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The food problem of Ukraine

Potapova A., Pogrebskij T., Golub G., Głuszko S. **Problemy żywnościowe Ukrainy.** Dokonano analizy jednego z najważniejszych i najbardziej ostrych globalnych problemów współczesności: problemu żywnościowego. Stwierdzono, że problem wyżywienia należy do kategorii globalnych, ponieważ przyczynami jego pojawienia się są: nieefektywne zarządzanie państwem, wzrost liczby ludności, niszczenie zasobów rolniczych, ubóstwo, nieefektywność rolnictwa, urbanizacja, spadek powierzchni i żyzności gruntów ornych, zanieczyszczenie środowiska itp.

Потапова А., Погребский Т., Голуб Г., Глушко С. **Продовольственная проблема Украины.** Проанализировано одну из самых острых и важнейших глобальных проблем современности, которой является продовольственная проблема. Выявлено, что продовольственная проблема относится к категории глобальных потому, что причинами ее возникновения являются: неэффективное государственное управление; рост населения; истощения сельскохозяйственных ресурсов; бедность; неэффективность ведения сельского хозяйства; урбанизация; уменьшение площади и плодородия пахотных земель, загрязнение окружающей среды и тому подобное.

Потапова А., Погребський Т., Голуб Г., Глушко С. **Продовольча проблема України.** Проаналізовано одну з найгостріших і найважливіших глобальних проблем сучасності, якою являється продовольча проблема. Виявлено, що продовольча проблема належить до категорії глобальних тому, що причинами її виникнення є: неефективне державне управління; зростання населення; виснаження сільськогосподарських ресурсів; бідність; неефективність ведення сільського господарства; урбанізація; зменшення площі та родючості орних земель, забруднення навколишнього середовища тощо.

Key words: social security, food problem, population of Ukraine, global problems, agriculture

Słowa kluczowe: bezpieczeństwo socjalne, problem żywnościowy, ludność Ukrainy, problemy globalne, rolnictwo

Ключевые слова: социальная безопасность, продовольственная проблема, население Украины, глобальные проблемы, сельское хозяйство

Ключові слова: соціальна безпека, продовольча проблема, населення України, глобальні проблеми, сільське господарство

Abstract

One of the most acute and important global problem of our time, which is the food problem, is analyzed in this article. It was discovered that the food problem belongs to the category of global

problems because the reasons for its occurrence are following: inefficient public administration; population growth; depletion of agricultural resources; poverty; inefficiency of agriculture; urbanization; reduction of the area and fertility of arable lands, environmental pollution, etc.

Formulation of the problem

The food problem is a major strategic, current and urgent issue, the solution of which is of great importance in each of the country, because it is an intertwining of the interests of individuals, social groups, society and the world community as a whole.

Analysis of scientific research on this problem

Today, there are various scientific approaches that explain the essence of the global food problem. Theoretical and applied aspects of food problem and security, research of economic essence and mechanisms of its maintenance, are reflected in scientific papers of leading domestic and foreign scientists, among which are: K. Holikov, V. Geets, A. Shlapak, O. Hoychuk, M. Hrebenyuk, A. Dibrova, D. Donnan, O. Krasnorutsky, S. Kvasha, T. Lozynska, L. Kuchechuk, O. Chernienko, O. Shevchenko, V. Shcherban, L. Marmul, O. Mohylny, M. Odintsova, K. Pilipenko, I. Rummyk, P. Sabluk, L. Strashynska, A. Ulyanenko, J. Flint, E. Heikil, O. Shchekovysh, V. Shkaberin.

Many scientists believe that inefficient governance underpins food shortages. In 1981, A. Sen proved that in most cases, famine was caused not by lack of food, but by problems with the distribution of food (SEN, 2011).

Thomas Malthus (МАЛЬТУС, 2003) argued that productivity increases in arithmetic progression and population increases in geometric progression. These factors inevitably lead to decrease in life expectancy and hunger.

Today, there are various scientific approaches that explain the essence of the global food problem. V. Beregovy (БЕРЕГОВИЙ, 2011) and Yu. Luzan (ЛУЗАН, 2011) considered it as a part of economic security of the country. O. Hoychuk (ГОЙЧУК, 2003) investigated various reasons for its occurrence, among which the most important is the unevenness of production and consumption of food in the world.

It is impossible to single out the only reason that explain the growing of the global food problem. It is a combination of different factors that creates this challenge for society. The causes of the global food problem include: inefficient governance; population growth exceeding food production; depletion of agricultural resources; lack of funds to purchase food, poverty; lack of knowledge for effective agriculture; problems of urbanization; reduction of the area and fertility of arable lands, environmental pollution, etc.

Presentation of the main material and justification of the obtained research results

The global food problem is one of the most critical issue which even the enormous achievements of modern scientific, technological and innovative development cannot solve. Its economic content reflects the nature of social economic relations between individuals, the population and the country, particular countries of the world concerning the social reproduction of food products at all stages of production, distribution, exchange and consumption.

There are four groups of factors that affect the global food problem: natural conditions and location of the population (total area and structure of agricultural land, agricultural potential, climate, the ratio between population and food mass, etc.); world transport and communications, which provide a wide access of food to the foreign market; political situation in the world (positions of political forces, the presence of international communities, associations, the use of food supplies for political purposes); world economy and trade in their unity (food as a component of trade flows, the role of balance calculations).

The assessment and monitoring of the level of food security of countries is carried out according to the Global Food Security Index (GFSI), which is calculated since 2012 and published by The Economist Intelligence Unit

(МАЛЬТУС, 2003). The Global Food Security Index is a dynamic quantitative and qualitative benchmarking model based on 28 unique indicators that measures the level of food security in both developing and developed countries. The index comprehensively examines food security on three basic parameters, including the following: affordability, physical availability / availability (Availability), quality and safety (Quality and Safety). Since 2017, the Global Food Security Index has included the Natural Resources and Resilience adjustment factor, which takes into account the need to conserve resources, adapt to climate change and thrive (ПОНКО, 2014).

The main indicators are following: changes in ambient temperature, depletion of water resources (category "Resources and sustainable development"), which measure the impact on the environment worldwide. Among other key baselines for calculating the Global Food Security Index are: malnutrition, percentage of underdeveloped children, percentage of underweight children, food shortages, human development index, global gender equality index, EIU democracy index, obesity, etc.

Sub-indices include the following: affordability (share of food consumption in household incomes; percentage of population below the poverty line; GDP per capita; tariffs on agricultural imports; availability of social food support programs; availability of financial resources for farms), physical availability (food supply; average annual food supply; dependence on food aid; government research and development; agricultural infrastructure; availability of adequate food depots; road infrastructure; port infrastructure; agricultural productivity; political stability; corruption; urbanization; food losses) and safety (food product range; food standards; national food principles / regulations; national food strategy; food monitoring and surveillance; nutrient content; food security; the share of the population that has access to drinking water; availability of the food sector) and natural resources (external influence of natural resources).

The TOP-10 countries according to the Global Food Security Index in 2018 includes: Singapore (1st place; 85.9 points), Ireland (2nd place; 85.5 points), Great Britain (3rd place; 85 points), USA (4 place; 85 points), the Netherlands (5th place; 84.7 points), Australia (6th place; 83.7 points), Switzerland (7th place; 83.5 points), Finland (8th place, 83.3 points), Canada (9th place, 83.2 points), France (10th place, 82.9 points).

Belarus took the 44th place in the ranking of food security countries in 2018, as well as Poland, Hungary, Romania, Slovakia took 26th, 30th, 38th and 35th positions in the ranking respectively (*Global Food...*).

According to the GFSI food security index, in 2012–2013 Ukraine was on the 53rd place among 113 countries in the general rating of food security, and in 2015 it lost its position by 10 points. During 2016–2018, the country took 63rd in the overall food security ranking. In general, the food security index of Ukraine has fallen to 55.7 points out of 100 possible over the past seven years (table 1).

Based on the analysis of sub-indices of the global food safety index, the highest value in 2018 Ukraine received in the category "Food Quality and Safety" – 65.2 points (46th place), which is 4.9 points higher than the world average; in the category "Food affordability" – 54.1 points (66th place), which is 4.3 points lower than the world average. In the "Availability of food" category Ukraine received 53.8 points (73rd place) in 2018, which is 2.5 points lower than the world average value; in terms of natural resources and sustainable development – 57.5 points (76th place), which is 0.7 points lower than the world average value (fig. 1).

Agricultural resources dominate in Ukraine and the main resource of agricultural production is land. According to the State Statistics Service of Ukraine, in 2018 the total area of agricultural land in Ukraine was 41 489.3 thousand hectares, what was 68.7% of the total area of the state. In the structure of agricultural land 78.4% is arable land, 13.1% – pastures, 5.8% – hayfields (*Статистичний щорічник...*, 2019). Despite

Table 1. Ukraine's ranking of the food security index

Tabela 1. Ranking Ukrainy wg indeksu bezpieczeństwa żywnościowego

Таблица 1. Рейтинг Украины по индексу продовольственной безопасности

The value of the indicator		2012	2013	2014	2015	2016	2017	2018
The Food Security Index	The Rank	53	53	54	64	63	63	63
	The Value	57,8	57,6	56,6	54,4	55,2	54,1	55,7
The Affordability	The Rank	53	53	56	57	58	59	66
	The Value	57	57,4	57,6	57,1	57,2	55,7	54,1
The Physical Accessibility	The Rank	57	59	66	79	79	78	73
	The Value	55,6	55,2	52,4	48,7	49,6	50,2	53,8
The Quality and Safety	The Rank	45	46	46	48	47	51	46
	The Value	65,4	64,7	65,6	63	85,1	61	65,2
The Natural Resources and Sustainable development	The Rank		-	-	-	-	74	76
	The Value	-	-	-	-	-	58,2	57,5

Compiled on the basis of materials: *Global Food...*

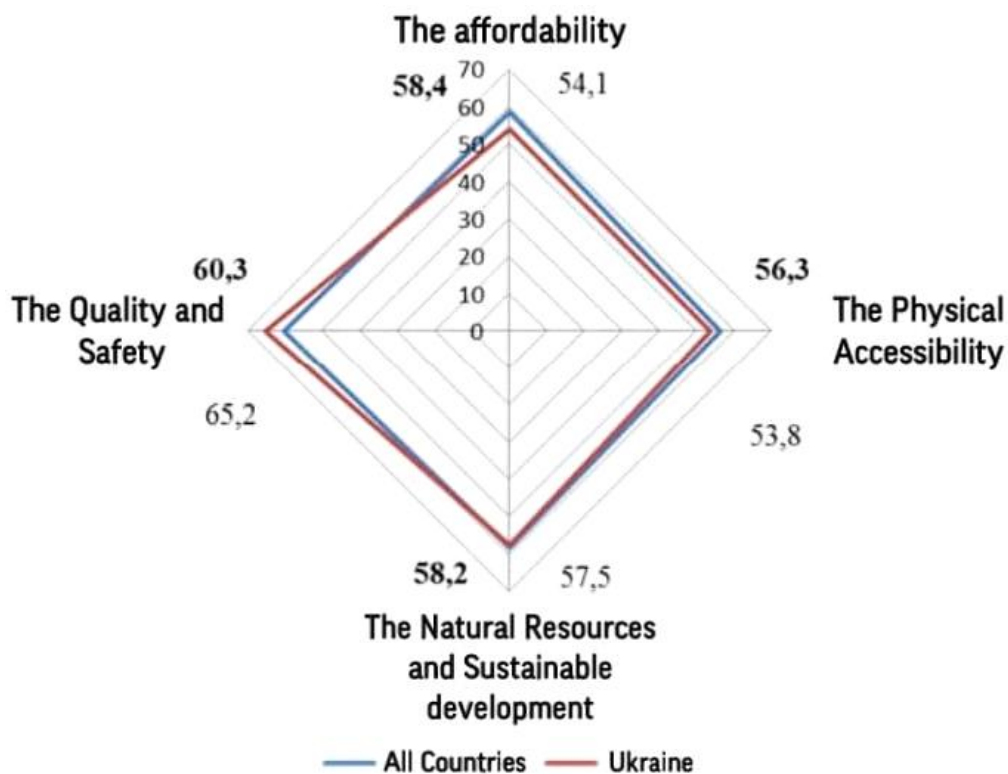


Fig. 1. Sub-indices of food security of Ukraine in 2018, points

Rys. 1. Subwskaźniki bezpieczeństwa żywnościowego Ukrainy w roku 2018, punkty

Рис. 1. Субиндексы продовольственной безопасности Украины в 2018 году, баллов

the decrease in land resources, Ukraine continues to take one of the leading positions in the world in terms of area of agricultural land

(third place) and arable land (second place) per capita, respectively – 0.93 hectares and 0.74 hectares (fig. 2).

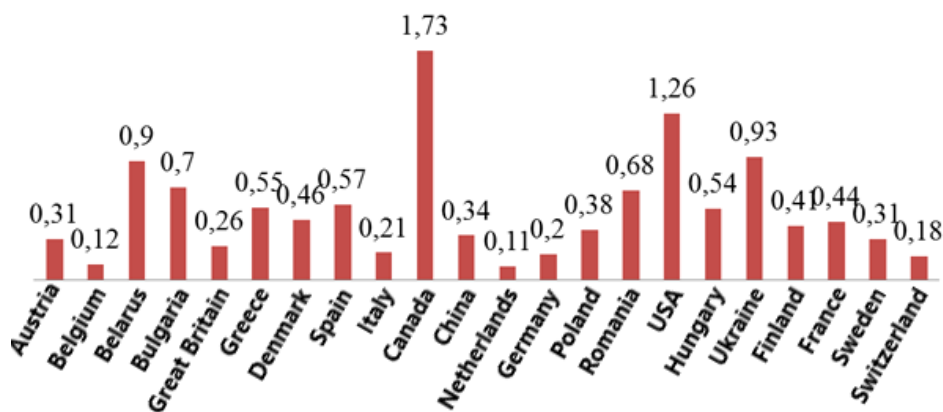


Fig. 2. Square of agricultural land per capita in some countries and in Ukraine in 2019, ha
Rys. 2. Powierzchnia użytków rolnych na 1 mieszkańca w wybranych krajach świata i na Ukrainie w roku 2019, ha

Рис. 2. Площадь сельскохозяйственных угодий на одного жителя в отдельных странах мира и в Украине в 2019 году, га

Favorable climate conditions contribute to the development of agriculture of the country.

In 2018, Ukraine took first place in the ranking of plowed lands of the world with an arable area of 33.5 million hectares. The country has significant land potential, what is 5.7% of

Europe. Among the 60 million hectares of the territory of our country, more than 70% are agricultural lands. In terms of chernozem area (28 million hectares), Ukraine takes fourth place in the world after Russia, the United States and China (fig. 3).

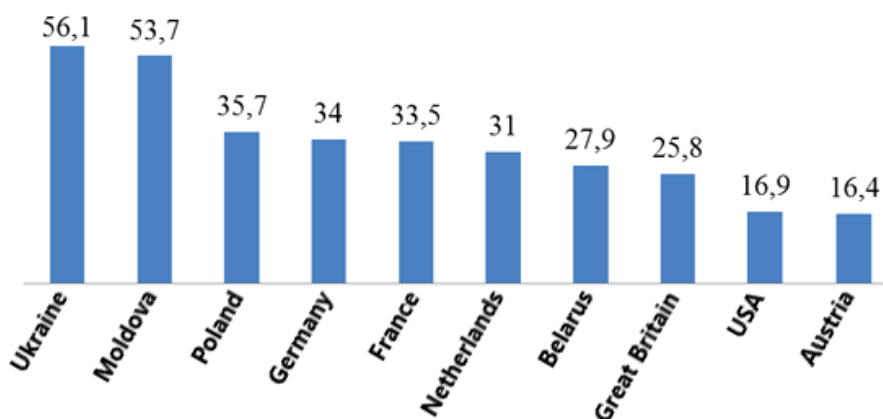


Fig. 3. Countries with the largest share of arable land in relation to the square of the country, 2019 (%)
Rys. 3. Państwa z największym udziałem gruntów ornych w stosunku do powierzchni państwa, 2019 (%)
Рис. 3. Страны с наибольшей долей пашни по отношению к территории государства, 2019 (%)

Conclusions

Thus, in order to improve Ukraine's food security, the primary strategic goal should be to reform the agro-industrial complex, which will increase the living standards of the population by increasing food production and labor pro-

ductivity, as well as the development of scientific and technological progress.

The food security of the country is guaranteed by a set of economic and social conditions that ensure the development not only of agriculture and the food sector, but also the stability of the entire economy. Accordingly, it provides for the implementation of the following

measures: conducting an effective agricultural policy, creating economic preconditions for ensuring stable management methods; implementation of comprehensive strategies for the development of the agricultural sector of the economy in order to increase food production and increase its efficiency.

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