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FOOD PROBLEM OF THE EASTERN REGION OF UKRAINE CAUSED BY THE WAR

The article deals with the scientifically substantiated analyses of the food problem of the eastern region of Ukraine based on its essential importance for the world problem of avoiding hunger. Taking into account the fact that the potential of external production exceeds the needs of the domestic market it is necessary to conduct a research of solving food problems when planning the development of the agricultural sector of the Ukrainian economy.

This article considers such analytical issues estimating that Ukraine has been among the top five exporters of grain and legume resources for many years. Ukraine is one of the main countries that contributes to the agricultural sector of the world economy. The activities of future specialists, when dealing with the food problem, depend on the content and nature of the knowledge that not only the coronavirus pandemic, but also armed conflicts in most of the specified countries and climate change, several years of drought contributed to problems with agricultural production in the region.

The general provisions on analysis of various options for solving this problem are given and it is estimated that the analytical approach is the most optimal, since it allows you to build a diagram for comparing percentage of the most popular agricultural crops in the sown areas. It is advisable to consider the process of selecting most of the data that have been collected before the invasion. This research paper reveals the fact that much of the concern is related to shortages in the supply of staple crops such as wheat, corn and oilseeds, which could rise up prices. The invasion also led to higher prices for fuel and related fertilizers, leading to further food shortages and higher prices. The rise in wheat prices resulting from the conflict has become a problem for the countries, heavily dependent on Russian and Ukrainian wheat exports, and raised fears of social protest.

The article analyzes economists' views on the process of solving the food problems. It should be noted that these main issues will affect further world market prices and inflation will rise. Due to invasion, the US Department of Agriculture published a forecast for the export of grain products from Ukraine. Food and Agriculture Organization of the United Nations published information on the growth of the grain price index. Practical recommendations are provided for solving the problems.

The research has been developed to estimate that Ukraine is a leading country in the agricultural sector of the economy, which supplies food to the EU, Africa and India. Due to Russia's invasion into Ukrainian lands, many states may suffer from hunger and if the full-scale intervention into Ukraine is not stopped, then the world will face a food crisis.

Keywords: agriculture; external production; food problems; domestic market; invasion; sowing campaign; sunflower; buckwheat; sugar beet; rye and corn; percentage calculation; salt deposit

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ПРОДОВОЛЬЧА ПРОБЛЕМА СХІДНОГО РЕГІОНУ УКРАЇНИ, СПРИЧИНЕНА ВІЙНОЮ

У статті проводиться науково обґрунтований аналіз продовольчої проблеми східного регіону України, виходячи з її суттєвого значення для світової проблеми запобігання голоду. Враховуючи той факт, що потенціал зовнішнього виробництва перевищує потреби внутрішнього ринку, необхідно провести дослідження розв'язання продовольчих проблем під час планування розвитку аграрного сектору економіки України. У цій статті розглянуто такі аналітичні питання, які дають змогу оцінити, що Україна протягом багатьох років входить до п'ятірки найбільших експортерів зернових та зернобобових ресурсів. Україна є однією з основних країн, які роблять внесок в аграрний сектор світової економіки. Діяльність майбутніх фахівців при вирішенні продовольчої проблеми залежить від змісту та характеру знань про те, що проблемам сприяли не лише пандемія корона вірусу, а й збройні конфлікти у більшості зазначених країн та зміна клімату, кілька років посухи із сільськогосподарським виробництвом у регіоні. Наведено загальні положення щодо аналізу різних варіантів вирішення даної задачі та оцінено, що аналітичний підхід є найбільш оптимальним, оскільки дозволяє побудувати діаграму порівняння відсоткового змісту найбільш популярних сільськогосподарських культур на посівних площах. Доцільно розглянути процес відбору більшої частини даних, зібраних до вторгнення. Цей дослідницький документ показує той факт, що більша частина занепокоєння пов'язана з нестачею постачання основних сільськогосподарських культур, таких як пшениця, кукурудза та насіння олійних культур, що може призвести до зростання цін. Вторгнення також призвело до підвищення цін на паливо та відповідні добрива, що призвело до подальшого дефіциту продовольства та зростання цін. Зростання цін на пшеницю внаслідок конфлікту стало проблемою для країн, що сильно залежать від російського та українського експорту пшениці, і викликало побоювання соціального протесту.

У статті аналізуються погляди економістів на вирішення продовольчої проблеми. Слід зазначити, що ці основні питання надалі впливатимуть на ціни на світовому ринку та зростання інфляції. У зв'язку із вторгненням Міністерство сільського господарства США опублікувало прогноз експорту зернових продуктів із України. Продовольча та сільськогосподарська організація ООН опублікувала дані про зростання індексу цін на зерно. Надано практичні рекомендації щодо вирішення проблем.

Дослідження було розроблено для оцінки того, що Україна є провідною країною в аграрному секторі економіки, яка постачає продукти харчування до ЄС, Африки та Індії. Через вторгнення Росії на українські землі багато держав можуть постраждати від голоду і якщо повномасштабну інтервенцію в Україну не зупинити, то на світ чекає продовольча криза.

Ключові слова: сільське господарство; зовнішнє виробництво; продовольчі проблеми; внутрішній ринок; вторгнення; посівна кампанія; соняшник; гречка; цукровий буряк; жито та кукурудза; процентний розрахунок; поклади солі

Problem statement. Agriculture is one of the leading sectors of the Ukrainian economy. Besides stable providing of the country's population with high quality, safe, affordable food, Ukrainian agriculture makes a great contribution to solving the world hunger problem. Taking into consideration the fact that the potential of external production exceeds the needs of the domestic market it is necessary to conduct a research of solving food problems when planning the development of the agricultural sector of the Ukrainian economy. The food problem is associated

with many aspects of the political, economic, cultural life of society. The process of dealing with the food problem of the eastern region, which is currently unfolding, aims to prepare future specialists to solve many problems.

Actual scientific researches and issues analysis. Ukraine has been among the top five exporters of grain and legume resources for many years. Thus, Ukraine is one of the main countries that contributes to the agricultural sector of the world economy. In 2021, Ukraine was accepted into the "Committee on World Food Security of the UN" and

for the first time the "International Grains Council" was headed by a Ukrainian representative - Trade Representative of Ukraine T. Utko.

According to the figures of the Food and Agricultural Organization of the United Nations, at the beginning of February 2022, 161 million people in 42 countries suffered from a critical shortage of food products. More than half a million people suffered from hunger in Ethiopia, Yemen, Nigeria, the Democratic Republic of Congo, Somalia, Kenya, Afghanistan, Sudan and South Sudan. Not only the coronavirus pandemic, but also armed conflicts in most of the specified countries and climate change, several years of drought contributed to problems with agricultural production in the region. However, as noted by Professor Henry Leer, the Russian-Ukrainian war will have much worse consequences for the countries of the Middle East, North and West Africa, because they are the main exporters of grain from Ukraine and Russia.

Research objective. Today, the topic of food problems is very important for every citizen of Ukraine. After the outbreak of invasion into the territory of Ukraine, food problems began to arise. The most important problem is that invasion is taking place in the eastern and central part of the country, and these parts are one of the main ones in the primary (agricultural) sector of the economy.

Presentation of the material. Since the beginning of the Russian invasion into Ukraine in 2022, the Food and Agriculture Organization, as well as other observers in the food markets, have warned of a collapse in food supplies and rising prices. Much of the concern is related to shortages in the supply of staple crops such as wheat, corn and oilseeds, which could rise up prices. The invasion also led to higher prices for fuel and related fertilizers, leading to further food shortages and higher prices. The rise in wheat prices resulting from the conflict has strained African countries such as Egypt, heavily dependent on Russian and Ukrainian wheat exports, and raised fears of social protest.

At least 25 African countries import a third of their wheat from Russia and Ukraine, and 15 of them import more than half from these two countries. On February 24, the Chinese government announced that it would cancel all the restrictions on Russian wheat as part of the agreement reached earlier in February. The South China Morning Post called it a potential "lifeline" for the Russian economy, but bad forecast for the Ukrainian economy. On March 4, the Food and Agricultural Organization of the United Nations (FAO) reported that the global food price index reached a historic high in February, having increased by 24% compared to last year. Most of the data for the February report had been collected before the invasion, but analysts say that the prolonged conflict could have a serious impact on grain exports.

"Already in March, the index of world food prices rose by 12.6%. In particular, world prices for grain rose by 17%, vegetable oils by 23%, and sugar by 6.7%. Further growth in world prices for agricultural products is expected," - Alexander Khmelevski, PhD in economic sciences said to the agency of UNIA.

The rational use of resources is a broader indicator that covers all sectors, and the main goal of which is not only the current use of available resources, but also the

prospects for their further use. Humankind is trying to find new sources of resources, such as energy. Currently, food products (wheat and in particular corn) have become energy resources. The use of food resources as energy objectively leads to their reduction, and with population growth, this can threaten widespread hunger. Already today in the world more than 750 million people, (about 9% of the world's population) suffer from hunger or constant under eating. In 2021, the UN reported that 33 states did not have enough food to feed their people. Humankind in the conditions of the scientific and technological revolution, of course, seeks to find other sources for obtaining declining energy resources. For example, in China, a technology has been found for obtaining energy resources from rice straw. An interesting project is obtaining energy from coffee waste. At the same time, today the main source of new energy carriers are food products, which cannot be increased themselves. Therefore, for example, to fill a full tank of an SUV with petrol, it takes as much grain as it is enough to feed one person for a whole year.

Nowadays Ukraine faced some of the major food problems including:

- 1) Disruption of the sowing campaign
- 2) Complicating the export of products to international markets due to the blocking of Ukrainian ports
- 3) Violation of the chains of the agricultural sector (from the production of goods to the sale on the territory of Ukraine).

These main problems will affect further world market prices and inflation will rise. And the lack of energy resources will be the result of these problems.

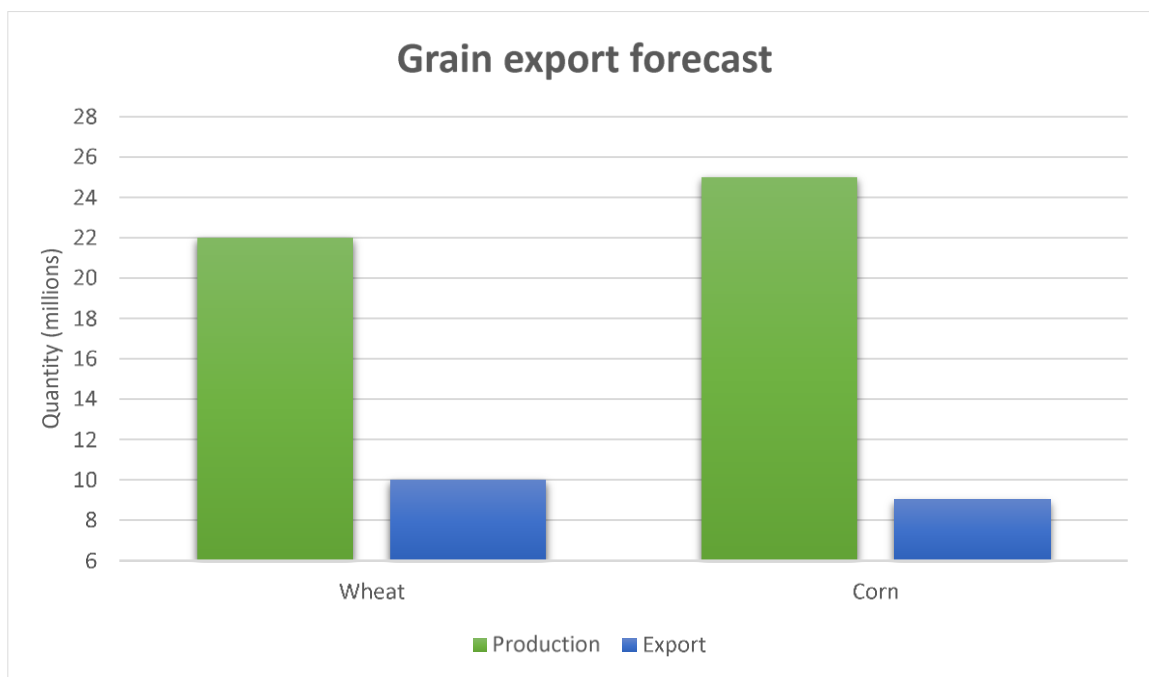
Due to invasion, the US Department of Agriculture (USDA) published a forecast for the export of grain products from Ukraine (Figure 1.):

The 2022 harvest will be very different from the 2021 harvest, which was a record for Ukraine and reached over 106 million tons. Sunflower, buckwheat, sugar beet, rye and corn also belonged to grain crops.

Food and Agriculture Organization of the United Nations (FAO) published information on the growth of the grain price index. It has just increased by 3% in recent weeks; in particular, the cost of wheat rose by 2.1% compared to last month. With a further Russian military invasion, the production and export of food products from Ukraine would be impossible.

The central regions of the country are most involved in agriculture, but the eastern part is also very influential in terms of agriculture.

Kharkiv, Poltava, Donetsk and Luhansk regions have about 20% of the population employed in agricultural sectors. The busiest are Vinnitsa, Cherkasy and Kirovohrad regions, which are the main agricultural regions of Ukraine, in which the mark of the employed population exceeds 30-35%.



Source [1, p. 1-2] Fig.1- Quantitative calculation of grain exports in 2022

Let's consider the sowing areas of Kharkiv. The diagram below (Fig. 2) shows the percentage of the most popular agricultural crops in the sown areas:

Bakhmut region (at the time of writing the article on July 23, 2022 it is not occupied), but due to the fighting in the Donetsk direction, there may be a shortage of salt in the regions of Ukraine due to the impossibility of export during

The eastern part of Ukraine is also known for its salt

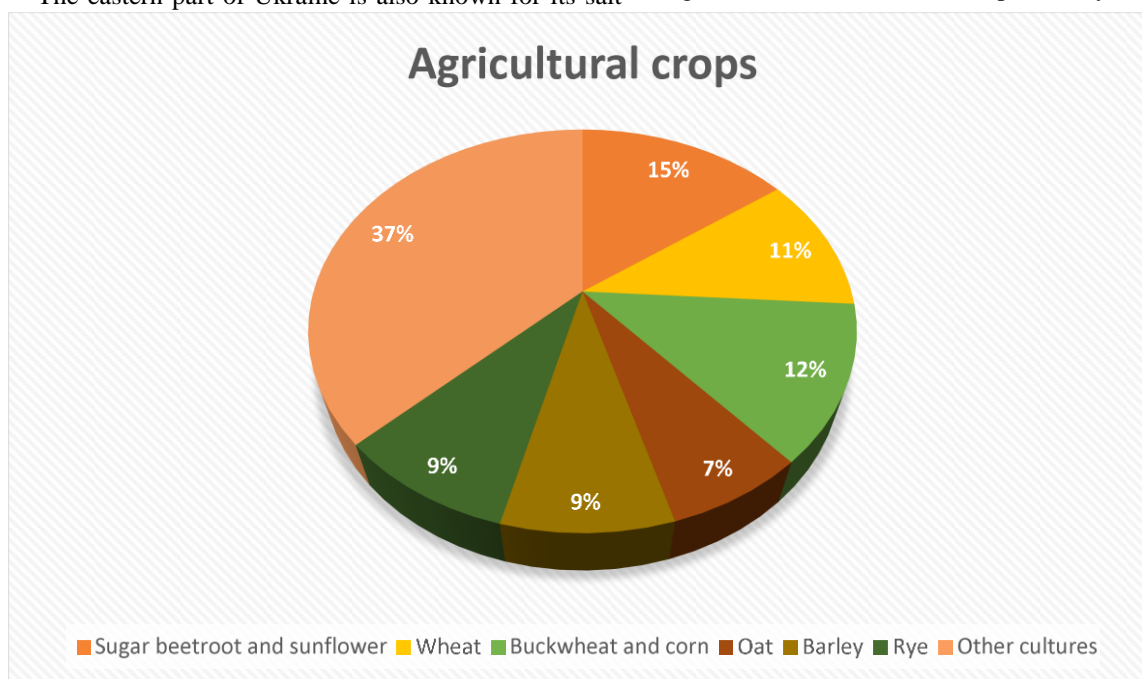


Fig. 2- Percentage calculation of the correlation of the most popular agricultural crops.

reserves. Namely, it is concentrated in the Donbass (the city of Soledar in the Bakhmut region), the Dnieper-Donetsk valley and in the lakes and estuaries of the Black Sea. Of the total volume of salt, only 35% remains on the domestic market, and the remaining 65% is exported. The largest salt deposit is the city of Soledar (Artemovsk) in the

invasion.

The Artyomovskoye deposit has been the leading salt exporter to Russia before February 24, 2022, but due to the sanctions of 2014, a large amount of funds was lost for exporting salt to Russia and since 2016 a limit has been set (up to 170 thousand tons) for the import of salt. In general,

Ukraine ranked 14th in salt exports to the international market as of 2019.

General Director of the Industrial Management Company Valery Kirilko noted that the world began to prepare for interruptions in the supply of wheat and barley.

"Oilseeds and cereals will suffer from the reduction of plantings in Ukraine. Disruptions in the cultivation of spring crops will have potentially serious long-term consequences around the world - the usage of fertilizers is reduced. Corn and sunflower in Ukraine and the wheat crop that was sown last autumn will suffer the most", - Kirilko emphasized.

On March 30, at a UN meeting, United States Deputy Secretary of State Wendy Sherman said that Russia's 2022 invasion in Ukraine, including a naval blockade of Ukrainian seaports and armed attacks on civilian cargo ships, led to a critical food shortage in Ukraine. Ukraine faced with worldwide ramifications.

The causes of the food crisis are also climate changes. Agriculture must become the part of the solution to both climate change and food security.

According to the analytical service of the All-Ukrainian Agrarian Council (UAC), world exports of sunflower oil in the 2021-2022 marketing year amounted to 10.9 million tons, of which Ukraine exported half - 5.4 million tons.

Ukraine takes the second place in the export of barley and rapeseed, the third in the export of rye and sorghum. In addition, Ukraine provides about 10% of the total world grain supply. Moreover, military actions in the East and South of Ukraine limit the ability of Ukrainian farmers to sow future crops, so it is expected that this year the amount of sown Ukrainian land will be reduced by almost a quarter.

The rating of the largest customers was headed by China, buying 65% of Ukrainian corn and 35% of wheat from the total amount of grain imported into the country. The second place is taken by Egypt, which imports 55% of corn and 40% of wheat from Ukraine. The third place is

shared between Indonesia and Spain with the shares of imported Ukrainian grains at 5.8%. Turkey, Bangladesh, Tunisia, South Korea and Libya are also heavily dependent on Ukrainian wheat and corn. Moreover, Libya, Saudi Arabia, Mauritania, Maldives, Singapore and Iraq depend on the supply of meat from Ukraine. The blockade of sea routes in the Black and Azov Seas cut off supply chains. According to the World Economic Forum, the African continent is 60% dependent on grain imports, and the war of the Russian Federation against Ukraine has led to an increase in grain prices by more than 25%. Millions of people are already forced to reshape family budgets, increasing the share of spending on food.

Conclusions. Taking into consideration all the above mentioned, we can conclude that Ukraine is a leading country in the agricultural sector of the economy, which supplies food to the EU, Africa and India. Due to Russia's invasion into Ukrainian lands, many states may be left without the last crumb of bread.

Food prices are rising with each new day, during which there is a war against Ukraine and if the full-scale intervention into Ukraine is not stopped, then the world will face a food crisis.

References

1. U.S. Department of Agriculture: official website [Electronic resource]. – Access mode: <https://www.fas.usda.gov/sites/default/files/2022-06/Ukraine-Factsheet-June2022.pdf>
2. The Economist: official website [Electronic resource]. – Access mode: <https://www.economist.com>
3. World Economic Forum: official website [Electronic resource]. – Access mode: <https://www.weforum.org/agenda/2022/06/war-ukraine-global-food-insecurity-rising/>
4. Ukraine war has stoked global food crisis that could last years: electronic article. – Access mode: <https://www.theguardian.com/world/2022/may/19/ukraine-war-has-stoked-global-food-crisis-that-could-last-years-says-un>

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