Świat Idei i Polityki • 2023, t. 22, nr 2, s. 79–97
World of Ideas and Politics • 2023, vol. 22, no. 2, pp. 79–97
ISSN 1643-8442
DOI: 10.34767/SIIP.2023.02.05

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Ensuring Poland's food security in light of the war in Ukraine

SUMMARY To ensure the food security of a state, four conditions must be met: physical availability of food; sustainability and reliability of food supply; economic availability of food for all social groups; and health suitability of food products and food rations. Poland and Ukraine are major food exporters in Europe and the world. The war in Ukraine caused a significant increase in fuel and fertilizer prices, as well as difficulties in exporting from Ukraine, which resulted in a significant increase in food prices in the world. Difficulties in exporting Ukrainian food products to traditional partners, mainly via the Black Sea, and the EU's suspension of customs duties on goods from Ukraine led to an increase in imports of Ukrainian food products to Poland. The above factors negatively affect the profitability of food production in Poland and the financial stability of Polish farmers. As Ukraine's integration with the EU progresses, Ukraine's food exports to Europe will increase, which will affect Polish food producers. This requires Poland to take appropriate measures both at the national and EU level.

KEYWORDS food security, Poland, war in Ukraine, agriculture, cereal

Introduction

The war in Ukraine has disrupted food supply chains and led to a worldwide surge in the prices of essential commodities such as fertilizers, energy, grain, and consequently, food (FAO, 2022). The parties involved in the conflict are two of the world's largest agricultural and staple food producers. Ukraine

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stands as a prominent global food exporter, contributing to approximately 50% of the world's sunflower oil exports, 16% of corn exports, 10% of wheat exports, and serving as a significant supplier of barley and rapeseed (Matuszak, 2022, p. 3). The conflict in Ukraine has a detrimental impact on food security worldwide, primarily due to the global rise in food prices. For the most vulnerable countries, particularly those in Africa, this translates into an escalation of malnutrition and hunger.

Poland, being a relatively prosperous nation, does not experience such severe consequences. Nonetheless, the conflict in Ukraine also poses various challenges and disruptions in Poland which, given its proximity to Ukraine, serves as a transit country for Ukrainian food exports, some of which reach the Polish market.

The aim of this article is to analyze and assess the impact of the war in Ukraine on food security in Poland. The main research question is whether the war in Ukraine significantly affects food security in Poland. The main hypothesis is that the war in Ukraine has only a limited negative impact on Poland's food security, but it shows that Poland was not prepared for significant disturbances in the global food market. Moreover, the war confirms that the prospective integration of Ukraine into the European Union and the expansion of its food products on the European markets will be a serious challenge for the agricultural sector in Poland.

Literature review on food security

The term *food security* appeared at the World Food Conference in 1974, where it was defined, in the context of food availability, as the availability at all times of an adequate global supply of staple foods to sustain a steady expansion of food consumption and to compensate for fluctuations in production and prices (UN, 1975, p. 14). In the following decades, the definition evolved in the forum of the Food and Agriculture Organization of the United Nations (FAO), taking into account elements such as access to food for all, including the most vulnerable, and the quality of food and nutrition. The definition of the 1996 World Food Summit included these issues:

- Food security at the individual, household, national, regional and global levels [is achieved] when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life (FAO, 1996, p. 1).

The 1996 FAO definition refers to the following dimensions of food security (FAO, 2006, p. 1).

  - Food availability: availability of food in sufficient quantity and quality, whether domestically produced or imported, including food aid;
  - Food access: access of individuals to appropriate food for a nutritious diet;
  - Utilization: utilization of adequate diet, clean water, sanitation, and health care to reach a state of nutritional well-being that meets all physical needs;
  - Stability: constant access to adequate food for a population, household or individual, regardless of sudden crises or cyclical fluctuations.
- Fulfillment of three basic conditions is of fundamental importance for food security (Michalczyk, 2019, according to Jerzak & Śmiglak-Krajewska, 2020, p. 888):
  - Physical availability of food: a guarantee that the national economy can meet at least the minimum physiological needs of the population, if imported food is above this minimum;
  - Economic availability of food: even the most economically vulnerable households can afford food, including under food aid schemes;
  - Food adequacy: adequate quality of food in terms of calories and nutrients provided, and absence of contamination.

In a narrow sense, food security is associated with food self-sufficiency, meaning that domestic production meets all national food needs. In a broader sense, it means the economic and physical availability of food on the domestic market, whether from domestic production or import (Zuba-Ciszewska, 2019). In legal terms, the term *food security* should be distinguished from the term *food safety*. The former primarily refers to the quantitative aspect of food production, while the latter refers to the qualitative aspect of food production (Klikocka et al., 2022). While food security is concerned with the availability of the right amount of food, food safety is concerned with ensuring that this food is safe for the health of consumers. Food security and food safety are affected by actions taken at each stage of the supply chain: suppliers of agricultural production; agriculture; distribution; processing; storage; trade (wholesale, retail, and foreign); gastronomy; and consumption (MRiRW).

The greatest problems in ensuring food security are found in poor regions with high birth rates, resulting in a rapidly increasing demand for food that cannot be met. The consequences of environmental change, including disasters

such as floods and droughts, often make food production increasingly difficult in these regions. As noted by Karolina Pawlak and Małgorzata Kołodziejczak (2020, p. 1): "Poverty, war and conflict, natural disasters and climate change, and population growth are considered to be the main causes of hunger and malnutrition". In 2020, 3,074.2 million people could not afford a healthy diet, an increase of 112 million people from 2019. The majority of these people lived in Asia (1,891.4 million), followed by Africa (1,031.0 million), Latin America and the Caribbean (131.3 million), North America and Europe (19.8 million), and Oceania (0.7 million). This is true even for the cheapest healthy diets that allow maintaining good health and well-being (FAO, 2022, pp. 6, 47, 51).

As emphasized by Eulalia Skawińska and Romuald I. Zalewski (2021), there are a number of changes that need to be adapted to in the context of ensuring food security in the world. These include global changes in consumer behavior. In the European Union, the Common Agricultural Policy (CAP) is responsible for food policy, the overall objective of which is to take measures to ensure food security and food sovereignty of EU countries. The CAP reforms are primarily implemented to achieve this main goal (Jerzak & Śmiglak-Krajewska, 2020). The research institute Fraunhofer ISI (2019) identifies 50 trends influencing the European food sector in the perspective of 2035. These include, among others: new dietary patterns, increased market power of retailers, changing food systems, sustainable production and value chains, the rise of lifestyle diseases, the scandal of food waste, climate change, food safety, new forms of food production, new ways of food storage, and others.

Food security in Poland

Karolina Sowa and Bartłomiej Bajan (2019), based on research for the years 2007–2016, claim that Poland is self-sufficient in all basic food products and simultaneously meets four conditions of food security, namely: physical availability of food; stability and reliability of food supply; economic availability of food; and health suitability of products. According to Michał A. Jerzak and Magdalena Śmiglak-Krajewska (2020), Poland and other EU countries can be considered food-secure in economic terms. In the 21st century, Poland will continue to generate surpluses in food production. This applies to the production of basic cereals, potatoes, vegetables, milk, poultry, beef, and pork, although the production of pork is declining due to low profitability. Poland's food self-sufficiency is confirmed by the foreign trade balance of Polish agricultural products. However,

in Poland, there are food products whose consumption is usually higher than production, including fruits, seeds, and fruits of oil plants, and vegetable oils and fats, despite the growing production of rapeseed. Overall, food production in Poland increased in 2015–2020, which, taking into account the decline in population, means that the country's self-sufficiency in terms of food supply has increased (Klikocka et al., 2022).

Poland's integration into the European Union forced the Polish food industry to adapt to the high EU standards. The need to comply with restrictive requirements in the field of safety, hygiene, product identity and composition, as well as care for the natural environment, plant and animal health and animal welfare, has a positive impact on food security and food safety in Poland (Klikocka et al., 2022). The quality of food produced in Poland and the efficiency of production are at a high level thanks to the transformation of the food production sector in recent decades. This transformation took place thanks to financial support from the Polish government and European Union funds. EU institutions have also provided expert and organizational support, which enabled the adaptation of Polish agriculture to modern requirements and trends (Słapczyński, 2021).

According to the results of the research on food import dependency and food trade dependency conducted in 28 countries of the European Union in the period 1999–2017, Poland was included in the group of ten food secure countries.[2] This is due to the fact that in Poland the average food export dependency index (FEDI) was higher than the average food import dependency index (FIDI). The situation was different for the other 18 EU countries, which were not able to meet the food needs of their societies. In the case of Poland, the FEDI was 3.285820 and the FIDI was 2.541722 (Şahin, 2019). However, a serious problem is that Poland, like other countries of the European Union, depends on imports of raw materials needed for the production of animal feed. Approximately 75% of the demand is met by protein raw materials from imported American soybean meal, which is the basis for the production of feed for pigs and poultry. As a result of the emergence of a serious crisis that could disrupt the import of raw materials, Poland's food security could be undermined (Jerzak et al., 2018).

Poland ranks third in Europe, after France and Spain, in terms of the share of arable land in the total area of the country. The arable land in Poland in 2018 covered 18,608 thousand hectares, or 56% of the country's area, but it was very

[2] This group also included: Belgium, Bulgaria, Denmark, France, Hungary, Ireland, Lithuania, Netherlands, and Spain.

fragmented. The average area of arable land per farm increased from 5.8 hectares in 2002 to 11.3 hectares in 2018, with 51.9% of farms using no more than 5 hectares. This situation allows for less intensive land use and the use of environmentally friendly farming practices (MRiRW, 2019a). In the context of environmental challenges, the issue of organic farms plays an important role. In 2019, organic farms accounted for only 1.3% of all farms in Poland. The vast majority of them were small farms with the size ranging from 1 to 20 hectares (64.8%). While the area of organic farms has increased steadily since accession to the European Union, from about 83,000 hectares in 2004 to about 670,000 hectares in 2013, it started to decrease from 2014 to 509,000 hectares in 2020. These changes were accompanied by an increase and then a decrease in the number of organic farms. The negative change in the trend observed in recent years is due to the fact that some farmers were mainly guided by the goal of obtaining subsidies for organic production and recently did not meet the criteria for maintaining organic production. Other factors include the increase of restrictions and bureaucracy in the case of organic production and the lack of visible prospects for the development of the organic food market in Poland (Kuczuk & Widera, 2021).

In Poland, the centralization of food distribution is taking place rapidly. This is a manifestation of the adaptation of the European food retail model, which is characterized by the emergence of large retail units that concentrate the vast majority of sales at the expense of small stores, the number of which is gradually decreasing. According to Skawińska and Zalewski (2021), the trend towards consolidation in the form of supermarkets or franchise chains can have a negative impact on the accessibility and price of food products.

Franciszek Kapusta (2017) included among the positive changes in the 21st century in terms of food security in Poland an increase in the country's food self-sufficiency, the sustainability and reliability of food supplies, and household income, and the decrease in the share of food expenditures from this income. Among the negative factors, he pointed out the disturbance of the proper proportion of nutrients supplied. Talal Saeed Hameed and Barbara Sawicka (2016) show the disadvantages of food security in Poland, such as seasonal availability of food, infrastructure, road network, low level of consumer education, inadequate sanitation, inadequate health care system, lack of financial support for the food processing sector, the system of land tenure, and climate change. It is also worth mentioning that about 5 million tons of food are wasted in Poland every year. The vast majority, as much as 60% of the wasted food, comes from

households, and primary agricultural production accounts for 15% of the waste (Łaba et al., 2022).

One of the main threats to food security is global warming and its negative consequences, which also affect Central Europe, including Poland. This phenomenon will continue in the coming years, affecting, among other things, the amount of precipitation. Seasonal precipitation is expected to decrease in summer and increase in winter, which may have a negative impact on water resources in Poland, and thus on productivity and consequently on food security. Due to topographical factors, changes in precipitation will affect different regions of Poland in different ways (Sawicka et al., 2022).

On October 15, 2019, the Council of Ministers of Poland adopted *the Strategy for Sustainable Development of Rural Areas, Agriculture and Fisheries 2030* (SZRWRiR 2030). This is the basic strategic document of agricultural policy and rural development in Poland, which presents the main objectives and directions of state policy and intervention. The main goal of the strategy is: "economic development of the countryside, which enables a sustainable increase in the income of its inhabitants, while minimizing economic, social and territorial stratification and improving the condition of the natural environment". (RM, 2019, p. 35) It is complemented by three specific objectives, namely increasing the profitability of agricultural and fishery production; improving the quality of life, infrastructure, and the environment; and developing entrepreneurship, non-agricultural jobs, and an active society. These goals are to be achieved with the help of both domestic and external funds, including the EU budget. The strategy in the perspective of 2030 provides for the following actions (MRiRW, 2019b)

- preservation of family farms as the basis of the agricultural system;
- supporting the sustainable development of farms of all sizes;
- introducing modern technologies, including digital, and innovative solutions, and developing the skills of employees in the sector;
- building a brand of high-quality Polish products, including organic food;
- implementing agricultural and fishery production with solutions that protect the natural environment;
- strengthening cooperation between rural and urban areas for mutual benefit, including access to healthy food for urban residents and decent work for rural residents;
- supporting professional mobility and raising and adapting the qualifications of agricultural workers.

In 2021–2027, Poland will receive 31.2 billion euros from the CAP budget. A significant part of these funds will be allocated to the objectives related to the green transformation of food systems, including changes in the agri-food sector aimed at climate protection. One element of the European Green Deal dedicated to the agricultural sector is the *Farm to Fork* strategy. Its aim is to ensure affordable and sustainable food while implementing requirements related to climate change mitigation, environmental protection and biodiversity, and the development of organic farming. The strategy addresses (Szczepaniak & Szajner, 2022, pp. 1–2):

- sustainable food production;
- food security;
- promoting sustainable food consumption, where changes in eating habits should have a positive impact on both consumer health and the natural environment;
- reducing food waste;
- promoting sustainable food processing, trade, and service practices;
- combating food adulteration in the food supply chain;
- supporting the modernization of agriculture and the food industry.

One of the key elements of the *Farm to Fork* strategy is the effective management of energy, the price of which has risen significantly with the decline in access to Russian energy resources.

The COVID-19 pandemic, which has been spreading since late 2019, has had a negative impact on the agricultural sector and food security and nutrition in Poland. The pandemic led to closures, which resulted in disruptions in food supply chains and an increase in food prices. It also caused a significant global economic slowdown, resulting in lower incomes for a large proportion of consumers who could not afford food of the right quality and quantity (Clapp et al., 2020). In addition, many food industry workers lost their jobs due to lockdowns and other circumstances related to the pandemic. It also caused turbulence in the share prices of companies in the food sector, including those listed on the Warsaw Stock Exchange (Kacperska & Kraciuk, 2021). The Polish government did not leave agricultural producers without help. Support for agriculture related to the COVID-19 pandemic provided by the Agency for Restructuring and Modernization of Agriculture (ARMiR) in 2020–2021 amounted to almost 3.0% of the Polish agricultural budget (excluding state expenditure on the Agricultural Social Insurance Fund – KRUS), 3.4% of total expenditure and over 9.3% of expenditure on all measures of the Rural Development Program 2014–2020.

In addition, agricultural producers could use general support programs intended for all entities (Jędruchniewicz, 2022).

The impact of the war in Ukraine on food security in Poland

The war in Ukraine disrupted food supply chains and caused an increase in the prices of fertilizers and energy, and consequently food prices. According to FAO (2022), the war in Ukraine has serious implications for food security and nutrition in many countries around the world. This results from the turmoil in global food markets, including in the context of channels of trade, production, and prices. Food security is linked to energy security, whose management model has been based on the availability of fossil fuels at relatively low prices. Turmoil in this area has caused food prices to rise to socially unacceptable levels. The war in Ukraine has led to huge disruptions in the supply of energy resources and the associated periodic increase in their prices. This increase translates into an increase in the prices of key components for the functioning of modern agriculture, such as (Buko et al., 2021, p. 2):

- industries producing fertilizers and pesticides;
- industries producing agricultural machinery and vehicles;
- distribution of chemicals and agricultural machinery, animal feed, fuel, and agricultural products;
- service infrastructure for agricultural machinery and vehicles.

According to the Central Statistical Office of Poland (GUS), in March 2023 the prices of food and non-alcoholic beverages in Poland were 24% higher than in March 2022. It was much higher than the EU average, where the increase in food, alcohol, and tobacco prices in the same period amounted to 15.7% (Rudke, 2023). As part of the so-called anti-inflation shield, on February 1, 2022, the Polish government reduced the VAT on basic food products from 5% to zero, including meat and fish, dairy products, vegetables and fruit, cereal products, and some beverages. In June 2023, the zero VAT on food was extended until the end of the year. In 2022, overall inflation in Poland was 14.4% and the average wage increase was 12.1%. This means that real wage growth fell by 2.3%, which was the largest decline in consumer wealth since 1990 (*Dziennik Gazeta Prawna*, 2023). Considering that food and non-alcoholic beverages account for about ¼ of household expenditure (on average) (Wiśniewska, 2017), the significant increase in food prices has reduced the accessibility of food, especially high-quality food, for Poles, mainly among the lowest-income groups.

Due to the Russian aggression against Ukraine, there was a risk that Ukraine would be able to produce much less food than in previous years. For this reason, in February 2022, there was a significant increase in grain prices on world markets, including an approximately 40% increase in wheat prices (Trading Economics). After the outbreak of the war, the main problems identified were: an estimated 30% less arable land in Ukraine than in 2021, fuel shortage, limited possibility of harvesting in the occupied territories, and confiscation of grain by the occupier. In 2022, about 53 million tons of grain were harvested in Ukraine, 33 million tons less than in the record year of 2021. The most important problem was Russia's prevention of food exports by blocking the ports on the Black Sea and the Sea of Azov. In previous years the largest part of Ukrainian food, mainly grain and vegetable oils, was exported through these ports (Matuszak, 2022). The export difficulties are a consequence of the Kremlin's strategy to intimidate the world with the specter of global famine and to force the West to the negotiating table regarding Ukraine. The importers of Ukrainian grain are mainly the countries of Southeast Asia, the Middle East, and North Africa, for which the conflict in Ukraine is not of key importance and they do not want to suffer from it, so the Kremlin wanted to use their pressure on the West. The consequence of the blockade of the Black Sea basin is the necessity for Ukraine to use alternative food export routes, mainly through Poland and Romania. Ukrainian food should be transported only in transit through these countries, mainly to Africa and Asia, which was not fully implemented, as part of the food remained in the transit countries. The Romanian port of Constanța on the Black Sea began to play the role of the main transshipment point for Ukrainian agricultural products. The Romanian authorities, with the support of the European Union, initiated the modernization of the port and access infrastructure in order to double the volume of Ukrainian grain transit. The Polish authorities have not decided to make such investments in the Baltic Sea ports.

Between January and May 2022, imports of agri-food products from Ukraine to Poland increased almost 2.5 times compared to the same period in 2021, reaching a value of 676 million euros. At the same time, food exports from Poland to Ukraine increased by only 6.4%, reaching a value of 337 million euros. This resulted in a negative trade balance for Poland of EUR 339 million, while in the corresponding period of 2021, the balance was positive for Poland at EUR 52 million. At the same time, the export of agricultural and food products from Poland to Russia and Belarus collapsed.

In the following months, the problem of increased imports of grain from Ukraine arose. Economically, cereals are the most important group of crops in Poland, and grain is one of the main raw materials in the Polish food industry. Ensuring self-sufficiency in cereals is a cornerstone of Poland's food security, and supplying the domestic market with the right amount of cereals and their products is of fundamental importance for the nutrition of Poles. Cereals occupy about 2/3 of the arable land in Poland, and in the European Union, Poland is the third largest producer of cereals after France and Germany (Łaba et al., 2022).

On May 30, 2022, the European Union abolished customs duties on goods from Ukraine for one year, which created the risk of a further increase in food imports from this country to Poland. Therefore, in July, the Polish People's Party (Polskie Stronnictwo Ludowe – PSL) proposed a bill to prevent the sale of Ukrainian grain in Poland by requiring the carrier to pay a deposit at the border, which would be returned after the grain left Poland. However, the Polish government, dominated by the Law and Justice Party (Prawo i Sprawiedliwość – PiS), ignored the problem and the bill was not processed. According to the data of the National Revenue Administration of Poland (KAS) in 2022 Poland received 2.45 million tons of grain from Ukraine (an increase of 2.39 million tons compared to 2021, which is almost a 4000% increase), which accounted for 6.8% of domestic production, which last year amounted to over 35 million tons of grain. In the same year, 9.2 million tons of grain and grain products were exported from Poland, including about 3.88 million tons of corn and about 3.64 million tons of wheat. However, agricultural organizations claim that the official data does not reflect the reality and in practice much more grain was delivered from Ukraine to Poland. They argue that grain entered the country under other names, for example, as mill cleaning material (Kowalczyk, 2023). According to Tomasz Obszański, president of the Solidarity Union of Individual Farmers (NSZZ RI „Solidarność"), from the end of 2022 to the end of March 2023, about 3 million tons of grain from Ukraine entered Poland by train and truck. Most of it was to be bought by Polish feed producers, but also by flour mills, as it was about half the price of Polish grain (Kacprzak & Zawadka, 2023).

The deputy chairman of the Ukrainian Agrarian Council, Denys Marchuk, claims that Poland and Romania are mainly transit countries and only a small part of Ukrainian grain goes to their markets. According to him, the fall in prices of grain and oilseeds is a global trend, not a consequence of the purchase of cheaper agricultural goods from Ukraine (PAP, 2023). In fact, the price

of grain on the world markets began to fall sharply in the middle of 2022. Cereal purchase prices in Poland were at the level of prices on the world markets, including the French International Futures Market (MATIF). The reasons for the fall in prices were the improvement in the supply and demand situation, the reduction in market uncertainty, and the expectation of higher harvests in the 2023 season. According to the estimates of the US Department of Agriculture, in 2023 Ukraine will export 40.5 million tons of grain, including 14.5 million tons of wheat and 26 million tons of corn (Kowalczyk, 2023). This situation shows that Poland was not prepared for external shocks and significant price fluctuations. An additional problem is that the future integration of Ukraine into the European Union may pose a serious threat to the agricultural sector in Poland.

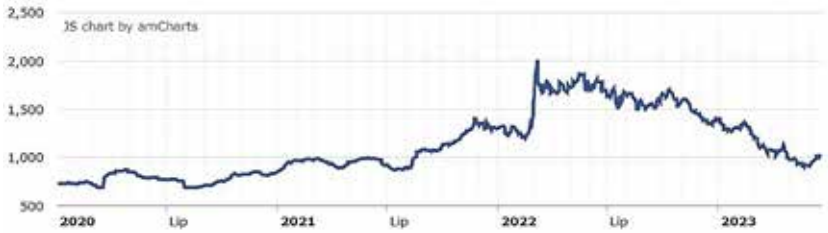

Chart 1. The average price of wheat for consumption in Poland in 2020–2023 (in PLN net per ton)

Source: Wheat price quotes, https://www.agrolok.pl/notowania/notowania-cen-pszenicy.htm.

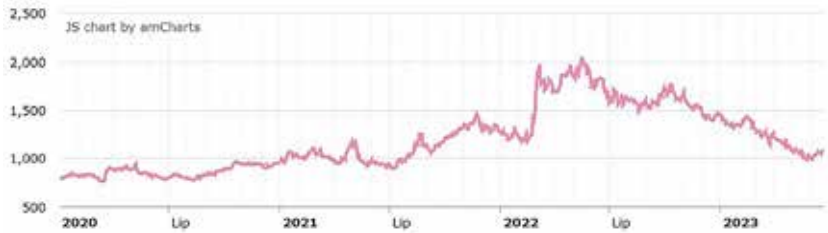

Chart 2. Price of wheat for consumption on MATIF in 2020–2023 (in PLN net per ton)

Source: Wheat price quotes, https://www.agrolok.pl/notowania/notowania-cen-pszenicy.htm.

Unrest appeared among Polish farmers because they did not sell grain, hoping for an increase in prices, which in practice began to fall sharply. For example, in less than a year, the price of wheat for human consumption fell from around PLN 2,000 to around PLN 900 per ton (depending on the region and quality). Therefore, on April 5, the Minister of Agriculture, Henryk Kowalczyk, who a few

months earlier had assured that the price of grain would increase, resigned and was replaced by Robert Telus. On April 15, the Polish government introduced a ban on the import of Ukrainian grain, and on April 21, a ban on the import of other agricultural products, allowing only their transit. Minister Telus informed that between March and May of 2023, a total of over 3 million tons of grain were exported from Poland, and at that time 569,000 tons of grain were imported from Ukraine, including only 49,000 tons in May. At the turn of April and May, the European Commission reached an agreement with Poland, Romania, Bulgaria, Hungary, and Slovakia on Ukrainian agricultural products, and on May 2 introduced a temporary ban on the sale of Ukrainian wheat, corn, rapeseed, and sunflower in these countries. At the same time, these countries lifted unilateral bans on imports of Ukrainian agricultural products. On June 5, the European Commission regulation was extended for another month (Wesołowska & Boroń, 2023). On September 15, the EU ban on imports of Ukrainian agricultural products expired, prompting Poland, Slovakia, and Hungary to reintroduce unilateral import bans, with Poland extending the ban to products processed from these four grains and Hungary adding up to 20 additional products to the list. This was due to the fact that these countries had not developed effective mechanisms for the transit of Ukrainian agricultural products. This led to retaliatory measures by Ukraine, which filed a complaint against these countries with the World Trade Organization (WTO). In Poland, Kyiv's reaction was considered exaggerated and shocked the authorities, especially since Poland is one of the main donors of aid to Ukraine and Ukrainian refugees. The decisions that exacerbated the crisis between Poland and Ukraine were also influenced by internal factors, including the election campaign in Poland and President Zelenskiy's fight against oligarchs in Ukraine.

In mid-April, the Polish government announced aid for farmers, which is expected to cost the state budget between 5 and 10 billion PLN. As part of the aid, it was decided to pay compensation of up to PLN 1,400 per ton to farmers who sold wheat between April 15 and June 15, 2023. Support will also be granted to producers of maize, rye, barley, oats, triticale, mixtures of cereals, and rapeseed (colza) seed. The support is granted to farms of up to 300 hectares. Subsidies will also be granted to farmers who purchased mineral fertilizers between May 16, 2022 and March 31, 2023. Fuel subsidies for farmers and the amount of excise duty refund for its purchase have also been increased (KPRM, 2023). The Polish government decided to take these measures to protect both its own interests and Poland's food security. The first reason was the upcoming parliamentary

elections in the fall of 2023, with farmers being an important electoral base for Law and Justice. The second reason is that the unprofitable production of grain, which is the main agricultural product in Poland, may lead many farmers to reduce the area under cultivation or abandon its production. This could have a very negative impact on Poland's food security. The European Commission also came to Poland's aid, deciding on June 26 to grant farmers from Poland, Romania, Bulgaria, Hungary, and Slovakia 100 million euros in compensation for increased grain imports from Ukraine, of which Poland will receive 40 million euros. The EC also agreed to increase the pool from national budgets by 200 percent, which in the case of Poland means 120 million euros.

An important food safety issue is that grain imported from Ukraine was not properly controlled for quality and phytosanitary requirements, including the presence of pesticides and heavy metals. The grain was subjected to organoleptic testing, which was not sufficient. It was only in February 2023 that Ukrainian grain was classified at the border and given appropriate codes, which was possible thanks to the purchase of chromatographs for quality analysis (Kacprzak & Zawadka, 2023). According to the data of the National Revenue Administration, in 2022, 93,000 tons of cereals declared not for consumption but for combustion arrived in Poland from Ukraine, which accounted for approximately 3.8% of the total import of cereals from Ukraine. Of this, 58,000 tons were corn and 31,000 tons were wheat (Kowalczyk, 2023). Farmers' representatives, however, question these data, believing that the volume of imports of grain not intended for consumption was much larger since it was imported as consumption grain. In Poland, cases of non-consumption grain being used for the production of feed and flour began to emerge. KAS initiated 16 inspections of companies suspected of selling this grain from Ukraine as consumption grain, including the largest flour producers in the country. In mid-May 2023, teams of KAS prosecutors initiated five tax fraud investigations (Ciszewski, 2023). Non-consumption grain is suitable, for example, for the production of pallets and biofuels, but not for the production of food and feed. The purchase of Ukrainian grain in Poland could also have a negative impact on the perception of Polish grain on global markets, due to fears that it might be of Ukrainian origin. This is problematic because Ukraine does not apply the restrictive requirements of the European Union in the production of cereals.

Conclusions

Ensuring food security is one of the key challenges of the modern world. Achieving this goal is becoming increasingly difficult in the face of global population growth and adverse climate change. Additional turbulence is caused by direct human activity, including armed conflict, as exemplified by the war in Ukraine. The country is one of the world's largest food producers, with implications for global food security. Poland is in a relatively good position in terms of food security. Because Polish society is relatively rich and Poland is a major food producer, there are no major problems with access to food in the country. However, the war in Ukraine has contributed to a global increase in food prices, which has also been felt in Poland. Households with lower incomes have to reduce their food expenditures, which results in the choice of lower-quality food. An additional problem was the fluctuation of grain prices during the war in Ukraine. There was also a threat to consumer health associated with the limited control of imported Ukrainian grain. The Polish authorities have introduced a number of subsidies and other forms of support for farmers, but these do not solve the problem structurally. The unprofitability of production may lead to a decrease in the area under cereal cultivation in Poland, which would have a negative impact on the country's food security. The prospective integration of Ukraine into the European Union poses another threat to Polish agriculture that may not be able to compete with agricultural products from Ukraine, especially since large investments by Western companies in mass production are expected there. Polish farmers will have to adapt to this situation, including by switching to high-margin production. On the other hand, Polish food producers have the opportunity to buy Ukrainian agricultural raw materials and process them, also with a high margin. However, they will have to compete with entrepreneurs from other countries.

Additional information

The article was prepared as part of an internship at the Center for International Cooperation and Development Studies (IDC) at the Department of Comparative Governance and European Studies, Faculty of Political Science, University of Bucharest, Romania.

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Zapewnienie bezpieczeństwa żywnościowego Polski w świetle wojny w Ukrainie

STRESZCZENIE Aby zapewnić bezpieczeństwo żywnościowe państwa, muszą zostać spełnione cztery warunki: fizyczna dostępność żywności; trwałość i niezawodność dostaw żywności; ekonomiczna dostępność żywności dla wszystkich grup społecznych; oraz odpowiedniość zdrowotna produktów spożywczych i racji żywnościowych. Polska i Ukraina są ważnymi eksporterami żywności w Europie i na świecie. Wojna w Ukrainie spowodowała znaczny wzrost cen paliw i nawozów, a także trudności w eksporcie z Ukrainy, co przełożyło się na znaczny wzrost cen żywności na świecie. Utrudnienia w eksporcie ukraińskiej żywności do tradycyjnych partnerów, głównie przez Morze Czarne, oraz zawieszenie przez UE ceł na towary z Ukrainy spowodowały wzrost importu ukraińskiej żywności do Polski. Powyższe czynniki negatywnie wpływają na opłacalność produkcji żywności w Polsce i stabilność finansową polskich rolników. Wraz z postępującą integracją Ukrainy z UE będzie wzrastał eksport ukraińskiej żywności do Europy, co odbije się na polskich producentach żywności. Wymaga to od Polski podjęcia odpowiednich działań, zarówno na poziomie krajowym, jak i unijnym.

SŁOWA KLUCZOWE bezpieczeństwo żywnościowe, Polska, wojna w Ukrainie, rolnictwo, zboże

Date of submission of the article: 22.06.2023; date of acceptance of the article: 22.10.2023.