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FOOD SECURITY ISSUES IN COVID-19 PANDEMIC AND ITS PARTICULARITIES IN GEORGIA

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Abstract

Insurance stable food security was and remains, one of the most significant issues faced by human society. Food security is an important socioeconomic and political issue at the individual, national, and global levels. In the conditions of global cataclysms like the COVID-19 pandemic, the problem of food security becomes even more difficult. As mentioned at the opening of the Joint Technical Symposium held on December 16th, 2022, "There is no certainty when the next pandemic will strike us, but there is the absolute certainty that it will happen again". In such conditions, rethinking the gained experience obtained through the COVID-19 pandemic becomes particularly important. The article distinguished two aspects of food security – the food quantity problem and the food quality problem and considers the impact of COVID-19 on food security at the levels of countries, human groups, and economic sectors. On the country level, the paper discusses countries that experienced food problems in the past, food-import-dependent countries, and food-export-dependent countries. On the human groups level, the article distinguishes communities and groups of people who already experienced hunger, socially unprotected populations, and the so-called "new poor". On the economic level, the paper defines sectors of the economy that were highly affected by the COVID-19 pandemic. It also analyses the food security issues in Georgia and the effects of COVID-19 on the domestic production of main groups of products, the ratio of import and export by groups of products, and the self-sufficiency ratio according to some groups of products.

Keywords: *Food, security, COVID-19, Production, Food-Import, Food-Export, Self-sufficiency*

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1 INTRODUCTION: FOOD SECURITY – A BRIEF LOOK AT THE HISTORY

In international practice, the food security term first appeared in 1972-73. But food issues-related discussions go back to the International Agriculture Conference in Rome held from 28 May

to 7 June 1905 when 40 countries signed a Convention (1923). That way, they established the first intergovernmental agriculture-issue-connected organization - the International Institute of Agriculture.

The International Agriculture Conference in Rome, as well as the signed Convention, was base-idea for the ideas developed by the United Nations Conference on Food and Nutrition held in Hot Springs (Virginia, USA) in May-June 1943 when the delegates from 44 countries decided to establish food- and agriculture-related organization with a purpose to fight a pang of hunger and undernourishment. Their decision was realized on 6 October 1945 in Quebec (Canada) where the Food and Agriculture Organization of the United Nations (FAO) was established. After that, numerous similar organizations were established in and outside the UN system, which at the international or national level together with various international issues, also solve problems related to agriculture.

In 1961 the multilateral World Food Programme (WFP) was established. The Programme was supported by resolutions of the United Nations General Assembly aimed to provide "Food surpluses to food-deficient people through the United Nations system" (UN, 1961, str. 20).

In 1974 the General Assembly of the United Nations adopted the resolution "On global food security commitments" developed by the FAO.

On November 19-21, 2014, the 2nd International Conference on Nutrition adopted Rome Declaration on Nutrition. This Declaration reaffirms the right of everyone to have access to safe, sufficient, and nutritious food. The Declaration acknowledges the importance and multidimensionality of malnutrition leading factors and that all kinds of undernourishment negatively affect the physical and mental development of a person, destroy the immune system, and increase susceptibility to various diseases. The Declaration underlined that malnutrition also has social and economic consequences both for the hungry people themselves and for society as a whole (n.d., 2014, Nov 19, p. 1).

The UN Sustainable Development Summit (New York, September 2015) that joined 93 countries held out promises to end hunger in the nearest 15 years. A little later (from November 30 to 12 December 2015) in Paris the United Nations Climate Change Conference accepted the Climate Change Agreement and recognized food security as the main direction for future performance.

On December 9-11th 2019, the issues were discussed at a world conference in the capital of the United Arab Emirates, Abu Dhabi. The conference was attended by government officials and food security experts from 135 countries.

2 FOOD SECURITY: THE IMPORTANCE AND MEANING

Food security, as one of the basic socio-political and economic issues, is considered one of the main national and global security elements and a significant indicator of economic development and prosperity. Food security insurance means uninterrupted and timely delivery of all necessary and human health-important food.

Food security issues refer to the physical accessibility of a sufficient quantity of safe food for all social groups. Food security issues are related to national food independence, the ability of the national food system to create conditions for continuous security of food supply to the population, to the sustainability of the national economic system that ensures the stability of population food security.

Scientists consider the problem in the two interrelated and interdependent contexts:

1. *Food Quantity Problem* – means the availability of the necessary amount of food to meet the needs of a growing population of the world and hunger protection.
2. *Food Quality Problem* – means the accessibility to healthy and nutritious foods or food safety for humans and the search for ways to solve it.

Food security is a problem often linked to the continuous growth of the planet Earth's population.

2.1 Food security: Food sufficiency and hunger protection problem

Appropriate data analysis has shown the World population reached its first billion in 1804. That took more than 200,000 years. The population increase to 8 billion took only 219 years (Figure 1).

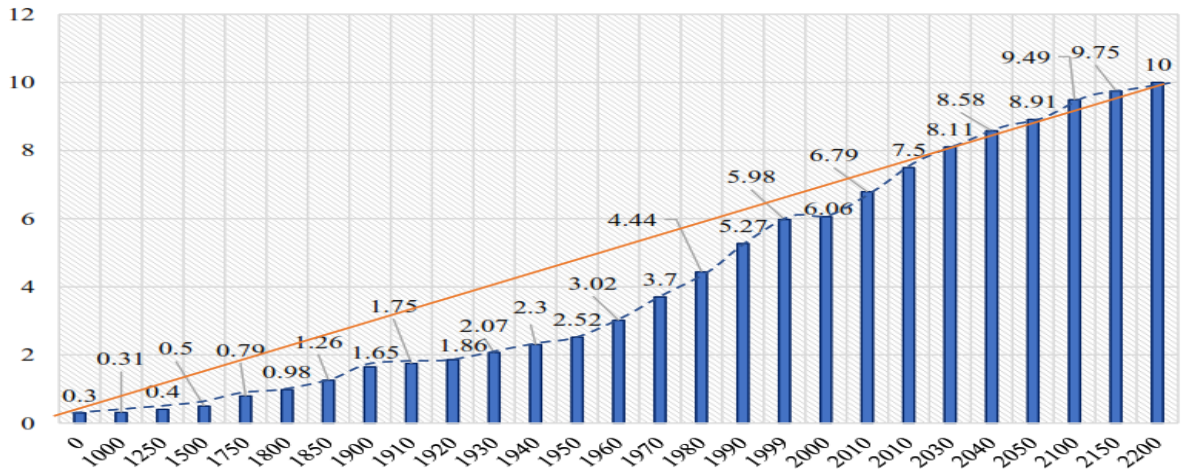

Figure 1: The World population growth (in billions)
Source: Created by authors based on the Worldometer (2023)

On December 15, 2022, there were about 8,005,007,000 people in the World (Worldometer, 2023), and the population is growing by about 65 million a year.

According to FAO data, with population growth, about 820 million people, or about 10.8% of the population, were malnourished or experienced a pang of chronic hunger, or had not eaten enough caloric energy to live normal lives in 2018. That is 0.1% more than in 2016 and 0.2% higher than in 2015 [(Haan, 2006); (FAO, IFAD, UNICEF, WFP, & WHO, 2019); (UN, 2019, p. Part I); (UN, 2019, p. Part II)].

Of those 820 million, 113 million from 53 countries experience severe hunger that directly threats their lives. Moreover, 143 million people in another 42 countries are very close to acute hunger. That inability to have enough food puts their lives in immediate danger.

Due to malnutrition, 20.5 million children were born underweight, and 1.3 million had health problems in 2018. According to the United Nations Children's Fund, every day closely 22,000 children die of hunger [(UN, 2022) (FAO, IFAD, UNICEF, WFP, & WHO, 2019) (UN, 2019, p. Part I) (UN, 2019, p. Part II)].

Therefore, providing the population with food is one of the most significant issues.

The agency of the United Nations in the field of agriculture, the FAO, whose goal is to overcome hunger worldwide, considers food security as a global phenomenon and distinguishes four main elements of food security, particularly:

- *The availability of food* – means the existence of sufficient quantities of appropriate food quality.
- *Access to food* accession to resources that are necessary and sufficient to ensure a balanced diet.
- *The Rationality of food use*, or in other words, the satisfaction of all physiological needs of the individual through a balanced diet.
- *The Stability of food use* – means eliminating of risk of losing access to food soon.

The problem of food security is directly connected with food quality as well.

2.2 Food security: Food quality assurance issue and protection of health and life

In the face of a relative food shortage, and first, for poor people and countries, the food quality problem becomes increasingly acute.

The assessment of food security in a global context has shown that 7.5% of the world's population, or about 600 million people, fall ill because of eating contaminated food and, according to Disability-Adjusted Life Year (DALY)'s data, 0.07% or 420,000 of them die each year from this cause. (WHO, 2022) Contamination of food products means the presence of pathogenic bacteria, viruses, parasites, or harmful chemical compounds in the composition of these products, which cause more than 200 types of diseases ranging from diarrhea to meningitis and oncological diseases.

The most overall illness caused by contaminated food is diarrhea, which affects about 7.1% of the world's population, or 550 million people each year. It is important to note that 40% of foodborne illness patients are children under the age of five, of whom 125,000 die each year (Haan, 2006).

As Director of the World Health Organization (WHO) Tedros Adhanom Ghebreyesus has mentioned, foodborne illnesses are becoming more and more common, making people's health worse, and many people are dying, endangering the health of future generations and the economies of countries.

Food safety is not only a health problem. It is also a socio-demographic, political, and economic issue.

The existence of accessible and safe foods largely depends on the proper functioning of the national and global economy and their separate sectors agriculture and trade, as well as various policies like poverty alleviation policy, hunger-fighting directed policy, etc. In the conditions of global cataclysms such as the COVID-19 pandemic, the problem of food security becomes even more pronounced.

2.3 The influence of the COVID-19 pandemic on the global economy and population

The global economy faces a new problem today and this problem is the COVID-19 virus that rapidly spreading across the World and attacks the Earth's population.

The pandemic brought and continues to bring huge human losses and essential economic costs. It influences the food system and affects food supply and demand.

Until 20 April 2020, there were 2,350,058 cases of coronavirus worldwide including 161,268 deaths, 7% of all infected, and 606,124 recovered or 26% of all infected. 1,582,666 people were treated. As of 13 August 2021, there were 206,556,420 cases of coronavirus worldwide. By then, 4,353,453, or 2% of all those infected, had died. 185,346,557, or 47% of all those infected, have recovered, and 16,856,410 were being treated (OECD, 2020).

The economic destruction started with the COVID-19 pandemic and produced food crisis risks. Caused and forced by pandemic quarantines, closure of service enterprises, disruptions of markets, jobs lost, limitations of food and other goods supply chains, restrictions of trade, etc., create economic and humanitarian consequences that could be much heavier than the pandemic itself. It leads to the escalation of the issues of access to substantial food and intensifies food-related problems.

2.4 Food safety under the influence of the COVID-19 pandemic

According to UN warnings, the COVID-19 pandemic could cause a global food shortage. It means that food insecurity remains a global challenge.

What and who are impacted by COVID-19 in respect of food security? We can consider this question with three dimensions:

1. countries level,
2. human groups level, and
3. economic sectors level.

1. ***On the country level*** most impacted by the pandemic are the following countries:
   a. *Food-issue-experienced countries* or countries that already had substantial problems with food supply before the pandemic spread. The pandemic most impacted those states.
   b. *Food-import-dependent countries*, or countries that rely heavily on imports of agricultural products and food. All countries to some degree are import-dependent, but poor countries and regions with rapidly growing populations are most likely to be affected by the impact of COVID-19.
   c. *Food-export-dependent countries* are countries whose economies focus on agricultural products and food production and export.
2. ***On the human groups level,*** the most influenced by COVID-19 are vulnerable groups that include:
   a. Communities and groups of people who, to some degree, already have experienced hunger or other problems with food consumption. These are mostly the poor in both developing and developed countries.

b. Socially unprotected (so-called vulnerable) segments of the population, such as the aged population (single pensioners and elderly persons), large and single-parent families, people with disabilities, children from vulnerable families, etc.

c. Groups of people who have not previously experienced problems with food consumption, but they, because of the COVID-19 pandemic, lost their jobs, or had difficulties with their business, etc., lost income and began to experience problems with consumption, including food. Therefore, this category faces the threat of replenishing the ranks of the so-called *new poor* (Arnania-Kepuladze, Dali, & Kepuladze, 2021). This category of people mainly includes small farmers, small businesses, individual entrepreneurs, informal workers, employees, or self-employed in some sectors of the economy.

3. ***On the economic sectors level***, COVID-19 negatively affects the production and processing of agricultural raw materials, fishery products, aquaculture, the hospitality industry, the restaurant and hotel business, transport and logistics systems, culture, and education, etc., as well as on the labor-intensive industries such as services, which in poorer countries tend to be less digitalized and therefore more dependent on direct contact.

How has COVID-19 impacted the agricultural sector in Georgia?

2.5 Food security and COVID-19 pandemic: Georgia context

Food security is one of the directions of Georgian socioeconomic and energy security (Law, 2018).

One of the measures of food security is the Food Security Index (FSI) which includes three dimensions:

1. Access to food.
2. Crisis level, and
3. The food system and economic resilience.

According to Deep Knowledge Analytics (DKA), by July 1st, 2022, the Food Security Index for Georgia was 5.53. The Access to Food indicator equaled 5.71. The Crisis Level indicator was 3.68, and Food System and Economic Resilience indicator was 4.57 (DNA, 2022).

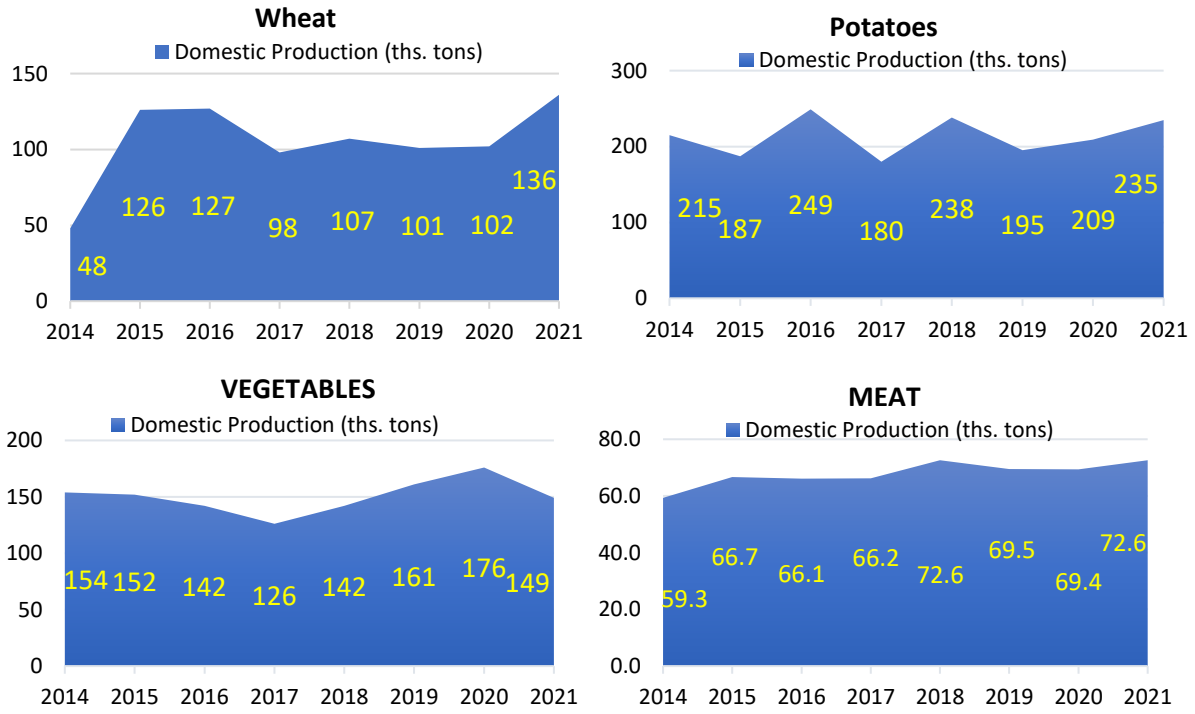

Fig. 2 Part I

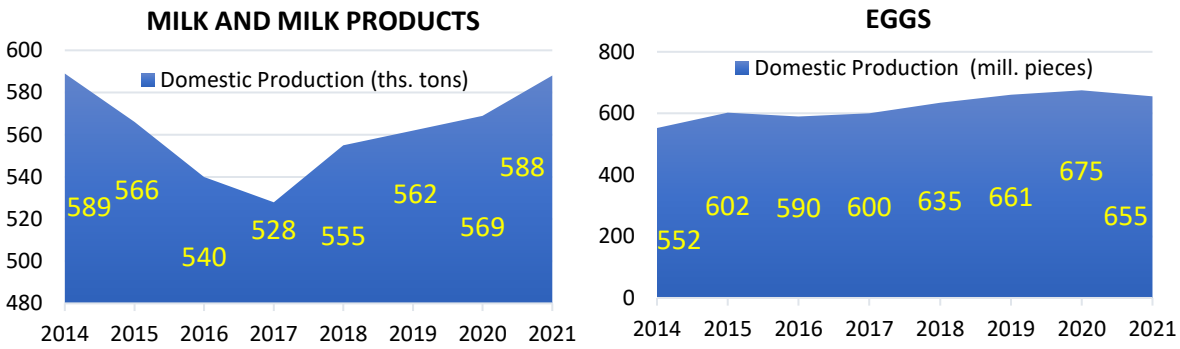

Figure 2: Domestic production in Georgia by groups of products
Source: Created by authors based on the Geostat data (geostat, 2022)

Another indicator of food security is the Self-Sufficiency Ratio (SSR). It represents a percentage of used food covered by own production or the relation between consumed food of domestic production and all consumed food calculated in percentage.

Figure 2 demonstrates the amount of domestic production by main groups of products in the case of Georgia.

As Figure 2 shows, after the appearance of COVID-19, the domestic production of wheat not only did not decrease but also slightly increased in 2021 and amounted to 136 thousand tons. The same goes for potatoes, meat, milk, and milk products. The production of vegetables decreased from 161 thousand tons in 2019 to 149 thousand tons in 2021. The production of eggs also decreased. In 2021 the production of eggs was 6 million pieces less than in 2019.

Table 1 expresses the Self-sufficiency ratio in Georgia by most significant groups of products.

Table 1: Self-sufficiency ratio (%) in Georgia by groups of products

Year	2014	2015	2016	2017	2018	2019	2020	2021
Wheat	7	17	19	15	14	15	15	22
Corn	91	77	79	64	71	70	68	74
Vegetables	66	66	64	65	60	62	63	61
Potatoes	88	89	90	113	102	93	92	115
Meat	43	48	48	48	52	48	49	51
Milk and Milk Products	90	87	82	82	81	81	81	81
Eggs	96	102	100	98	99	96	97	98

Source: Created by authors based on the Geostat data (geostat, 2022)

For this study, 2019 is considered a milestone year before the COVID-19 pandemic and after the emergence of this pandemic.

Data in Table 1 show that wheat production remained unchanged in 2020 compared to 2019. In 2021 the indicator increased to 7%. The self-sufficiency ratio for wheat, from 2014 to 2021, was characterized by an increase. The self-sufficiency ratio for corn fell to 2 % in 2020 compared to 2019, but in 2021 the indicator increased to 6% and reached 74%.

The self-sufficiency ratio for milk and milk products was unchanged in the last four (2018-2021) years. Despite that, the self-sufficiency ratio for wheat remained to be very low.

The self-sufficiency ratio after 2019 decreased for corn (2%) and potatoes (1%), but for vegetables, meat, and eggs, the self-sufficiency ratio increased by 1% for each of the mentioned product groups.

A relatively favorable situation has developed for potatoes. Even though in 2020, the self-sufficiency ratio decreased by 1%, in 2021, it increased to 22%. The overall picture with the self-sufficiency ratio of potatoes for 2014 to 2021 characterizes stable growth, and in 2021 the

sufficiency ratio of potatoes reached 115%. A fairly high level of self-sufficiency characterizes the production of eggs, milk, and milk products for which the self-sufficiency ratio was 98% and 81%, respectively.

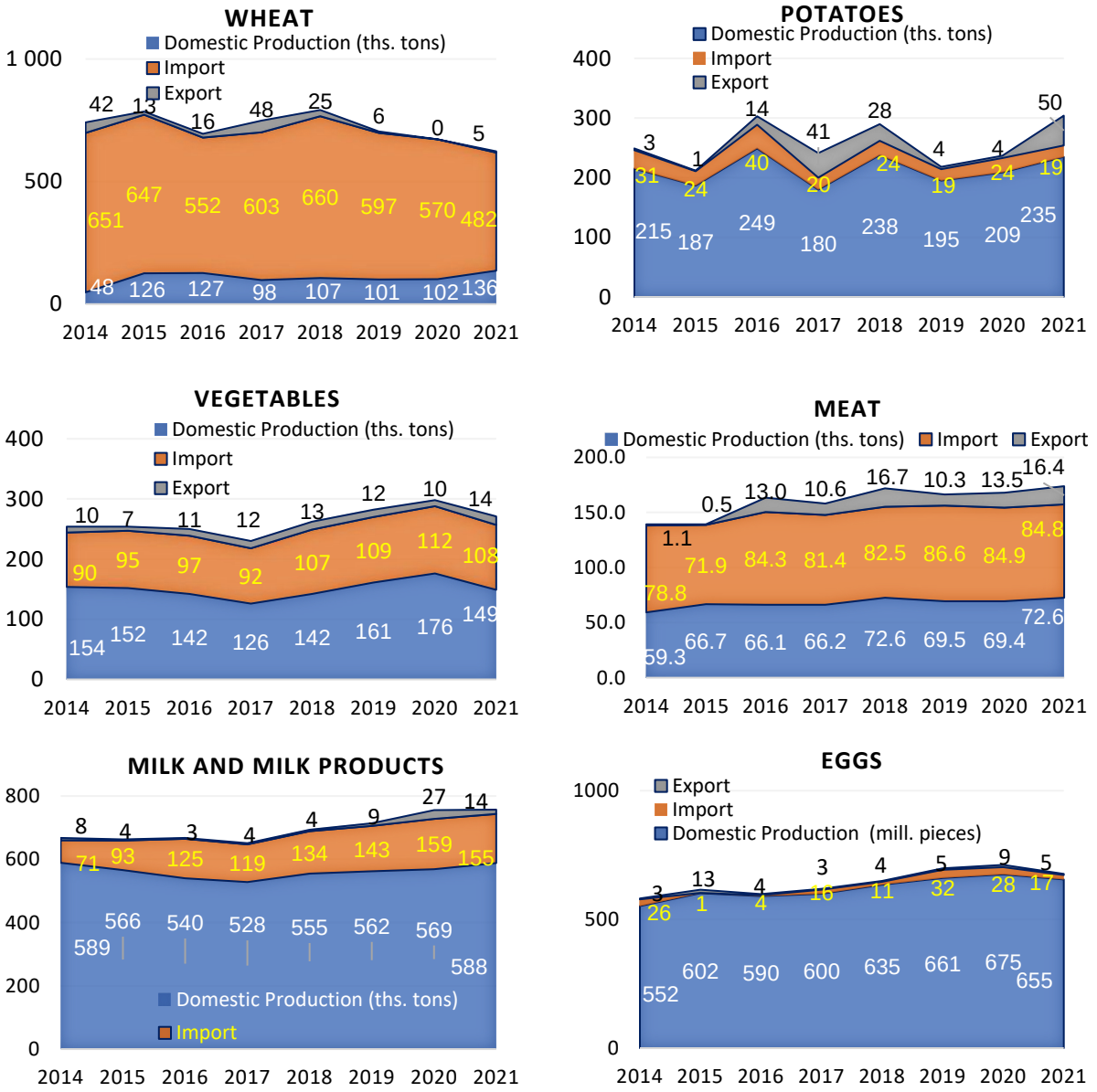

Figure 3: Export-import of main agricultural products
Source: Created by authors based on the Geostat data (geostat, 2022)

How has the COVID-19 pandemic influenced the export and import of agricultural products in Georgia?

One of the criteria to assess food security is the economic affordability of food.

The economic affordability of food is calculated as the share of expenses for the purchase of products in the overall structure of household expenditures. In other words, the economic affordability of food is the share of household food expenditure in the total household expenditure.

Figure 4 shows the share of household food expenditure in total consumer expenditure in Georgia for 2007-2021.

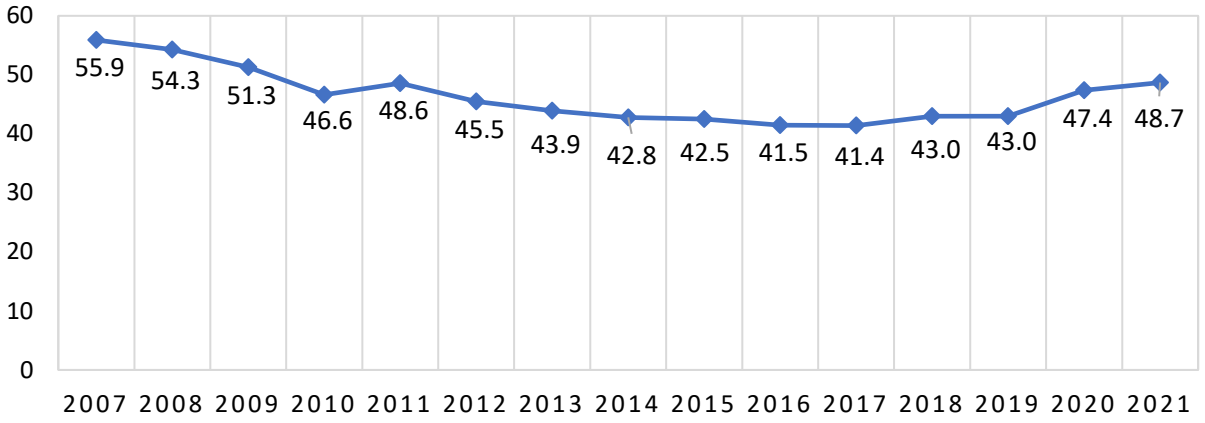

Figure 4: Share of household food expenditure in total expenditure (%)
Source: Created by authors based on the Geostat data (geostat, 2022)

Until 2017, the level of household expenditure on food was steadily declining. But in 2018, this indicator increased by 1.6% and reached 43%. This indicator remained the same in 2019, but in 2020 the share of household food expenditures increased by 4.4%, and in 2021 it increased by another 1.3%.

If the share of food expenditures does not exceed 20% of total final consumption, the food is economically affordable, if a household spends on food more than 20% but less than 33% of its total consumption, the level of food economic affordability can be considered as a medium, while if a household spends on food purchasing more than 33% but less than 50% of its total consumption, the level of food economic affordability can be considered as low, but when a household spends more than 50% of own total consumption on the food, it means that food economic affordability is critically low.

The Georgian population spends more than 40% of its consumption on food. Following the above-mentioned gradation of food economic affordability, Georgia experiences a low level of food economic affordability. In 2021 the share of household food expenditure in total expenditure was 48,7%, and Georgia approached a critical level of food security.

One of the reasons for the low rate of economic affordability of food is the low level of income of the Georgian population. The other reason is the rising food prices that manifested after 2019. The impulse for rising food prices was an increase in production costs, an increase in the cost of supply chains of raw materials, the need to provide workers with personal protective equipment and disinfectants, etc. The rise in prices in the domestic market in Georgia also occurs because of the influence of food prices in the external market.

3 CONCLUSION

Thus, the spread of the COVID-19 pandemic threats the stability of the use of food by individuals and groups of people due to the deterioration of the economic activity of some sectors of the economy, which can lead to an aggravation of the problem of food, and subsequently economic, security of some countries and regions.

After 2019 the level of economic affordability of food in Georgia decreased. A drop in the people's real incomes and rising prices in the food market caused that decrease.

Due to the emergence of new strains of coronavirus, food security threats will remain in the future. It requires developing new approaches to the agri-food systems formation and functioning, which should be less susceptible to external factors like social, economic, political, biological, and other circumstances.

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