

PROJECT MANAGEMENT AND FINANCIAL AND ECONOMIC SECURITY IN THE CONDITIONS OF GLOBALIZATION

UDC 339.564:631.1(477):351.863(100)

DOI <https://doi.org/10.26661/2414-0287-2023-3-59-18>

THE ROLE OF UKRAINE IN THE FORMATION OF WORLD FOOD SECURITY

Kushnir S.O., Anoshina S.S.

Zaporizhzhia National University
Ukraine, 69600, Zaporizhzhia, Zhykovsky str., 66
SvetlanaAK@ukr.net
ORCID: 0000-0002-1410-1887

Key words:

food security, Ukraine, economy,
export, agriculture,
global food security, war,
the Russian-Ukrainian war,
grain supplies

The authors considered the role of Ukraine in the formation of world food security. It was established that the export of agricultural products is a priority component of the national economy. It is studied how the full-scale invasion of the Russian Federation on the territory of sovereign independent Ukraine affects the export of Ukrainian food. The state of Ukrainian food exports based on the results of the 2021/2022 marketing year and 2022/2023 marketing year was considered. The specifics of Ukrainian export of food and agricultural goods are analyzed. The export potential of Ukraine has been proven in the conditions of protracted military aggression and large-scale Russian missile attacks on the entire territory of Ukraine, which have continued continuously for more than one year. The authors considered current operational economic indicators and analyzed the dynamics of their decline compared to pre-war data. The reasons for the decrease in grain supplies have been established. Forecasts of various experts regarding exports for the near future were studied. The authors presented relevant data and graphical models for a more accessible understanding of the problem. The general impact of the Russian-Ukrainian war on world food security is substantiated. In the work, the authors emphasized the importance of Ukrainian food supplies at the international level.

РОЛЬ УКРАЇНИ У ФОРМУВАННІ ПРОДОВОЛЬЧОЇ БЕЗПЕКИ СВІТУ

Кушнір С.О., Аношина С.С.

Запорізький національний університет
Україна, 69600, м. Запоріжжя, вул. Жуковського, 66

Ключові слова:

продовольча безпека, економіка,
експорт, сільське господарство,
російсько-українська війна,
поставки зерна

Авторами розглянуто роль України у формуванні продовольчої безпеки світу. Встановлено, що експорт продукції сільського господарства є пріоритетною складовою національної економіки. Досліджено вплив повномасштабного вторгнення російської федерації на територію суверенної незалежної України на експорт українського продовольства. Розглянуто стан експорту українського продовольства за підсумками 2021/2022 маркетингового року та 2022/2023 маркетингового року. Проаналізовано специфіку українського експорту продовольчих та сільськогосподарських товарів. Доведено експортний потенціал України в умовах затяжної воєнної агресії та масштабних ракетних обстрілів рф усю територію України, які безперервно тривають більше ніж протягом одного року. Авторами розглянуті актуальні оперативні економічні показники та проаналізовано динаміку їх спадання порівняно з довоєнними даними. Встановлено причини зменшення поставок зерна. Досліджено прогнози різних експертів стосовно експорту на найближче майбутнє. Автори подали актуальні дані та графічні моделі для більш доступного розуміння проблеми. Обґрунтовано загальний вплив російсько-української війни на продовольчу безпеку світу. У роботі автори акцентували на важливість поставок українського продовольства на міжнародному рівні.

Formulation of the problem

The Russian-Ukrainian war has a negative impact on the food security of both the country and the world, and may limit the world food supply. With the beginning of the full-scale invasion, a drop in the volume of food exports from Ukraine became noticeable, which caused additional pressure on global food security. One of the main reasons for the decrease in exports is the decrease in grain supplies, which is explained by many factors, including the hostilities in the south and east of Ukraine, which made more than a third of Ukrainian fields unfit for sowing, the increase in fuel prices and the complication of logistics, the destruction of infrastructure, the theft of crops, etc. Considering the mentioned losses and problems that Ukraine has experienced, the issue of food security formation is quite urgent and requires research.

Analysis of the latest research and publications on the problem under consideration

Considering the fact that Ukraine is one of the main subjects of food security support, the topic of food security formation has become widespread, especially among Ukrainian information sources. In particular, it is highlighted on the official websites of the Ministry of Agrarian Policy and Food of Ukraine [4; 14; 15], the Ministry of Economy of Ukraine [5] and the National Institute of Strategic Studies [6]. Many scientists also dealt with this issue, including Jurgen Fegele, vice president of the World Bank for Sustainable Development [18], Hryhoriy Stolnikovich, Roman Neiter and Maria Bogonos – Center for Food and Land Use Research KSE [17], Maria Dyachuk, specialist in the industrial greening department of the NGO “Ekodiya” Mykhailo Amosov, head of the industrial greening department of the NGO “Ekodiya” [16]. Scientific works of the mentioned scientists, statistical data and published theses of official state institutions of Ukraine became the information base of this study.

Formulation of the goals of the article

The purpose of this article is to study the role of Ukraine in the formation of world food security in the conditions of a full-scale invasion of Russia on the territory of sovereign Ukraine. Justification of the general impact of the Russian-Ukrainian war on world food security. Analysis of the dynamics of current economic indicators and their comparison with pre-war data.

Presenting material

Food security is the ability of a country to provide its population with safe and high-quality food, as well as access to it. The export of Ukrainian food is an important direction of the country’s economic development, a source of foreign exchange earnings for the country. Ukraine has significant potential in agriculture, particularly in the production of grain, meat, milk and other products.

In 2021, Ukraine took 4th place in the world in terms of grain exports, second only to the USA, Brazil and Argentina. From the beginning of the 2020/2021 marketing year (started on July 1) to January 18, 2021, Ukraine exported about 27.57 million tons of grain and leguminous crops, which is 18.6% (6.3 million tons) less than in the same period last year marketing year [2].

Currently, Russia’s war against Ukraine is causing additional pressure on global food security: a drop in food exports from Ukraine and side effects that may further limit the world’s food supply. With the beginning of the full-scale Russian invasion of Ukraine, grain supplies decreased. Among the reasons should be mentioned:

- 1) about a third of Ukrainian fields are unfit for sowing due to hostilities;
- 2) fuel price increase and logistics complications;
- 3) the destruction of agriculture and the infrastructure that ensures the storage and transportation of food products;
- 4) the blocking by the Russian Navy of access to Ukrainian ports, which prevents dozens of ships that transport food to world markets from reaching the Mediterranean Sea;
- 5) damage and destruction by Russian missiles and bombs of Ukrainian airports, railways, stations and highways, which are critically important for the export of wheat, corn and other goods; destruction of grain warehouses in the east and south of Ukraine, destruction of agricultural machinery and infrastructure [3].

According to the Ministry of Economy, for 2022, during the war, Ukraine exported almost 31.8 million tons of grain, including 11.2 million tons of wheat, 9.7 million tons of corn, and 5.636 million tons of barley (Fig. 1) [5].

As a result of the war, in 2022 the indicators of the previous year’s volume of wheat exports decreased by 12% and the volumes of corn exports – by 8%. At the same time, the volume of barley exports increased by 44%.

Analyzing the data of the Ministry of Agrarian Economy and Food of Ukraine for the 2022/2023 and 2021/2022 marketing years, we observe the following situation (Table 1, Fig. 2).

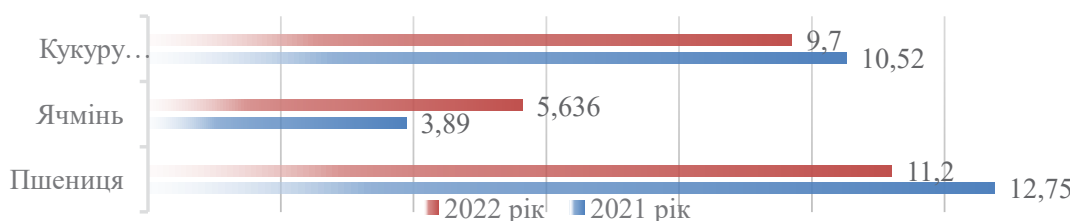


Fig. 1 – Grain export in 2021–2022 (million tons)

Source: created by the author based on [2; 5]

Table 1 – Dynamics of exports from Ukraine of cereals, legumes (with products of their processing) and flour, thousands of tons

	2022/2023 marketing year		2021/2022 marketing year		Dynamics, %	
	Total (as of 31.03.2023)	March 2023	Total (as of 31.03.2022)	March 2022	Total (31.03.2023 to 31.03.2022)	March 2023 to March 2022
Grains and legumes (total)	37639	5341	44943	1428	84%	374%
Wheat	12880	1542	18399	307	70%	502%
Barley	2276	226	5643	7	40%	3229%
Corn	22163	3559	20439	1108	108%	321%
Wheat flour	111,2	16,3	66,9	0,3	166%	5433%
Other flour	4,3	0,4	1,5	0	287%	100%
Flour together	115,5	16,6	66,4	0,3	174%	5533%
Export together (grain + flour)	37793	5364	45034	1428,3	84%	376%

Source: compiled based on [14]

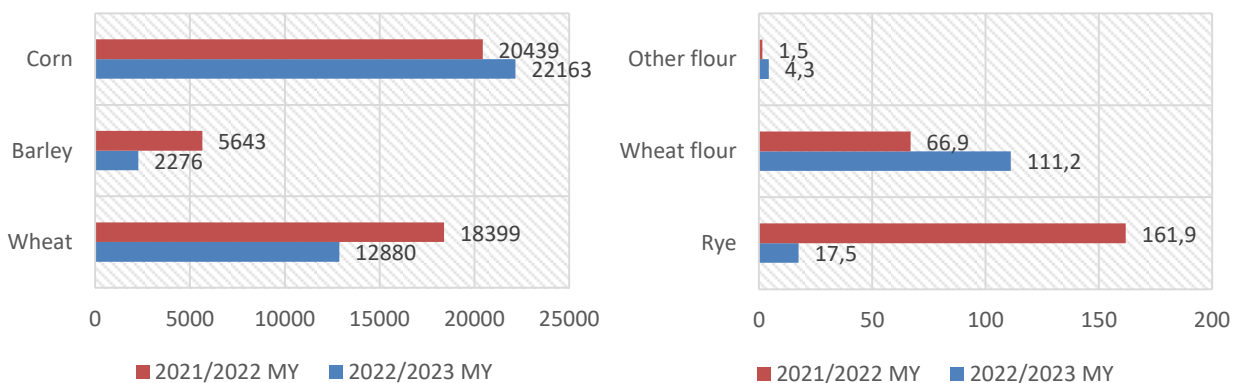


Fig. 2 – Comparative export statistics of the main types of cereals and their processing products 2022/2023 and 2021/2022 marketing years, thousand tons

Source: created by the author based on [14]

As can be seen from Table 2, during the current marketing year, the export of cereals fell by 16%, despite a slight increase in the export of corn by 8.4% and flour in general by almost 74%. Although in March of the current year, a significant increase in the export of grain by 3.8 times was noted.

However, despite all the difficulties with exporting Ukrainian food, Ukraine maintains a leading position among world exporters and is among the TOP-5 global agricultural exporters. Together with international partners, Ukraine expanded new logistics routes, in particular, a grain corridor was launched, thanks to which the state managed to export more than 40 million tons of grain, oilseeds and their processing products since the beginning of the war to provide food for hundreds of millions of people around the world [4].

Estimates of grain exports for 2023 vary greatly:

according to the report of the US Department of Agriculture, USDA, for 2023 it is predicted that Ukraine will harvest 21 million tons of wheat and 27 million tons of corn. At the same time, 13.5 million tons of wheat (which is 14% more than last year) and 23.5 million tons of corn (6% more than last year) will be exported. In general, the forecast for the export of fodder grain in Ukraine for the 2022–23 marketing year in the March forecast was increased by 1.1 million tons – to 26.03 million tons from 24.93 million tons in February, and the forecast for its production remained at 34.16 million tons [11].

according to the data of the National Bank of Ukraine, a reduction in the harvest of cereals and legumes in 2023 is forecast by 15.2% to 45.6 million tons compared to 53.8 million tons in 2022. Wet weather and a shortage

Table 2 – The main directions of export of Ukrainian food

Type	Subspecies of supplies	The main importing countries	Export volumes (2022 year)
Grain	Wheat, barley, rye, corn	EU, China, India, Egypt, Iran	42,6 million tons
Meat	Pork, poultry, beef	Saudi Arabia, United Arab Emirates, China	413,2 million tons
Milk and dairy products	Milk, milk powder, butter, casein, cheese, ice cream	EU, China, Kazakhstan	108,6 million tons
Eggs	Eggs of chickens, quails, etc.	EU, Singapore, United Arab Emirates, Israel	228 million tons

Source: created by the author based on [1; 7; 8; 9]

of electricity (which is needed to dry the grain) delayed the harvest of corn in late 2022, with nearly 20% still in the field at the start of 2023. These factors may affect land preparation and reduce the area planted with spring crops for the 2023 harvest [13].

According to the forecast of the Ministry of Agriculture, Ukraine will have a significantly smaller harvest this year than last year due to hostilities and worsening weather conditions. However, it will be quite enough to ensure the food security of our country and preserve its export potential. Yes, we are talking about more than 51 million tons of grain and 16 million tons of oilseeds [14].

The Russian Federation's war against Ukraine disrupted the normal functioning of the world food market, as these two countries account for 30% of world exports of wheat and barley, 18% of corn, and about 80% of oil and oil meal. According to estimates by the Food and Agriculture Organization of the United Nations (FAO), about 13 million people around the world may face food shortages as a result of Russia's invasion of Ukraine [3].

The hostilities taking place on the territory of Ukraine have an extremely negative impact on the functioning of food systems; the following consequences are expected, in particular:

1) disruption of integral supply chains of agricultural products and food products (from primary production to sale of products to the consumer), as well as activities related to the creation of added value in the agricultural sector, related to the production, processing, distribution, consumption and disposal of food products; disruption of the sowing campaign, which is especially threatening, given the high world prices for gas and, accordingly, fertilizers. Active hostilities are currently taking place in those regions where most of the wheat is grown – Kherson, Odesa, and Zaporizhzhia. Collectively, this will lead to a decrease in yield, collection and export of grain; complicated export of Ukrainian products to foreign markets due to the blocking of Ukrainian ports by the Russian Federation (60% of Ukrainian agricultural products are exported by sea), which will have a negative impact primarily on countries that depend on food imports [6].

All these factors can lead to the emergence of a serious crisis of global food security: an increase in inflation and a rapid increase in world food prices.

Therefore, in order to minimize the manifestations of the global food crisis, it is necessary to protect and support the production of agricultural products in Ukraine as soon as possible in the conditions of martial law, taking advantage of the opportunities of Ukraine's

influence on global food policy, which it has gained thanks to the achievement of leading positions in the world markets of certain types of agricultural products, as well as the activation of cooperation with international and intergovernmental organizations, in particular FAO, regarding the transformation of food systems [6].

But the countries are already actively working on solving the problem of complicated export of products. The USAID project is spreading a new grain export technology. The USAID project proposes to use a new technology – large reusable soft containers (maxibags). One maxi bag holds 14 tons of grain. Thanks to them, Ukraine as an exporter will be able to quickly ship grain to its customers and send it by rail to the countries of the European Union. During a full-scale invasion of Russia, in the conditions of blockade of the seaports of Ukraine by Russia, this opportunity can help in the export of grain and increase the volume of its export by rail. The USAID project is promoting this grain transshipment technology to help agricultural exporters learn about new opportunities, accelerate grain exports, and allow Ukraine to supply and guarantee global food security even in times of war [15].

Conclusions

Ukraine plays an important role in shaping world food security: it is one of the leading exporters of grain crops in the world. The country also has significant potential in the production of other types of agricultural products, including vegetables, fruits, dairy and meat products. Business is currently facing a difficult situation related to the war, which significantly affects the production of export-oriented food. Despite this, Ukraine actively cooperates with international organizations in order to support its products and improve food security in the world. In addition, even in such difficult conditions, the state actively develops the export of its agricultural products to the markets of the European Union, Asia and Africa, which allows to increase its income and helps to reduce the global food crisis. In order to reduce the risk of a food crisis, it is necessary to take urgent measures to protect and support the production of agricultural products in Ukraine, especially in the conditions of martial law; solve logistics problems; equip the country with high-quality air defense equipment to minimize damage to natural resources and agriculture, transport chains and infrastructure that ensures food production and storage. But the main solution to the problem was and remains the cessation of hostilities on the territory of Ukraine and the withdrawal of Russian troops from the territories of a sovereign independent state.

References

1. The main directions of food exports from Ukraine in 2022. URL: <https://agriagency.com.ua/events/14388.html> [in Ukrainian]
2. Ukraine became the world's second exporter. URL: <https://www.ukrinform.ua/rubric-economy/3176429-ukraina-stala-drugim-u-sviti-eksporterom-zerna.html> [in Ukrainian]
3. The impact of putin's war on global food security. URL: <https://editorials.voa.gov/a/6547552.html> [in Ukrainian]
4. Even during the war, Ukraine is among the TOP-5 global agricultural exporters. *Official website of the Ministry of Agrarian Policy and Food of Ukraine*. URL: <https://minagro.gov.ua/news/navit-v-umovah-vijni-ukrayina-vhodit-u-top-5-svitovih-agroeksporteriv-mikola-solskij> [in Ukrainian]

5. In 2022, Ukraine exported almost 100 million tons of goods. *Official website of the Ministry of Economy of Ukraine*. URL: <https://me.gov.ua/News/Detail?lang=uk-UA&id=1487b1f5-eeb7-4946-b9c8-3370f20568a2&title> [in Ukrainian]
6. Ukraine and global food security in conditions of war. *Official website of the National Institute of Strategic Studies*. URL: <https://niss.gov.ua/news/komentari-ekspertiv/ukrayina-ta-hlobalna-prodovolcha-bezpeka-v-umovakh-viyny> [in Ukrainian]
7. Meat, oil, grain. What does Ukraine export and how will it affect prices for Ukrainians. URL: <https://www.nta.ua/myaso-oliya-zerno-shho-eksportuye-ukrayina-i-yak-cze-poznachytsya-na-czinah-dlya-ukrayincziv/> [in Ukrainian]
8. Last year, Ukraine increased the export of dairy products by 39%. URL: <https://www.seeds.org.ua/minulogo-roku-ukraina-zbilshila-eksport-molochnoi-produkcii-na-39/> [in Ukrainian]
9. The export of poultry meat brought Ukraine 18.6% more in 2022. URL: <https://agrotimes.ua/tvarinnitstvo/eksport-myasa-ptyczi-prynis-ukrayini-u-2022-roczy-na-186-bilshe/> [in Ukrainian]
10. Export of eggs from Ukraine in the first half of the year decreased by 42% due to Russian aggression. URL: <https://interfax.com.ua/news/economic/845442.html>
11. Ukraine will harvest 21 million tons of wheat in 2023, according to US forecasts. URL: <https://mind.ua/news/20254610-ukrayina-zbere-21-mln-tonn-pshenici-u-2023-roci-za-prognozami-ssha#> [in Ukrainian]
12. The NBU predicts that the 2023 harvest will be 15% smaller than last year. URL: <https://landlord.ua/news/nbu-prohnozuie-shcho-vrozhai-2023-bude-na-15-menshym-nizh-torik/> [in Ukrainian]
13. The Ministry of Agrarian Policy announced the forecast for this year's crop of grain and oil crops. URL: <https://landlord.ua/news/minahropolityky-ozvuchylo-prohnoz-tsohorichnoho-vrozhaiu-zernovykh-i-oliinykh/> [in Ukrainian]
14. Export of grain, legumes and flour from Ukraine. *Official website of the Ministry of Agrarian Policy and Food of Ukraine*. URL: <https://minagro.gov.ua/investoram/monitoring-stanu-apk/eksport-z-ukrayini-zernovih-zernobobovih-ta-boroshna> [in Ukrainian]
15. The USAID project is spreading a new grain export technology. *Official website of the Ministry of Agrarian Policy and Food of Ukraine*. URL: <https://minagro.gov.ua/news/proyekt-usaid-poshiryuye-novu-tehnologiyu-eksportu-zerna> [in Ukrainian]
16. Birth of hunger from fire: Review of analytics on world food security in the context of the war in Ukraine. URL: <https://ecoaction.org.ua/narodzhennia-holodu-z-vohniu.html> [in Ukrainian]
17. Review of Food Security and Policy. URL: <https://kse.ua/ua/oglyad-prodovolchoyi-bezpeki-ta-politiki/> [in Ukrainian]
18. The Impact of the War in Ukraine on Food Security. *World Bank Expert Answers*. URL: <https://www.worldbank.org/en/news/video/2022/04/05/the-impact-of-the-war-in-ukraine-on-food-security-world-bank-expert-answers>