

# International experience in supporting agriculture in the post-pandemic period

Makhanova Ainur\*, Smagulova Gulzhihan

Al-Farabi Kazakh National University, Almaty, Kazakhstan

\*E-mail: [shugyla@gmail.com](mailto:shugyla@gmail.com)

DOI: [10.26577/SEDGCh.2023v1ca10](https://doi.org/10.26577/SEDGCh.2023v1ca10)

## Abstract

The purpose is to study and analyze the international experience of supporting agriculture in the post-pandemic period. Methods: the theoretical and methodological basis of the research is the system-structural and system-functional approaches to studying the world experience of supporting agriculture in the post-pandemic period, which requires the use of various methods of scientific analysis, such as monographic, comparative, statistical, mathematical and economic analysis and others. Results: as international experience shows, agriculture cannot be effective and successful without practical support. In view of the important role of agriculture in ensuring food security, the leading countries of the world invest heavily in supporting agricultural producers, thereby regulating the food market and contributing to the social, economic and environmental development of rural areas. As a result, a new agricultural policy is being introduced in the countries of the European Union, which is aimed at the sustainable future development of agricultural producers, providing targeted support to small farms and giving more flexibility for adaptation in post-pandemic conditions. Conclusion: in most countries, support for agriculture includes support for the agricultural sector: the provision of various kinds of subsidies, subsidies, benefits, etc. Support of agriculture in the post-pandemic period contributes to the growth of agricultural production in the countries of the world.

**Keywords:** international experience, agriculture, in the post-pandemic period, income, farmer, socio-economic development, production, policy, environmental, strategic plans, eco-schemes, consulting services

**JEL codes:** Q1, Q14, Q18

## 1 Introduction

The global coronavirus pandemic has affected all economic sectors, including agriculture in Kazakhstan, which was significantly affected by three main factors: the depreciation of the tenge, fluctuations in demand, and the disruption of the global supply chain due to restrictions on movement

between certain countries. The pandemic has also seriously affected support for agriculture around the world.

The global impact of the COVID-19 epidemic on agriculture requires an immediate and long-term response. First of all, in order to develop the necessary actions, it is necessary to analyze and understand the direct consequences of the current pandemic on agricultural and food systems. As a result, it is necessary to properly understand the risks, vulnerability, resilience and systemic shifts of agricultural systems in order to adapt to the current situation. Therefore, a thorough literature review and analysis is needed to help relevant authorities around the world develop appropriate policies to deal with the impacts of COVID-19 on agriculture.

In the post-pandemic period, the agricultural management and support system is a rather complex process that affects farmers' incomes, agricultural production, the agricultural market, the rural environment, and relations between farmers and other organizations. Today, in many developed countries, agricultural support includes state support for the agricultural sector, such as: support for various types of subsidies, benefits, grants, etc., for example, in some countries, state investments in agriculture exceed the market value of agricultural goods by 1,5-2 times.

Support for agricultural producers in the post-pandemic period contributes to the development of agriculture in the countries of the European Union, the USA, Canada and other food exporting countries. In the countries of the European Union, agricultural subsidies average 49%: Norway - 77%, Finland - 71%, Sweden - 59%; Japan - 66%, etc. [1]. Therefore, issues related to international experience in supporting post-epidemic agriculture in the post-pandemic period are becoming especially relevant today.

The main purpose of this study is to assess international experience in supporting agriculture in the post-pandemic period.

Therefore, to achieve the above goal, the following tasks were set and performed:

- analyzed in the post-pandemic period support for agriculture, which is carried out by the European Commission in the EU countries;
- reviewed and evaluated the new Common Agricultural Policy (CAP) of the European Union;
- considered in the post-pandemic period the international experience of supporting agriculture in the USA and Canada.

## **2 Literature review**

Popescu GC, Popescu M [2] conducted a full review of the impact of the COVID-19 pandemic on European agricultural systems, compliance with restrictions and relationships with authorities and made some recommendations for managing such circumstances in the future. They also

provided a clear picture of the difficulties and challenges European farmers have faced during the pandemic. Farmers had problems with farming technology and sales of agri-food products. They stated that agricultural systems in the EU are weak and that the sector needs to be actively monitored and supported in order to maintain food security during the crisis.

MacArthur and McCord [3] emphasized that this could affect key agricultural factors affecting yields such as fertilizer, seeds and water. In Europe, the production, distribution and marketing of fruits and vegetables have been particularly affected by the pandemic. Stay-at-home restrictions in Europe have affected food prices and distribution, which may affect food security [4]. Restrictions during the pandemic have led to fragmentation of food distribution systems. Accordingly, central banks and government agencies have taken measures to stimulate the economy [5]. Deaton, B. J. in a team of researchers examined the impact of the COVID-19 pandemic on Canada's food security using three variables: farm financial stability, transport, and international exchange. Capital flows, maintaining transport and international exchanges are strategic measures to ensure food availability in the long term [6].

While many studies have focused on the potential impact of the COVID-19 pandemic on the agricultural sector, very few have attempted to explore the impact of the pandemic on agriculture through direct interviews with local farmers and analyzes of their responses, impressions and expectations.

### **3 Material and research methods**

The object of the study is the world experience in supporting agriculture. The theoretical and methodological basis of the study is the system-structural and system-functional approaches to studying the world experience in supporting agriculture in the post-pandemic period, which requires the use of different methods of scientific analysis, such as monographic, comparative, statistical, mathematical and economic analysis and others [7; 8]. By applying the generalization method, the main directions for supporting agriculture in foreign countries were determined. Using the methods of abstract-logical tools, the main conclusions and proposals were formulated. The publication is based on official data from The new common agricultural policy: 2023-2027.

### **4 Results and its discussion**

Today, agriculture is an important industry that contributes to ensuring food security and stable socio-economic development of the country, especially in the post-pandemic period. The uniqueness of the agricultural sector lies in the fact that it is a source of raw materials for other industries.

The significantly high level of processing and availability of agricultural production ensures food security in the country.

Impact of COVID-19 on agricultural systems. The concerted efforts of the world to suppress the virus by containing human activity have irresistibly triggered financial shocks and costs that have affected the agricultural and food production system. A sharp decline in demand for commercial and restaurant products, associated with a reduced workforce and less storage capacity, has led to farmers throwing away much of their produce. The quarantine is seriously affecting the availability of labor for time-limited agriculture such as picking vegetables, crops and fruits. These effects are penetrating deep into the food production sector and the global economy as the problem worsens day by day. The impact of the covid-19 pandemic on the agricultural sector can be divided into five categories: food security, labor availability, agricultural system resilience, agricultural system interconnection, and others [9]. The impact of COVID-19 is graphically shown in Figure 1.

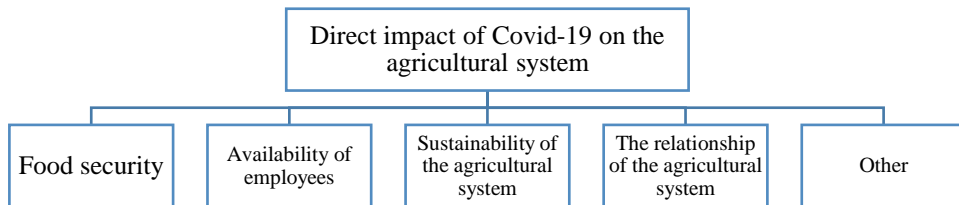


Figure 1 The impact of COVID-19 on the agricultural system\*

*\*Note: compiled based on the source [10]*

**Food security.** Due to the loss of income and temporary workers, the purchasing power of food is reduced. Panic buying destroys the market supply system. People store up more food than they require, for fear of not having time. Perishable products, such as fruits, vegetables and milk, deteriorate due to transportation restrictions. Food security means having unrestricted access to food sufficient to meet their basic needs. If immediate action is not taken, a food disaster is looming, hurting the most vulnerable people. Keeping global food supply systems healthy and limiting the impact of the pandemic on the food management system must be a priority. Short-term crises are mitigated by social services, which act as an umbrella. About 820 million people worldwide who suffer from chronic hunger and do not receive enough calories for a normal life belong to the first vulnerable group [11]. This group of people cannot tolerate disruption to livelihoods or access to food that could be caused by the COVID-19 outbreak. Smallholder farmers are the second vulnerable group as they may not be able to work their land or go to markets to sell their crops or buy seeds and other essential commodities.

**Availability of labor force.** The economic and social shock caused by the COVID-19 epidemic is a global phenomenon that has affected people from all walks of life. Restrictions on transport hindered the movement of workers, severely affecting the horticulture, livestock and food industries. Plantation and harvesting is difficult due to a shortage of skilled workers. Skill development is difficult due to isolation. The impact of COVID-19 on worker availability varies by nature of employment, location, type of work, and age of workers. Workers have become insecure due to a lack of formal security and recognition, a social security system, and limited benefits from institutional sources [10]. A number of major European agricultural producers, including France, Germany, Italy, Spain and Poland, are in a particularly vulnerable position. More than a quarter of the food produced in the country depends on about 370,000 permanent seasonal migrant workers, according to Coldiretti, the Italian organization that represents farmers. Some 100,000 agricultural workers may not be able to come to Italy this year, a figure that could be double that of France. In Germany, where some 286,000 seasonal migrant workers work each year in fruit, vegetable and wine production, the government is exploring various ways to mobilize enough workers for the harvest, including direct flights for agricultural workers and the issuance of temporary work permits for asylum seekers. The European Commission issued practical guidance on 2 April 2020 to Member States to facilitate cross-border travel of seasonal workers in critical occupations, including food workers, while taking all necessary measures to prevent the further spread of the pandemic [12].

**Sustainability and interconnectedness of the agricultural system.** Major differences in economics, technology, demography, ecology and social environment create difficult conditions for many farming systems [13]. Border restrictions, travel bans and quarantines have added threats to the agricultural sector, especially for perishable products (European Commission, 2020). The resilience of the agricultural system to the COVID-19 pandemic is another metric to measure the impact of COVID-19. Small farms that mainly use family labor are less dependent on external hired labor, more sustainable than large farms that depend on external labor [13].

The outbreak of the COVID-19 virus is having a profound impact on international relations that goes far beyond the agri-food sector workforce. Export restrictions of various countries create a barrier to the entry of agricultural products into the market. Flight and port closures hinder the international supply chain. For the sake of "food sovereignty", few countries have seriously influenced the global system of agro-marketing.

**Other consequences.** The COVID-19 epidemic has had a significant impact on the behavior and activities of mankind, and agriculture has not been left out. Food security has been severely affected by restrictions on

movement; purchasing power has declined; on the contrary, the demand for food has increased, as well as an unbalanced impact on the most vulnerable groups of the population. The increased focus on public health and sanitation creates more competition for vital resources, especially water. The impact on achieving SGD becomes more complex. Research work is very difficult in the agro-industrial complex. Impact of supply chain and processing disruptions on animal welfare.

As international experience shows, agriculture cannot be efficient and successful without practical support. In view of the important role of agriculture in ensuring food security, the leading countries of the world are investing heavily in supporting agricultural producers, thereby regulating the food market and contributing to the social, economic and environmental development of rural areas.

Impact of COVID-19 on selected sectors of agriculture. It should be noted that the European Commission of the European Union notes that today, in the post-pandemic period, farmers and agricultural producers face many different problems. Since food security is still a priority development in the policy of the European Commission, therefore, it cooperates with the countries of the European Union and industry enterprises, while monitoring the situation and responding to it in a timely manner. As for the support of agricultural producers, the following situation is observed here (Figure 2): from 2005 to 2020, there is an increase in the income of farmers, but in 2020 you can see that there was a slight decrease compared to 2019. However, it should be noted that from 2013 to 2018 the level of support for agriculture in EU countries is lower than in previous years.

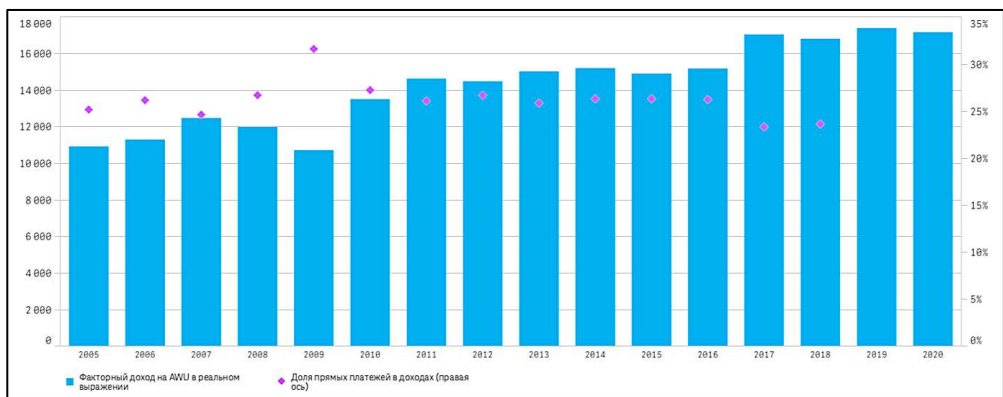


Figure 2 - Level of income of farmers and support provided in the countries of the European Union\*

\* Note: Compiled based on source [10]

In 2020, there is a downward trend in prices for vegetable oils, meat and biofuels, and the same trend is observed for agricultural products. Compared to the baseline, prices will be lower in 2021 for some types of lamb and pork. The impact of COVID-19 on livestock production is largely unknown and undefined. Although formal estimates are not yet available, recent results indicate that the livestock supply chain has been disrupted. Poor milk performance also affected this sector, which fell by an average of 4.6% in 70 countries and even fell by 29% and 19% in the US. (IFCN (International Farm Comparison Network), 2020). Consequently, COVID-19 is estimated to have cost the cattle sector \$13,617,418,450 in economic losses. Many livestock keepers and traders have lost access to national and international markets and, as a result, reduced their income. In the US, the price of pigs fell by 27% due to restrictions on movement. Demand for grain also declined as a result of reduced use of ethanol as a fuel. As a result, the cost of production increases. Prices for soybeans and other oilseeds have also fallen recently. The USDA is implementing a CFAP program for agricultural, livestock and dairy farms to help them cope with the loss of income caused by COVID-19. The restoration of border inspections in Europe has made it difficult to transport live animals, affecting the industry.

The illustration for 2020 is more mixed, with grains and biofuels above and below baseline. The COVID-19 pandemic around the world has greatly impacted open water fisheries. For example, at the peak of the coronavirus crisis in the United States of America, catches across the country were down by 40 percent. The fall in demand led to lower prices for fish and fish products. Fresh fish sales fell by 30% in France, Italy and Spain. In addition, several seafood trade events around the world have been cancelled, resulting in the loss of deals between large buyers and suppliers who depend on these regional events. Global aquaculture production is currently expected to decline by around 1.3%. [11].

The volume of agricultural production in 2020 decreased by 1.4%. Compared to the 2015–2019 season averages. sugar production decreased by 12%. During the first wave, the flower and plant sector suffered a significant financial loss of 4.12 billion euros. COVID-19 slows down the production of vegetables, fruits and honey. Due to the EU travel ban, this also causes labor shortages during the harvest season. Raise the price of agricultural inputs, including pesticides, fertilizers and seeds, among others. In addition to school closures, businesses and motels are seeing a decline in food demand (OECD, 2021). The largest group of farmers in Italy has launched the #MangiaItaliano (Eat Italian food) campaign. The Italian Ministry of Agriculture has allocated 6 million euros for farmers involved in agriculture, food and forestry, dairy farming and animal husbandry.

**Policies for the development of agribusiness in the EU countries.** In Germany, the government has temporarily extended the "70-day rule" for seasonal agricultural workers, who can now work up to 115 days until the end of October 2020 without paying social security contributions. It raised the limits on additional income from temporary work and farmers' pensions. Paid sick leave has also been adjusted so that where the Infection Protection Act is in effect, the amount received is equal to the worker's net wages for the first six weeks and then equal to the sickness benefit. In Italy, under Cura Italia stimulus measures, the eligibility requirements for unemployment benefits for agricultural workers were relaxed and a lump sum of €600 was paid to vulnerable workers, including agricultural workers. Employees earning less than 40,000 euros per year who must be present at the workplace are entitled to a one-time tax-free allowance of 100 euros.

Ultimately, all of the above will lead to the official adoption of the Common Agricultural Policy (CAP) reform on December 2, 2021. The new approach to agriculture, which will go live in 2023, focuses on being more equitable, greener and more productive in CAP.

The main goal of the new agricultural policy is to ensure a sustainable future for European agricultural producers, provide targeted support to small farms and give European Union countries more flexibility to adapt to local conditions. [9].

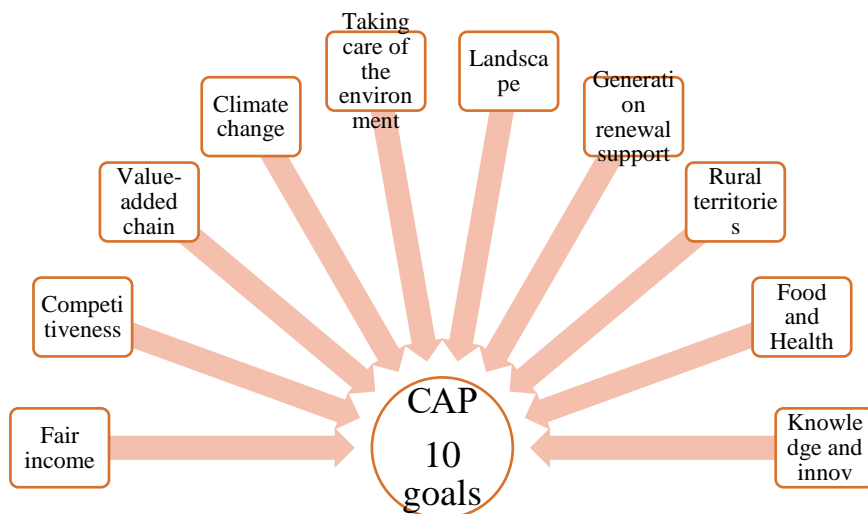


Figure 3 - Main objectives of the new common agricultural policy\*  
 \*Note: Compiled based on source [10]

According to the new course of the common Agricultural policy, agriculture will be supported in the post-pandemic period in order to achieve the goals of the European Green Course.



Before the common agricultural policy for the period 2023-2027, it is planned to implement ten main key goals (Figure 3), which are mainly focused on social, environmental and economic goals. These goals will become the basis on which the countries of the European Union will develop their strategic CAP plans.

It should be noted that I agree with Figure 2, today the main course of the ATS is aimed at the active development of green architecture (Figure 3) and as a result, support goes primarily to those farmers who adhere to this course of development. Also, green architecture focuses on eco-schemes, that is, at least 25% of the budget is direct payments that are planned to be allocated to support eco-schemes, that is, creating incentives for climatic and environmentally friendly methods and approaches of farming, such as: organic farming, agroecology, carbon farming etc., as well as improving biodiversity and animal welfare [14].

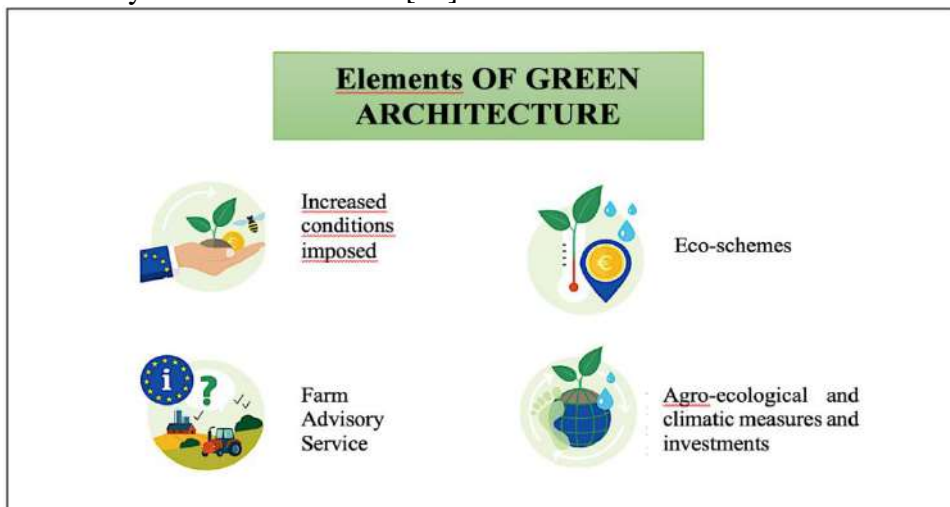


Figure 4 – Basic elements of green architecture\*

\* Note: Compiled based on source [10]

It is worth noting that as part of the development of this new policy - CAP, support to agricultural producers is mainly provided through consulting services (Figure 4): it is planned that the consulting system will use a wide range of economic and environmental data to provide technological and scientific information-advice to farmers. It is worth noting that agroecological and climatic measures and investments are such support of the European Union, which will be aimed at improving ecosystems, increasing the efficiency of resource use and will give a new impetus to the transition to a low-carbon, climate-resilient economy in the world. It is worth noting that agroecological and climatic measures and investments are such support of the European Union, which will be aimed at improving ecosystems, increasing

the efficiency of resource use and will give a new impetus to the transition to a low-carbon, climate-resilient economy in the world.

### **Agribusiness development policy in the USA and Canada.**

Agriculture in Canada receives substantial support from the state in the amount of 6-8 billion dollars. At the same time, low indicators are observed in Canada, which are determined by a unique system of state monopoly on the purchase of cheese, milk, eggs, poultry and is called "supply management". Specially created by the state enterprises control the promotion of the above products on the domestic market, regulate local production and impose import restrictions through high duties reaching 200%. On the other hand, such a system allows Canada to indirectly support agriculture, but at the same time the negative effect of such intervention is also visible: consumers are harmed, since prices for final agricultural products in Canada are 30-300% higher than in other countries. As a result, there is such a situation: consumers support domestic agricultural producers at their own expense.

It should be noted that support is provided through various programs and services to agricultural producers, for example, such as: AgriStability, a program to reduce the risk of pesticide poisoning, AgriInvest, which help improve the cultivation and production process of agricultural products and food. It is worth noting such a program as: "Building the Future 2" (CA2), which includes several programs (GRE) that help agricultural producers cope with the risks of price instability and reduced productivity.

As for the support of agriculture in the United States, it has played an important role in the country's economy since the country's founding. The mechanism of state management of agriculture covers a wide range of areas: from supporting the consumption of local food in the United States and abroad, and to the development of renewable energy sources in rural areas.

As a result, the main instruments of the US government's support for agriculture are direct and indirect accounting (DIA), as well as support for pricing of basic agricultural goods, which is carried out through loans secured by agricultural products through Commodity Credit Corporation - Commodity Credit Corporation under the US Department of Agriculture [15].

## **5 Conclusion**

1. At the present stage of development in most countries, support for agriculture includes support for the agricultural sector: the provision of various kinds of subsidies, subsidies, benefits, etc. The support of agriculture in the post-pandemic period contributes to the growth of agricultural production in the countries of the European Union, Canada, the USA and other countries that are the main exporting countries of agricultural food.

2. As international practice shows, the functioning and successful development of agriculture is impossible without effective support. Today, the European Commission of the European Union notes that farmers and producers face a number of difficulties, as a result, ensuring food security remains one of the priorities of the European Commission.

3. The Common Agricultural Policy (CAP) is a new direction in agriculture that focuses on a fairer, greener and productivity-based CAP. One of the significant goals of the SAR is green architecture. It is the green architecture that focuses on eco-schemes: at least 25% of the direct payments budget is planned to be allocated to eco-schemes, creating incentives for climatic and environmentally friendly methods and approaches of farming. Also agro-ecological and climatic measures and investments - EU support will be aimed at improving ecosystems.

4. It is worth noting the global experience of supporting agriculture in Canada and America, as these countries are world leaders in the production of agricultural products. In Canada, low indicators are observed, which are determined by a unique system of state monopoly on the purchase of cheese, milk, eggs, poultry and is called "supply management".

5. It is the support of agriculture in the United States that has played an important role in the country's economy since the country was founded. The mechanism of state management of agriculture covers a wide range of areas: from supporting the consumption of local food in the United States and abroad, and to the development of renewable energy sources in rural areas.

## References

1. Golovach, O. Experience of state regulation and support of the agricultural sector of the economy abroad/ O. Golovach // *Agrarian economics*. – 2017 (12). -pp.56-60. (in Russ.)

2. Popescu GC, Popescu M (2021) COVID-19 pandemic and agriculture in Romania: effects on agricultural systems, compliance with restrictions and relations with authorities. *Food Sec* 14:557–567. <https://doi.org/10.1007/s12571-021-01239-8>

3. McArthur, J. W., & McCord, G. C. (2017). Fertilizing growth: Agricultural inputs and their effects in economic development. *Journal of Development Economics*, 127, 133–152. <https://doi.org/10.1016/j.jdeveco.2017.02.007>

4. Akter, S. (2020). The impact of COVID-19 related ‘stay-at-home’ restrictions on food prices in Europe: Findings from a preliminary analysis. *Food Security*, 12(4), 719–725. <https://doi.org/10.1007/s12571-020-01082-3>

5. Akhtaruzzaman, M., Boubaker, S., & Sensoy A. (2020). Financial contagion during COVID-19 crisis. *Finance Research Letters* 101604. <https://doi.org/10.1016/j.frl.2020.101604>
6. Deaton, B. J., & Deaton, B. J. (2020). Food security and Canada's agricultural system challenged by COVID-19. *Canadian Journal of Agricultural Economics/revue Canadienne D'agroeconomie*, 68, 143–149. <https://doi.org/10.1111/cjag.12227>
7. Vorobyova V.V., Bugay Y.A. Personal Subsidiary Farms in the Food Supply System of the Altai Krai// 2020 International Scientific and Practical Forum on Natural Resources, the Environment, and Sustainability, NRES 2020, Japan, Tokyo, 670(1), 2020. –P. 65-78.
8. Kuhar, V. Analysis of the effectiveness of state support to farms in region of Russia. The case of sverdlovsk region/ V. Kuhar, E.Kot, O.Loretts, (...), A.Ruchkin, N.Yurchenko// *Journal of Environmental Management and Tourism*. – 2020. - 11(3). –P. 676-681.
9. Cranfield JAL (2020) Framing consumer food demand responses in a viral pandemic. *Canadian J Agric Economics/revue Canadienne D'agroeconomie* 68:151–156. <https://doi.org/10.1111/cjag.12246>
10. Haque MR, Khan MMA, Rahman MM et al (2022) Mental health status of informal waste workers during the COVID-19 pandemic in Bangladesh. *PLoS ONE* 17:e0262141. <https://doi.org/10.1371/journal.pone.0262141>
11. FAO (2020a) COVID-19: Impact on global fish trade | GLOBEFISH | Food and Agriculture Organization of the United Nations. <https://www.fao.org/in-action/globefish/news-events/details-news/en/c/1326499/>. Accessed 13 Nov 2020
12. ILO Industry Reference: COVID-19 and implications for agriculture and food security. International Labour Organization 2020 (in Russ.)
13. Meuwissen MPM, Feindt PH, Midmore P et al (2020) The struggle of farming systems in Europe: looking for explanations through the lens of resilience. *EuroChoices* 19:4–11. <https://doi.org/10.1111/1746-692X.12278>
14. Alpysbayev, K.S. “Green” economy: realities and prospects in agriculture/ K.S. Alpysbayev, Y.E. Gridneva, G.Sh. Kaliakparova // *Problems of AgriMarket*.- 2021. - № 3.- С. 44-50.
15. Agricultural marketing service // <https://www.ams.usda.gov/resources/data> (дата обращения 18.09.2022).