflict, 99% of the companies affiliated with the European Business Association (2023) expressed their intention to continue operating in the Ukrainian market in 2023. Furthermore, 63% of these companies planned to invest in Ukraine, even amid wartime conditions. On the other hand, only 17% of new investors considered it worthwhile to expand their business in Ukraine. Despite the direct and indirect losses amounting to 41.1 billion USD that Ukraine's agro-industrial complex has incurred since the onset of the full-scale war, the prospects for its development remain positive. According to O. Zgurska *et al.* (2022), the total losses incurred by the sector as of 2022 amounted to 41.1 billion USD. The study also concluded that the local agricultural sector demonstrated resilience in the face of the global COVID-19 crisis and Russian aggression. Having analysed studies of Ukrainian researchers on the impact of Russian aggression on the Ukrainian agricultural sector, attention must now turn to the work of foreign researchers on this topic.

A systematic review of foreign literature on the impact of the Russian-Ukrainian war on Ukraine's agricultural sector on the ScienceDirect (n.d.) platform revealed a large collection of studies that estimate the damage caused to Ukrainian agriculture based on aerial photographs. For example, continuous analyses of free Sentinel-2 satellite data using machine learning classified approximately 500,000 hectares of arable land in 10 regions of Ukraine as damaged during 22 two-week periods in 2022, with the most significant impact observed from March to September. Additionally, aerial monitoring estimated that grain production losses in six eastern regions in 2022 were up to 31.5% compared to the average yield in 2016-2020 and up to 6.76% compared to national grain production (He *et al.*, 2023). Another group of studies identified through ScienceDirect focuses on the analysis of time series related to exchange rates (including agricultural futures and spot prices) and indices such as volatility indices (Deininger *et al.*, 2023). These studies also examine the correlation between geopolitical shocks and time series risk indices (Neik *et al.*, 2023; Polat *et al.*, 2023; Aizenman *et al.*, 2024). These papers utilise advanced time series analysis techniques, including the

Copula-CoVaR approach, the Student's perturbed ARMA-GARCH model, structural vector autoregression (SVAR), and time-varying vector autoregression (TVP-VAR). Both groups of studies rely on methodological tools designed to analyse the impact of the Russian-Ukrainian war on Ukraine's agricultural sector.

A Google Scholar search of foreign articles on the impact of the war between Russia and Ukraine on Ukrainian agriculture yielded several studies summarised below. For instance, A. Rose *et al.* (2023) described how military conflict directly affects grain exports and its economic impact on the world market. Since the export of grain from Ukraine plays an important role in ensuring food security, this situation has the potential to trigger a global food crisis. These authors provide a detailed analysis of the impact of the decline in grain exports on macroeconomic indicators in various regions. Similarly, Kh. Ay & A. Söylemez (2023) emphasised the importance of the Black Sea Grain Initiative for Ukraine's grain exports and assessed Turkey's policy in negotiating this agreement. M. Qin *et al.* (2023) highlighted that in the face of severe climate change and the war between Russia and Ukraine, the stabilisation of global supply chains is crucial for the sustainable development of the world. S. Ahn *et al.* (2022) argued that Russia's attack on grains and oilseeds has negatively affected world trade, leading to significant price fluctuations and threatening global food security. Their study provides an assessment of the actual impact of the Russian invasion of Ukraine on international trade in grains and oilseeds. The authors found that imports of grain and oilseeds to Ukraine between February and July 2022 were 78.2% lower than expected. The war resulted in a shift in trade flows, primarily benefiting North American and European countries. The study concluded that while the Russian-Ukrainian conflict had a significant effect on the trade of the directly involved countries, its impact on global grain and oilseed markets in terms of trade volumes was more limited.

The USDA has released its 2024-2025 World Wheat Market Forecast, which predicts increased supply, consumption, and trade, as well as a slight decline in stocks. Supply is forecast to increase by 3.5 million tonnes to 1,060.6 million

tonnes, mainly due to increased production in Ukraine, Kazakhstan, and Australia, which will offset cuts in the EU and the US. The growth of production in Ukraine will be supported by data from the National Bureau of Statistics on a larger-than-expected harvest area. World consumption is anticipated to increase by 4.1 million tonnes to a record 804 million tonnes, mainly due to increased use of feed and waste in the EU, Kazakhstan, and Ukraine. World trade is expected to increase by 2.0 million tonnes

to 214.9 million tonnes, primarily due to increased exports from Australia and Ukraine. In 2024-2025, based on the World Agricultural Supply and Demand Estimates (WASDE, 2024), world-ending stocks are projected to decline by 0.6 million tonnes to 256.6 million tonnes, the lowest level since 2015-2016. Selected actual data on the supply and use of wheat in Ukraine and Russia in recent years, based on the Forecasts of World Agricultural Demand and Supply, are shown in Table 1.

**Table 1.** Wheat supply and use (million metric tonnes) for Ukraine and Russia

Countries	Beginning stocks	Production	Import	Export	Ending stocks
2022-2023					
Ukraine	6.27	21.50	0.06	17.20	2.90
Russia	12.09	92.00	0.30	49.00	14.39
2023-2024 Est.					
Ukraine	2.90	23.00	0.07	18.40	0.77
Russia	14.39	91.50	0.30	55.50	10.19

**Source:** compiled by the author based on data WASDE (2024)

From this table, it is evident that in terms of the main indicators of wheat production and export, Russia is three to four times more advanced than Ukraine. However, according to forecast estimates for 2023-2024, these indicators for Ukraine are expected to improve, although they remain significantly lower due to the ongoing conflict. The WASDE report does not provide comparable data for Ukraine and Russia regarding the supply and use of oilseeds. Nonetheless, the USDA data presented in the WASDE report, using wheat production and export as an example, also highlight the stability of the Ukrainian agricultural sector.

Given the critical role that Russia and Ukraine play in the global food supply, the outbreak of the Russian-Ukrainian conflict has undeniably had a significant impact on and posed a substantial risk to the global food system (Rawtani *et al.*, 2022; Neik *et al.*, 2023; Zhou *et al.*, 2024). However, it is apparent that if the war persists for an extended period, this stability will likely be disrupted. Therefore, it is crucial to develop and implement measures aimed at strengthening this stability and restoring the potential of Ukraine's agricultural sector in the aftermath of the conflict.

### **DEVELOPMENT AND IMPLEMENTATION OF MEASURES TO STRENGTHEN AGRICULTURAL STABILITY AND POST-WAR RECOVERY IN UKRAINE**

Targeted measures at both the national and international levels are crucial for ensuring the stability of Ukraine's agricultural sector and enabling effective post-war recovery. The conflict has caused extensive damage to the country's agricultural infrastructure, disrupted supply chains, and restricted export opportunities. Given the strategic significance of agriculture for Ukraine's food security and the global food system, the development and implementation of strategies to restore and strengthen this sector are of paramount importance. For example, O. Dorosh *et al.* (2024) highlighted the urgent need to restore infrastructure and support agricultural producers through government programmes. Destroyed warehouses, access roads, and agricultural facilities must be restored to ensure smooth production processes and expand product storage capabilities. This restoration process should include financial assistance from national and international partners to facilitate a rapid return to stability in the agricultural sector. O. Shubravska *et al.* (2024)

noted the need for market diversification to reduce reliance on traditional suppliers. Similarly, V. Rudevskaya *et al.* (2023) argued that it is important to provide social support to rural agricultural communities to prevent migration and restore social stability in war-affected areas. The state programme should provide financial and social support to stabilise the economic situation in the agrarian sector.

T. Bodnarchuk (2022) emphasised that farmers need to adapt their production methods by introducing new technologies, such as unmanned aerial vehicles for crop monitoring, and innovative farming methods that optimise costs and increase yields even under wartime conditions. The blockade of ports and disruption of supply chains, exacerbated by rising prices for fuel, fertilisers, and other essential resources, have significantly reduced the competitiveness of Ukrainian agricultural products on the international market and made production more challenging. In addition, the war has significantly complicated the export of agricultural products, which previously constituted a significant part of the national income. The blockade of Black Sea ports and instability on land routes have forced Ukrainian agricultural enterprises to explore alternative markets, particularly in neighbouring countries such as Poland and Romania. O. Shumilova *et al.* (2023) examined the consequences of the war in terms of new environmental challenges for the agricultural sector. Specifically, military operations, bombings, explosions, and the use of military equipment have caused severe soil contamination, affecting both soil and water quality.

Residues of heavy metals, fuel, lubricants, and chemicals in the soil necessitate immediate remediation measures to prevent long-term deterioration of crop yields and product quality. Additionally, the war has destroyed natural ecosystems and biodiversity; many natural areas, such as forests, reservoirs, and pastures, have been severely damaged. This has led to a decrease in biodiversity and the loss of natural habitats for flora and fauna, increasing the risk of ecological imbalance, affecting agroecosystems, and reducing the resilience of the agricultural sector to natural disasters. Third, increased soil erosion caused by disruption to the

topsoil has heightened the risk of water and wind erosion. Y. Hubeni *et al.* (2024) observed that the war threatens food security not only in Ukraine but globally, as Ukraine has traditionally been a major grain exporter. The ongoing port blockades have exacerbated global food shortages, increasing food prices and reducing availability, particularly in Africa and Asia.

Another key issue is the need to adopt environmentally friendly technologies. Post-war agricultural recovery necessitates the use of “green” technologies that minimise environmental impact, conserve biodiversity, and enhance ecological sustainability. Adopting these technologies will also help Ukraine improve its international reputation as a producer of ecologically clean products. The successful implementation of these measures requires collaboration among national, institutional, and international partners who can provide financial and technical resources for restructuring. A comprehensive strategy that incorporates modern farming techniques and technological innovations will not only ensure long-term food security and economic stability for the country but also establish the foundation for the sustainable development of Ukraine’s agricultural sector.

## CONCLUSIONS

According to the study, an analysis of 42 sources from 2018 to 2024 identified three main clusters of publications. The first cluster focused on the characterisation of the production and export potential of Ukraine’s agro-industrial complex before the onset of full-scale Russian aggression, highlighting its strengths and development prospects. The second cluster contained two subclusters: the first described methodological tools for quantitative assessment of the impact of the Russian-Ukrainian war on the agricultural sector, while the second focused on searching foreign articles on the ScienceDirect platform from 2023 to 2024. The review concludes that if the war continues for an extended period, the stability of the Ukrainian agricultural sector, as defined above, is likely to be disrupted. Therefore, it is imperative to develop and implement measures to enhance this stability and restore the potential of the Ukrainian agricultural sector in the post-conflict period.

The analysis of the third cluster indicated that, in the event of a prolonged military conflict, the consequences will necessitate the development of new conceptual approaches to address these challenges. Such measures should include state and financial support, soft loans, and grants to help farmers resume production and acquire necessary resources. The state should also stimulate the adoption of environmentally friendly and energy-efficient technologies, which will minimise environmental impact and increase the sustainability of the agricultural

sector. This issue requires a dedicated review of the literature and further research to identify the most effective measures. Moreover, fostering public-private partnerships could further strengthen the sector's recovery and long-term resilience.

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## CONFLICT OF INTEREST

None.

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<https://doi.org/0000-0002-8591-8202>**Огляд проблем агропромислового комплексу України у зв'язку з військовою агресією Росії**

**Анотація.** Війна в Україні, розв'язана державою-агресором, призвела до втрати значної частини виробничого, експортного, сировинного та продовольчого потенціалу України, створивши великий ризик довгострокової економічної нестабільності, у тому числі ризик глобальної продовольчої безпеки. Метою статті був аналіз впливу військової агресії росії на агропромисловий комплекс України, зокрема вивчення економічних проблем, які виникають у цьому секторі. Огляд також передбачав розгляд можливостей відновлення та адаптації агровиробників у нових умовах та в повоєнний час. Для досягнення мети були використані такі методи: метод наукового узагальнення; аналізу та синтезу; прогнозування та наукової екстраполяції. У літературному пошуку було відібрано публікації, які утворили три кластери. Аналіз напрацювань першого кластера показав, що до війни Україна, як і росія, входила до десятки світових виробників та експортерів сільськогосподарської продукції. У зв'язку з цим зарубіжні дослідники були стурбовані підривом глобальної продовольчої безпеки. Аналіз другого кластера публікацій показав, що в перші роки війни аграрний експортний потенціал України скоротився на некритичну суму через Зернову угоду та переорієнтацію потоків сільськогосподарської продукції на сухопутні коридори на західних кордонах України. Аналіз третього кластера вказав на те, що стабільність українського аграрного сектору буде порушена, якщо війна триватиме досить довго. Практична цінність статті полягає в наданні глибокого аналізу економічних викликів, з якими стикається та буде стикатись у майбутньому агропромисловий комплекс України, що може слугувати основою для розробки ефективних стратегій підтримки та відновлення цього важливого сектора в умовах війни та в повоєнний час

**Ключові слова:** аграрний бізнес; галузь; глобальна продовольча безпека; продовольчий ринок; Google Scholar; ScienceDirect