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ECONOMIC SCIENCES

FOOD SECURITY OF UKRAINE AS A COMPONENT OF ECONOMIC SECURITY OF THE STATE

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Abstract

The article studies the current state of food security in Ukraine based on statistical data of the outlined criteria, in particular: the daily energy value of the human diet, the sufficiency of consumption in terms of basic foods, the dynamics of food consumption by the population and the structure of its expenditures, indicators of the adequacy of state supplies of grain, economic food affordability; the cost differentiation of food products by population groups with different income levels, the capacity of the domestic market and its import dependency. It has been found out that the state of food security in Ukraine does not meet the established threshold values and norms of the majority of indicators. Nevertheless, the value of individual indicators calculated according to 2018 data comparing with previous years positively characterizes the dynamics of food security in Ukraine: the level of consumption sufficiency has increased for a great number of types of products; satisfaction of the population food needs was carried out mainly due to domestic agricultural products. At the same time, the state of food security in Ukraine cannot be characterized as stably positive as: the average daily caloric intake of country population decreased in terms of livestock products; there is a significant gap in consumption between the quintile groups of households by income; a high level of food dependence has been established (subject to rational consumption standards) for meat, milk, fish products, fruits, berries and grapes; the percentage of import dependence of Ukraine for oil, fruits, berries and grapes exceeds the threshold level.

The ranking of Ukraine in the world community has been analyzed according to the Global Food Security Index – 2019. It has been worsened by 13 points compared to the previous year.

As a result of the study, the problems in the formation of proper food security system are identified taking into account the features of their manifestation in modern socio-economic and political conditions. The directions of state policy on ensuring food security in Ukraine are determined, such as: balancing of the domestic agricultural market, developing of material and technical base of agricultural production, maintaining the income growth of the population, etc.

Keywords: food security, food security indicators, food consumption sufficiency, import dependency, food safety and quality.

Introduction. The recent social, economic and political transformations in Ukraine brought to the surface a number of important problems, the successful solution of which is the key to the further self-sustaining development of the national economy. Ensuring the food security of the country is among such problems, which in critical situations is one of the indicators of the level of foreign economic dependence of the country and its sovereignty. The decline in the living standard and purchasing power of citizens, the destruction of economic relations with Russia, the opening of European and world markets, the imperfection of state regulation of the agricultural market and support of the national producer, incomplete land reforms and a number of other factors have led to an aggravation of the problem of ensuring food security in Ukraine. The current quarantine state in Ukraine and world economies together with COVID-19 causes an even greater deepening of socio-economic problems that in its turn also leads to deterioration in the food supply of the population.

Analysis of recent research and publications. The foundations of modern concepts of food security were laid after the Second World War, when the problem of food security in many countries became even more acute. The tasks of overcoming food shortages were spelled out in the Charter of the United Nations

created at that time that to this day is actively addressing the problem of global food security. Given the fact that the problem of food security does not lose its urgency, despite the progress achieved in food production in the world, economic science is constantly being replenished with studies on various aspects of food security. Food security issues are in the center of constant attention of Ukrainian scientists, in particular L. Deineko, M. Kaletnik, A. Kardash, S. Kvasha, Yu. Lupenko, A. Mostova, B. Paschaver, P. Sabluk, M. Sychevskiy, A. Shpychak, A. Yuzefovych and others. Nevertheless, the emergence of new factors affecting food security and the dynamic changes taking place in Ukrainian economy in the vectors and the scales of its integration into the global food market leave wide scope for further research.

Goals setting. The purpose of the article is to investigate the state of food security in Ukraine and assess the possibilities of its strengthening in the face of modern internal and external challenges.

Research results. Food security is an important component of the economic and national security of the state. As indicated in the National Doctrine of Food Security of Ukraine, food security is the state of the economy, which ensures food independence of the country, guaranteed physical, economic and social accessibility of the population to a sufficient amount of nutritious and safe food, in accordance with the recommended

diet and nutritional standards [9]. The need to ensure food security requires maintaining a guaranteed stable and sufficient level of agri-food production, determines the trends in domestic and foreign economic policy, formulates measures for socio-economic stabilization and demographic renewal of society, as well as improving the quality of its life.

General methodological approaches to the analysis of the state of food security as one of the components of economic security are described in the "Methodical recommendations for calculating the level of economic security of Ukraine" dated October 29, 2013 No. 1277. The level of food security, based on these recommendations, is estimated using a system of indicators, including: daily calorie intake, thousand kCal; the ratio of production and consumption of the major groups of food products, %; grain production per person, tons; grain reserves at the end of the period, % of consumption; the share of sales of imported food products through the trading network of enterprises, % [7]. The indicators reflect the characteristics of food security in terms of current status, changes, and dynamics. The food security indicator acts as an indicative economic indicator, a measure that allows predicting with a certain degree of accuracy in which direction we should expect the development of economic processes.

We can distinguish macro- and microeconomic indicators of food security.

However, assessing the level of food security is often carried out according to the Methodology for determining the main indicators of food security approved by the Cabinet of Ministers of Ukraine dated 05.12.2007 No. 1379 "Some issues of food security", which contains the following indicators and their threshold values [4].

1) *The daily energy value of the human diet* is defined as the sum of the products of a unit mass of certain types of food consumed by a person during the day and their energy value. The boundary minimum criterion is set at 2500 kCal per day, while 55% of the daily diet should be provided by consuming products of animal origin.

The Figure 1 indicates that the daily caloric intake the average Ukrainian slightly exceeds the daily norm, although this excess is insignificant. In 2017-2018, it was at the level of 2706 kCal. For comparison, mentioned indicator in 2017 in Poland was 3485 kCal per day, in Hungary – 2968 kCal per day, in Bulgaria – 2877 kCal per day. There is a low level of consumption of animal products in the diet of the population of Ukraine (within 29%). Ukrainians receive the bulk of calories from the consumption of plant products.

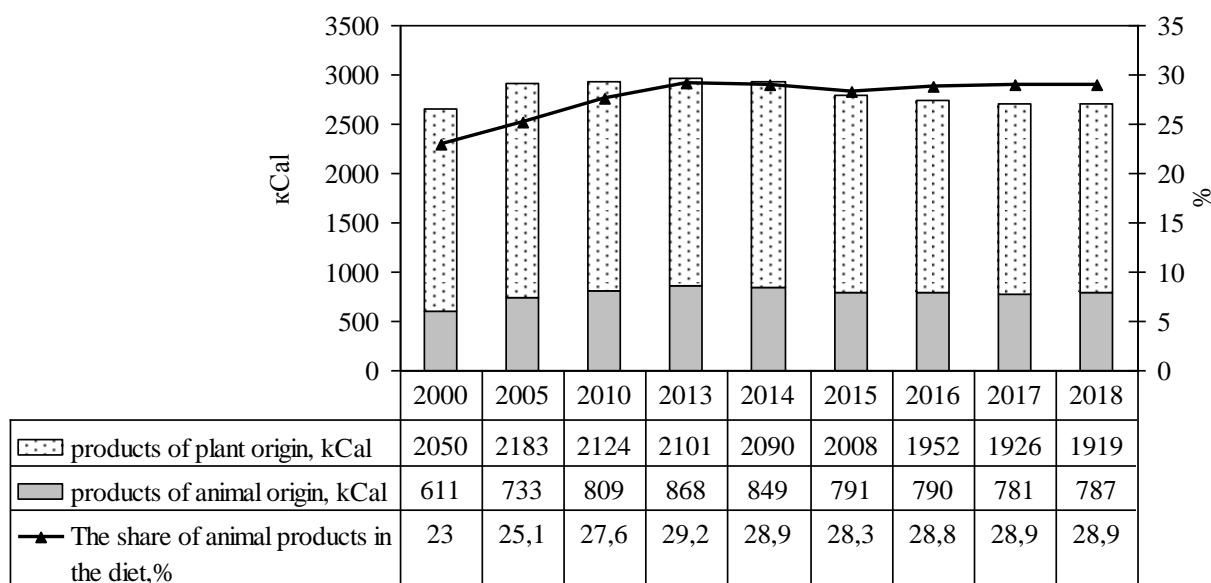


Figure 1. The daily energy value of the diet of the population of Ukraine per person in 2000-2018
Source: compiled by authors according to the data of the State Statistics Service of Ukraine [2]

2) *Providing the human diet with the main types of products*, that is defined as the ratio between the actual consumption of an individual product and its rational norm. According to the data of the State Statistics Service of Ukraine, in recent years Ukrainian population eats uniformly and the energy value of the diet is provided mainly by carbohydrates and fats due to bread and bakery products, potatoes, eggs and oil, that is an evidence of unbalanced nutrition and attempts to provide for their own energy needs due to relatively affordable products. Having calculated the indicator of food consumption per person in 2018 in Ukraine, it should

be noted that only the consumption of bread and bakery products practically corresponds to the recommended norm. For the remaining types of products (except oil and vegetable fats of all types, the sufficiency ratio of which is 1.38), there is a significantly lower consumption level comparing to the rational norm. In particular, the consumption of meat and meat products is 74% of the norm recommended by the Ministry of Health, milk and dairy products – 60%, eggs – 79%, fish and fish products – 84%, sugar – 85%, potatoes – 61%, vegetables and melon products – 66%, fruits, berries and grapes – 51% (Table 1).

Table 1

Calculation of the indicator of sufficiency of food consumption per person per year in Ukraine in 2012-2018

Types of products	Rational norm (calculated by the Ministry of Health of Ukraine)	Indicator of adequacy of food consumption per person per year						
		2012	2013	2014	2015	2016	2017	2018
Meat and meat products, kg	80	0,75	0,77	0,74	0,69	0,68	0,65	0,74
Milk and dairy products, kg	380	0,62	0,64	0,64	0,63	0,62	0,53	0,60
Eggs, pcs.	290	0,83	0,83	0,83	0,79	0,83	0,94	0,79
Fish and fish products, kg	20	1,02	1,08	0,96	0,72	0,72	0,54	0,84
Sugar, kg	38	0,98	0,95	0,95	0,88	0,85	0,80	0,85
Oil and other vegetable fats, kg	13	1,66	1,57	1,57	1,48	1,38	0,90	1,38
Potatoes, kg	124	0,75	0,69	0,67	0,64	0,62	1,16	0,61
Vegetables and melon prod- ucts, kg	161	0,75	0,70	0,67	0,66	0,73	0,99	0,66
Fruits, berries, nuts, grapes, kg	900	0,49	0,55	0,49	0,41	0,43	0,59	0,51
Bread and bakery products, kg	101	1,08	1,07	1,07	1,01	0,97	1,0	0,99

Source: compiled by authors according to the data of the State Statistics Service of Ukraine [10]

The analysis of the data in Table 1 allows us to conclude that the population of Ukraine does not have the possibility of adequate nutrition in accordance with the needs of the body for almost all types of food, except oil and vegetable fats. This indicates negative trends and the approximation of food security in this particular indicator to a critical level. The low level of food consumption is the consequence not so much of insufficient agricultural production, as of the low solvency of the population, especially of certain social groups [8].

3) *The sufficiency of grain stocks in state resources*, which is defined as the ratio between the volume of food grain in the state reserve and the volume of domestic consumption of bread and bakery products in terms of grain. The ultimate criterion for this indicator is considered to be its 17% level, corresponding to 60 days of consumption. According to the Art. 9 of the Law of Ukraine "On State Support of Agriculture" [12], the Agrarian Fund creates a state intervention fund to ensure food security, which should exceed 20% of the annual domestic consumption of the product for the previous marketing period.

As of March 1 2020 in Ukraine, the remnants of grain and leguminous crops were 17.88 million tons, which is 14% less than the same date in 2019 (20.83 million tons). In particular, the reserves of wheat at the beginning of March 2020 were 4.99 million tons, rye - 81.5 thousand tons, barley - 1.58 million tons, corn for grain - 10.68 million tons, sunflower - 5.27 million tons.

According to the Ministry of Economic Development, Trade and Agriculture, as of March 26 2020, a total of about 17.9 million tons was exported, about 1 million tons of which was exported in March. Based on the conditions of the Memorandum on the marginal volume of grain exports for the 2019/20 marketing year, the volume of wheat exports until its end will not exceed 2.3 million tons. In this case, the remnants of wheat stored by agricultural producers at the end of the marketing year (July 2020) will be about 1.7 million

tons. Meanwhile, the entire forecasted volume of wheat use in the domestic market during the 2019/2020 marketing year is 8.23 million tons. Thus, at the end of the marketing year (i.e. at the time of a new harvest season), the balance of wheat will be 21% of the total annual demand. This means that Ukraine will have enough grain for domestic needs, even if demand increases sharply and at the same time there will be crop failure of wheat.

The integration of Ukraine into the world economy, in particular in the European space, trade liberalization within the WTO, and the growth of global food demand have become fundamental factors in the structural changes in the domestic agri-food market. As a result, specialization and concentration of crop production of export-oriented crops are increasing, including: wheat (sown area of winter and spring wheat in all categories of farms in Ukraine in 2019 amounted to 6809.0 thousand hectares, or 24.5% of the total sown area), corn for grain (respectively 4,973.9 thousand ha or 17.9%), barley (respectively 2615.9 thousand hectares or 9.4%), sunflower (respectively 5849.3 thousand hectares or 21.0%), soybeans (respectively 1579.6 thousand hectares or 5.7%), rapeseed (respectively 1285.4 thousand hectares or 4.6%) [10].

The comparative advantage of the domestic production of these crops is possible due to the presence of significant areas of fertile agricultural soil, low land rent, low wages in agriculture, as well as the imperfection of legislation regarding the use and protection of land resources. Unfortunately, in many enterprises, production growth occurs extensively due to an increase in the sown area, in particular, in 2019 compared with 2018, the area under crops of wheat increased by 2.9%, corn - by 8.6%, barley - by 5.0%, rapeseed - by 23.4%. Moreover, there is an increase in sown areas of crops that are the most debilitating for the soil, by the point of crop rotation, while there is a significant reduction in sugar beet crops in 2019 compared to 2018 by 20.2%, rye - by 21.1%, and buckwheat - by 40.1% and

other cultures that are important to ensure a rational nutritional structure of the country population.

4) *The economic food affordability*, that is equal to the share of total food costs in the structure of total household expenditures. The maximum value of the indicator is 60%. According to figure 2, it can be argued that the food costs in the structure of population expenditures are less than the normative value of 60%, while in economically developed countries this indicator is in between 10% to 15%. The food availability is limited by the solvency of society, which in turn forms the demand for agricultural products. Due to the low level of wages of a larger number of the workers, high unemployment and underemployment, the mismatch between current prices and real incomes of the population, the threat to ensuring food security in Ukraine is growing [1]. Despite the steady trend towards a decrease in the share of household consumer spending on food and soft drinks in the structure of total expenditures from 56.66% in 2014 to 51.85% in 2018, Ukrainian consumers still spend most of their income on them

and hence the population is considered to be poor. Prices for food, gas, water, electricity in Ukraine are approaching European, but the real incomes of average citizens do not have this trend. A significant increase in prices of basic foodstuff leads to an increase in household expenditures, a decrease in economic affordability and a disruption in the balanced structure of nutrition and its quality deterioration. The increase in prices of animal products (meat and meat products, milk and dairy products) and fruit was the most rapid. The cost of food for one person in 2018 averaged UAH 57 per day against UAH 46 in 2016 and UAH 29 in 2012 [3]. In the regional context, the smallest share of food expenses in total consumer spending in the amount of 46.7% was recorded in households in the Zaporizhzhya region, the highest - in Volyn - 59.2%. The share of food expenses exceeded the average for Ukraine only in 12 regions. Thus, we can conclude that the indicator of economic affordability of food for Ukrainians is not satisfactory.

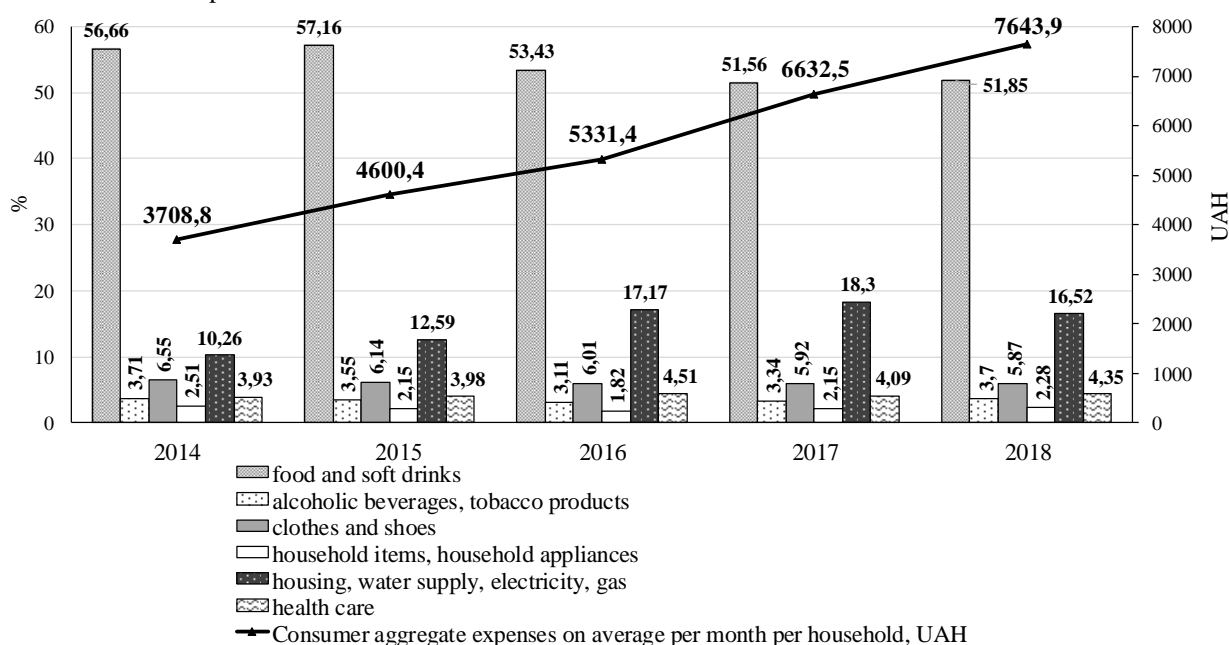


Figure 2. The structure of total consumer spending of households in Ukraine on average per month in 2014-2018, %

Source: compiled by authors according to the data of the State Statistics Service of Ukraine [10]

5) *Differentiation of the cost of food by social groups*, which is defined as the ratio of food costs of 20% of high-income households to food costs of 20% of low-income households.

Table 2 shows that in 2018, 20% of the households with the highest incomes (the highest quintile) spent on average UAH 5247 per month on food, and 20% of the households with the lowest incomes (lowest quintile) - UAH 3134. Based on this, the coefficient of differentiation of the cost of food by social groups was 1.67

against 1.62 in 2017. The greatest differentiation in consumption within the highest and lowest quintiles has been preserved for several years for products of animal origin (meat, fish, milk), as well as for the fruit and berry group (almost 2.1 times). Households that belong to the first quintile in terms of per capita equivalent income are practically on the verge of food danger, since the share of their consumer food expenditures approaches the threshold criterion and amounts to 59.6%.

Table 2

Food consumption in households by quintile group depending on the size of the average per capita equivalent total income in Ukraine in 2018

Quintile groups	on average per month per person, in terms of the major product, kg										The cost of food, UAH / month	The share of food costs in consumer spending, %
	Bread and bakery products	Meat and meat products	Fish and fish products	Milk and dairy products	Eggs, pcs.	Oil and other vegetable fats	Fruits, berries, nuts, grapes	Vegetables and melon products	Sugar	Potatoes		
First (lowest)	8,1	3,7	1,1	14,8	17,1	1,5	2,7	7,2	2,4	6,1	3134	59,6
Second	5,2	4,4	1,3	17,1	18,6	1,5	3,3	8,1	2,5	6,3	3617	56,5
Third	8,6	4,9	1,3	19,6	19,4	1,5	3,7	9,1	2,8	6,7	4079	54,2
Fourth	8,4	5,4	1,5	20,4	20,6	1,5	4,2	9,5	2,8	6,3	4460	52,8
Fifth (highest)	8,7	6,5	1,8	24,2	21,7	1,6	5,6	11,0	3,1	6,4	5247	49,3
The ratio between the highest and the lowest quintiles, times	1,07	1,76	1,64	1,64	1,27	1,07	2,07	1,53	1,32	1,05	1,67	X

Source: compiled by authors according to the data of the State Statistics Service of Ukraine [10]

Therefore, the growth of population incomes on the basis of a general economic recovery and balanced state social policy aimed at preventing excessive differentiation of population incomes and, accordingly, consumption, are important "non-food" factors in strengthening food security.

6) *The capacity of the domestic market*, which is calculated in physical terms by product type and is equal to the product of food consumption and the average annual population.

The domestic market capacity indicator is an important component for compiling supply and demand

balances and determining food independence for particular products. The table below shows the capacity of the domestic market for certain types of food. Thus, due to the decrease in the volume of consumption of certain foods by the population, there is a decrease in the capacity of the domestic market, as can be seen from the analysis of table 3. A reduction in the capacity of the domestic market is observed for such types of food as potatoes, vegetables and melon products, eggs, fruits, berries and grapes, bread and bakery products.

Table 3

The capacity of the domestic market of certain products in Ukraine in 2014-2018, thousand tons

Types of products	2014	2015	2016	2017	2018	2018 to 2014	
						+/-	%
Meat and meat products	2447,8	2176,5	2188,8	2191,4	2478,6	30,8	101,26
Milk and dairy products	10080,8	8975,3	8921,5	8477,3	9661,5	-419,3	95,84
Eggs, pcs.	14026,2	11972,7	11370,1	11571,5	9610,9	-4415,3	68,52
Fish and fish products	502,2	367,7	408,8	457,8	708,2	206	141,02
Sugar	1642,4	1526,5	1418,1	1288,5	1365,8	-276,6	83,16
Oil and other vegetable fats	592,7	525,9	498,2	495,9	758,8	166,1	128,02
Potatoes	6379,7	5879,5	5953,3	6078,2	3186,8	-3192,9	49,95
Vegetables and melon products	7384,1	6875,8	6971,1	6769,1	4502,0	-2882,1	60,97
Fruits, berries, nuts, grapes	2366,4	2176,5	2116,4	2238,0	1922,2	-444,2	81,23
Bread and bakery products	4909,2	4412,8	4301,0	4272,5	4198,5	-710,7	85,52

Source: compiled by authors according to the data of the State Statistics Service of Ukraine [10]

Under conditions of increasing the purchasing power of the population and food, including public catering establishments, to the level of European countries, the capacity of the domestic market can grow up to 20% [6]. It should also be noted, that in recent years

in Ukraine the production of meat and meat products (especially cattle), eggs, sugar, potatoes, vegetables is unprofitable for a great number of agricultural producers. This means that appropriate measures of state support for producers and price regulation are needed for

proper nutrition of the population with these types of food at affordable prices.

7) *Food independence for an individual product*, that is equal to the ratio of import volume and domestic market capacity in physical terms. The maximum limit criterion is set at 30%.

The satisfaction of the population food needs, within the limits of their purchasing power, is mainly ensured by domestic products. At the same time, the share of imports in 3 food groups traditionally exceeds the established 30 percent limit criterion for this indicator. The highest level of import dependency - almost 80% - is observed for the group "fish and fish products", since 90% of imports come from species of fish caught exclusively in the waters of the marine economic zones of other states, that is associated with the

peculiarities of their biological cycle. Moreover, it should be noted that the insufficiently active development of domestic fish farming, as well as a growth in the purchasing power of the population due to an increase in real disposable incomes (for 2018 a "plus" of 9.9%) became factors for an increase in import dependency over the indicated group by 6 percentage points during the year. Also the 70% of the import of fruit and berries are exotic fruit that are not grown in Ukraine, but are in demand and the import of vegetable oil is almost entirely related to its tropical species, that are not produced in Ukraine, but are widely used by domestic enterprises in the production of food and non-food products.

Table 4

Calculation of import dependence of Ukraine by food groups in 2018

Types of products	Imports of products in terms of the main product, thousand tons	The volume of domestic food consumption thousand tons	Import dependence, %		
			2017	2018	2018+/- 2017
Bread and bakery products	176	5610	3,1	3,7	0,6
Meat and meat products	283	2232	12,7	10,6	-2,1
Milk and dairy products	180	8355	2,2	1,6	-0,6
Fish and fish products	394	497	79,3	73,5	-5,8
Eggs, pcs.	4	671	0,6	1,0	0,4
Vegetables and melon products	188	6927	2,7	1,9	-0,8
Fruits, berries, nuts, grapes	878	2445	35,9	36,5	0,6
Potatoes	28	5893	0,5	0,3	-0,2
Sugar	3	1260	0,2	0,5	0,3
Oil and other vegetable fats	238	555	42,9	48,2	5,3
- incl. sunflower oil	1	420	0,2	0,2	0

Source: compiled by authors according to the data of the State Statistics Service of Ukraine [10]

The need to ensure food security requires maintaining an appropriate level of food self-sufficiency, provided that effective state support for domestic producers of agricultural products and import control are used to protect the domestic market from competition.

The Ukrainian agricultural market is moderately protected, but more closed than the industrial market. The average duty rate (most favored nation treatment) for agricultural products is 9.2%, while for non-agricultural products it is 3.8%. A higher level of protection is established for products of animal origin and dairy products, as well as cereals and sugar. The market of cotton, coffee and tea, drinks, oils and fats, as well as vegetables and fruit are less protected. For comparison: in the EU countries, in particular in Poland and Hungary, the average duty rate for agricultural products is 11.1%, in Belarus – 11.3%. The dynamics of this indicator is largely determined by the strengthening of integration trends in Ukraine, including the signing of international agreements on free trade with 45 countries of the world, providing for the abolition of trade restrictions and duties in mutual trade between countries, and the intensification of preparation for signing such agreements with other countries (Turkey, China, Israel) [11].

In order to assess the state of food security in the

world, The Economist Intelligence Unit with the support of the global agricultural company Corteva Agriscience annually prepares and publishes a report Global Food Security Index (GFSI). GFSI considers the core issues of affordability, availability, and quality across a set of 113 countries. The index is a dynamic quantitative and qualitative benchmarking model, constructed from 34 unique indicators, that measures these drivers of food security across both developing and developed countries [5]. GFSI 2019 highlights the potential environmental threat to food security and demonstrates how appropriate investment and progress in food innovation can help reduce this risk.

Ukraine slightly improved the overall score compared to last year, but the growth rates of many other countries were much higher, as a result Ukraine took 76th position in the ranking of 2019. In 2018, Ukraine ranked 63rd. Moreover, in 2015 Ukraine took 59th place (56.1 points), in 2014 – 53rd place (57.7 points), in 2013 - 51st place (57.5 points). As we can see, the rating of Ukraine is deteriorating every year.

The main strengths identified in the Index for Ukraine are food safety, a low proportion of the population below the global poverty line, minimal changes in average food expenses and low food losses. Compared to the global average, Ukraine has better indicators in financing food safety programs, the availability

of appropriate storage facilities for crops and the ability to store food safely. Railway infrastructure, dietary diversity, the presence of micronutrients in food and the percentage of the population with access to drinking water are also positive indicators. The main challenges for the country are corruption, political instability, and insufficient government spending on agricultural research and development, and a lack of food standards. Compared to the world average, GDP per capita in Ukraine is very low, as well as poor road and port infrastructure. Farmers' access to financing and a very small share of land equipped for irrigation were also factors in decreasing the GFSI.

Despite achieving high levels of food quality indicators, there is the problem of antimicrobial resistance (AMR) through the widespread use of antibiotics in agriculture. This causes a number of negative consequences, as it reduces the effectiveness of the treatment of many diseases and even leads to death that should be taken into account in the context of COVID-19. According to experts, by 2050 the annual mortality from the effects of antimicrobial resistance in the world will increase to 10 million people / year. In addition, AMR can cause significant and global health care costs, other

economic and social losses. We should also pay attention to the trend of increasing use in the processing of raw materials a significant amount of chemicals and natural substitutes. The positive effects of their use (increasing shelf life and reducing costs per unit of output) are offset by a negative impact on consumer health and deterioration in food security. In addition, the use of pesticides and other agrochemicals in cultivation crops, due to their residues in food products, leads to an increase in the level of diseases and, as is observed in 2020, to the mass death of insects, in particular bees, in many regions Ukraine (Zaporizhzhya, Kirovograd, Odessa, Vinnytsia, Chernivtsi, Khmelnytsky, Rivne, Mykolaiv, Ivano-Frankivsk and Poltava regions). A sharp decline in the bee population leads to a significant reduction in the production of such useful products for humans as honey and propolis, and also causes more global problems – unde-pollination of plants, which in turn will reduce their yields.

According to the following below Table 5, Ukraine, having significant agricultural potential, lags behind both the rating countries and the integral index components from the reference countries – closest neighbors and competitors.

Table 5

Positions of individual countries on the Global Food Security Index GFSI-2019

Global ranking		Country	Overall Score		Affordability		Availability		Quality and safety	
2019	2018		2019	2018	2019	2018	2019	2018	2019	2018
24	26	Poland	75.6	75.4	81.1	76.4	69.3	75.0	79.5	74.1
34	30	Hungary	72.7	72.8	80.8	75.6	66.1	70.5	70.5	72.0
36	44	Belarus	70.9	65.7	76.0	67.6	62.9	63.4	80.2	67.1
38	38	Romania	70.2	68.9	79.3	67.5	64.3	68.8	64.1	72.6
41	48	Turkey	69.8	64.1	74.7	65.3	64.8	60.9	71.1	70.1
42	42	Russia	69.7	69.0	79.8	70.5	60.1	61.0	70.9	75.2
76	63	Ukraine	57.1	54.1	63.9	55.7	50.0	50.2	59.6	61.0

Source: compiled by authors according to the data of the GFSI-2019 and GFSI-2018 [5]

For the second year in a row, Singapore (84.7), Ireland (84.0), and the United States (83.7) maintained their top three positions as food security leaders, despite adding new indicators to the ranking, including food spending, agricultural infrastructure, and food standards.

GFSI-2019 shows that almost all countries within this Index (88%) have sufficient food supply for their population. However, according to the report of the Food and Agriculture Organization of the United Nations on the state of food security and nutrition in the world, more than 820 million people are starving. This is a widespread problem: more than a third of the countries evaluated by the GFSI indicate that more than 10% of their population is undernourished.

Recognizing the growing impact of the global climate crisis and the depletion of natural resources, the GFSI also includes “Natural Resources and Sustainability” as a separate additional category of data in the other three established dimensions of food security. When this factor was taken into account in the analysis, overall score fell in all countries, thus emphasizing the vulnerability of global food systems to such threats as drought, floods and rising sea levels. For Ukraine, the impact was negligible – the position decreased from 76

to 77 places.

Conclusions. The current crisis in the Ukrainian economy determines the deepening of socio-economic problems, which in turn lead to deterioration in the food supply of the population.

The conducted assessment of the state of food security in Ukraine has detected that the main threats to food security of the country is the unbalanced consumption of food. Malnutrition is noted in the following food groups, such as meat, milk, fish, fruits and berries. The high differentiation of living standards of the population by social groups and the economic inaccessibility of food due to low and unstable incomes of the population, the rising of consumer prices for food products at a faster rate than incomes do not allow ensuring food security at a sufficient level for high-quality and nutritious nutrition of the population.

In addition to the analyzed problems, there are a number of other real internal and external threats to the food security of Ukraine, including declining in food quality, which is caused, on the one hand, by the desire of producers to reduce the cost of their product in the context of inflationary processes and falling solvency of the population, and on the other hand, the imperfection of the legislative fields and certification systems,

inconsistency of quality and safety standards; underdeveloped transport infrastructure, reduces access to remote, especially in rural areas, and their uninterrupted supply of basic types of food; a high degree of shadow economy, food smuggling, which poses a threat not only to the national economy, but also to human health; lack of competitiveness of domestic agricultural producers, deterioration of the material and technical base, low level of investment and innovative activity of enterprises; imperfect financial and tax policy of the government, etc.

To solve these problems and counter threats to food security, it is necessary to outline and implement a number of preventive measures of state policy, in particular: ensuring the balance and efficiency of the domestic agricultural market and its price regulation; promoting the competitiveness of domestic agricultural producers and protecting their interests in the domestic and foreign markets; targeted allocation of funds from the sale of agricultural products to the development of the agricultural sector, in particular its material and technical base; modernization of supply infrastructure; settlement of land issues, completion of the formation of a system of standardization and certification of products; increasing incomes of the population (in particular, by creating new jobs, supporting small and medium-sized businesses, subsidizing, expanding nutrition programs for children), which will help to achieve rational consumption standards; promoting the healthy nutrition principles among consumers, etc.

The analysis of the level of food security for a wide range of indicators demonstrated that Ukraine has all the possibilities not only to ensure food security in the domestic market, but also to get a significant impact on its strengthening at the global level. To improve position of Ukraine in the global food security rating, it is necessary to focus on creating an effective system of state regulation of the food market, which would include the development and implementation of monitoring nutrition of the population, the establishment of a transparent mechanism for providing state guarantees of food safety and quality, as well as the implementation of the Ukrainian legal framework legislation in accordance with European practice, namely EU regulations in areas of food safety and quality.

Therefore, ensuring the proper level of food security requires an integrated approach to the development and implementation at the national, regional and local (urban and rural) levels of an effective mechanism, which will include measures of organizational, economic, regulatory, logistical, social and informational nature.

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