

The impact of the Russian aggression against Ukraine on global food security and policy actions

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1. Introduction

The Russian aggression against Ukraine that began in February 2022 has had a major impact not only on Ukraine's agricultural production and exports but also on global food supply and demand and on food security. International Society is concerned about the state of global food security. The world's undernourished population has been growing since 2019 due to the impact of COVID-19, and the aggression against Ukraine is further worsening the state of global food security as represented by the undernourished population. This study examines the impact of the aggression against Ukraine on food security and the policy actions that International Society should take.

2. The impact of the aggression against Ukraine on global food security

Russian and Ukraine are leading global producers and exporters of such products as wheat, barley, and sunflower oil, and trends in their production and exports of these products have a major impact on global food markets. In particular, among global export volumes for FY2019–2021, Ukraine accounted for 9.4% of wheat, 15.2% of barley, 45.9% of sunflower oil, and 14.3% of corn (USDA-FAS, 2023). The Russian aggression against Ukraine since February 2022 poses major risk factors for global food supply and demand. Specifically, these risk factors include the decline of Ukraine's production and exports of grains and other commodities, insufficient agricultural investments by Ukraine and shortages in its agricultural labor force, the global increase in the prices of grains and other commodities, and increases in the prices of chemical fertilizers, fuels, and other production inputs to satisfy the factors of food security.⁽¹⁾

The term "food security" as it is currently used internationally consists of the four major factors of availability, access, utilization, and stability. Global food supply and demand corresponds to availability in the above definition of food security, and it is the factor that is the most basic and essential. Additionally, the stability of international food prices, which represents balanced conditions for global food supply and demand, corresponds to the key factors of access and stability in this definition of food security. However, it should be noted that these are not the only factors.

In food security, the most frequently used indicator worldwide to represent the state of global food security is the undernourished population. According to FAO et al. (2023), the number of people worldwide suffering from starvation in 2022 was estimated to be 735.1 million, and the undernourished population's share of the global population, which declined from 12.1% in 2005 to 7.5% in 2017, reversed direction in 2018 to reach 9.2% in 2022. In particular, it is estimated that during the COVID-19 pandemic from 2019 through 2022, the undernourished population grew by 122.0 million people (FAO et al., 2023). By region, South Asia had the largest undernourished population, followed by sub-Saharan Africa. However, as a percentage of the population, in 2022, the undernourished population comprised 16% of South Asia's total population, while in sub-Saharan Africa, it comprised 23%, meaning that almost 1 in 4 people in that region were suffering from hunger (FAO et al., 2023).

Rising food prices have different effects on households in developed countries and developing countries due to differences in income, Engel's coefficient, and the ratio of consumption expenditures for staple food. Because the ratio of expenditures for staple food to income tends to be higher in developing countries than in developed countries, even if food price increases at the same rate, it will tend to have a more adverse impact in developing countries. Moreover, even within the same country, Engel's coefficient and the ratio of expenditures for staple food will differ by income levels; thus, the lower-income groups will tend to be more affected than the higher-income groups. Therefore, it should be noted that rising food prices tend to affect developing countries more than developed countries and the lower income classes more than the higher income classes.

The estimates conducted in 2022 by FAO et al. projected that sub-Saharan Africa, the Middle East, and northern Africa would be more vulnerable than other regions to the shock from lower exports of global wheat, corn, and vegetable oil caused by the aggression against Ukraine (FAO et al., 2022). Since the ratio of food consumption expenditures in households is especially high in sub-Saharan Africa, the Middle East, and northern Africa, and since these regions are dependent on wheat imports from Russia and Ukraine, they are the regions that are the most vulnerable to shocks from lower global exports of wheat, corn, and vegetable oils. International cooperation for the food and agricultural sector should therefore focus on these areas going forward.

3. Policy actions regarding global food security

Regarding Ukraine, which is being subjected to Russian aggression, there needs to be emergency food assistance and other forms of humanitarian aid and international aid and cooperation that will enable the prompt recovery of agricultural investments in

production and of the supply of agricultural input goods. In addition, for developing countries that are becoming increasingly vulnerable to food insecurity, emergency food assistance needs to be provided and agricultural investments need to be made on a more continuous basis than before. Also needed are assistance and support programs that will alleviate the impact of rising food prices on lower-income groups, including those in developed countries, as well as assistance programs, better food supply chains, and flexible stockpile releasing systems during food shortages in order to alleviate the higher agricultural production costs caused by rising prices for chemical fertilizers, energy, and feed. Furthermore, going forward, there also needs to be stricter supervision of export restriction measures for food and chemical fertilizers, which will likely make it more difficult to secure global food security.⁽¹⁾

In addition to these policies, it is also necessary to have flexible biofuel policies for which agricultural products are the major feedstock. Such biofuels as bioethanol and biodiesel are used as fuels for automobiles and are mixed in with gasoline and diesel fuel. In 2019–2021, 95% of the world's biofuels were produced from feedstock derived from agricultural products (OECD-FAO, 2022), and recent data on the percentage of global food demand coming from the production of biofuels account for 20.6% of the demand for rapeseed oil (FY2021), 19.5% of the demand for soybean oil (FY2021), 19.5% of the demand for production volume of sugarcane (FY2020), 19.0% of the demand for palm oil (FY2021), and 13.3% of the demand for corn (FY2021) (Koizumi, 2023). Therefore, even though different agricultural products are used as feedstock, the fact is that the production of biofuels is affecting global food supply and demand.

Currently, many of the world's countries and regions have introduced biofuel programs that set mandatory targets for the use of biofuels and mandated blend rates to sustain the demand for agricultural products. However, such policies imply that these governments have guaranteed demand for biofuels. As long as this demand is guaranteed by the government, demand for biofuels will function to prop up the prices of agricultural commodities and the price structure will be one in which it is difficult to decrease the prices of agricultural products. Over the medium to long term, biofuel policies will put floor prices on agricultural products, and we can expect that preventing these prices from declining will have the effect of stabilizing the incomes of the producers. However, the *floor price effect* of biofuel policies will have a negative impact on the undernourished population when prices of agricultural products soar, and there is a risk that it will be difficult for countries to have food security. Therefore, there is a need for policies that can quickly and flexibly lower the mandated blend rates of biofuels in gasoline and diesel fuel in response to price movements for agricultural products when the prices of agricultural commodities spike. Brazil, Argentina, Malaysia, and Colombia have managed these programs with flexibility when the prices of agricultural products spiked. However, even though the United States and the EU have programs that use policy means to reduce the volumes used in biofuels, they have no track record in using them with flexibility, and Indonesia does not have any such policy measures. Therefore, the United States, the EU, and Indonesia, which are the main producers of biofuels, urgently need to adopt policy responses that enable them to quickly and flexibly make downward adjustments in the blend rates and volumes of biofuels in response to agricultural product prices, which are the feedstock for biofuels.

4. Conclusion

The aggression against Ukraine since February 2022 has decreased Ukraine's production and export volumes, and further increases in food prices and the stagnation of economic growth can worsen the food security situation in developing countries, which are becoming increasingly vulnerable. The world's undernourished population and the associated term starvation are intimately related to both famine and the issue of poverty. Reducing hunger requires not only increasing the production of food but also eliminating poverty so that people will have enough income to purchase the food that they need, and initiatives are needed that will change conventional social practices and other factors that prevent the equitable distribution of food among people. Overcoming the world of hunger is a long-cherished desire of humankind, and achieving the sustainable development goal of zero hunger by 2030 requires that the related UN and international institutions form strong collaborative ties with all stakeholders concerned in all related countries and governments and continue to make ceaseless efforts going forward in that regard.

Note:

(1) See Koizumi (2023) for details.

[References]

- Food and Agricultural Organization of the United Nations (FAO), International Fund for Agricultural Development, United Nations Children's Fund, United Nations World Food Programme, and World Health Organization (2022) The State of Food Security and Nutrition in the World 2022, <http://www.fao.org/publications/sofi/2022/en/> (accessed on August 31, 2023).
- Food and Agricultural Organization (FAO), International Fund for Agricultural Development, United Nations Children's Fund, United Nations World Food Programme, and World Health Organization (2023) The State of Food Security and Nutrition in the World

2023,

<https://www.fao.org/documents/card/en/c/cc3017en> (accessed on September 1, 2023).

Koizumi, T. (2023), The Impact of the Russian Aggression against Ukraine on Global Food Security and Policy Responses. Policy Research Institute, Ministry of Agriculture, Forestry and Fisheries, research materials for Project Research on Major Countries' Agriculture Policies and Food Supply and Demand, 4: 1-24.

https://www.maff.go.jp/primaff/kanko/project/attach/pdf/230331_R04cr04_02.pdf (accessed on September 5, 2023).

OECD-FAO (2022) OECD-FAO Agricultural Outlook 2022-2031.

<https://www.fao.org/3/cc0308en/cc0308en.pdf> (accessed on September 8, 2023).

U.S. Department of Agriculture, Foreign Agricultural Service (USDA-FAS) (2023) Production, Supply and Distribution Online.

<https://apps.fas.usda.gov/psdonline/app/index.html#/app/home> (accessed on August 30, 2023).