

cost of food produced at the expense of economy on staff salaries; increasing consumer attention to online restaurant reviews before visiting, as well as actively positioning the restaurant business through Facebook, Instagram in the Ukraine waste from plastic waste in EU and US countries; development of fast food franchises with the concept of healthy ingredients and healthy food, self-service kiosks and mobile ordering and payment apps for the US and EU; food delivery, online booking services, payments through the mobile application system, automatic account sharing among customers, etc. — for Ukraine). Prospects for further research in this area are to substantiate the marketing strategies of restaurant business in a crisis.

Key words: consumer's behaviour, marketing, restaurant service market, food culture, restaurant business development.

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STATE OF UKRAINE FOOD SECURITY: MAIN INDICATORS

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СТАН ПРОДОВОЛЬНОЇ БЕЗПЕКИ УКРАЇНИ: ОСНОВНІ ІНДИКАТОРИ

Objective. *The purpose of the article is to study the state of Ukraine food security at this stage of the state development using the food security indicators system.*

Methods. *The scientific results of the study were obtained applying the following methods: theoretical generalization and comparison (for the study of meaningful aspects of the definition of «food security»), analysis and synthesis (for analysis of food security indicators system), abstract-logical method (for establishing the trends of Ukraine food security for the analyzed period).*

Results. *On the basis of the analysis of the state of Ukraine food security by the main indicators, a significant lag of Ukraine in ensuring food security has been revealed. Thus, according to the indicator of the daily energy value of a person's diet, in 2014–2018 the calorie content of the diet has been steadily decreased, approaching the limit value (2500 kcal), and the major part of*

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the calorie content of the diet in 2018 is provided by the consumption of crop production — 1919 kcal (71 %). According to the indicator “maintaining a person’s diet with basic types of products” it has been found that only four, the most economically available food groups consumed (or exceeded) the established rational norm (bread and bread products; vegetables and melons; potatoes; vegetable oil). In other groups, the consumption ratio was less than one.

It has been found that over the 2016–2018 period, the structure of spending on food has not undergone significant changes, and the share of expenditure on food in total household expenditure is very high. It has been determined that according to the indicator “food independence by individual product” satisfaction of the population’s needs for food in 2016–2018 was provided at the expense of domestic production, only for three groups of products the share of imports exceeded the established 30 % limit value.

It has been established that despite the fact that agriculture is the leading link in the economy, achieving food security in Ukraine is ruled out by a number of factors, which is reflected in its low position on the Global Food Security Index (GFSI). Factors that directly affect the country’s food security include: significant disparities in consumption of crop and livestock products by the population; the high proportion of consumer spending on food in the structure of total costs; high import dependency by product category.

Key words: food security, food, products, Ukraine, consumption, consumer spending.

Problem statement. Ending hunger, achieving food security, improving nutrition and promoting sustainable agriculture have formed the basis for the second of 17 United Nations (UN) Sustainable Development Goals (SDGs) by 2030.

Achieving these goals requires addressing a range of issues, from gender parity and demographic aging to global warming. The agricultural sectors need to become more productive tools to address these issues, and so food security is a priority for all countries, whether they are developed or developing countries.

The agro-industrial complex of Ukraine is now a leading link in the national economy, which largely determines the socio-economic development, accounting for 14 % of gross value added and over 40 % of the country’s exports. At present, the agrarian sector is perhaps the only engine of the Ukrainian economy. Almost 90 % of the country’s food needs (within its purchasing power) are met through domestic production [1, c. 22].

Nevertheless, according to The Global Food Security Index (GFSI) 2019, Ukraine ranked 76th, and down 13 positions from 2018, with 6 strengths (any indicator above 75.0) and 5 challenges (any indicator below 25.0) [2].

Thus, the analysis of the state of Ukraine food security by the indicators will allow to eval-

uate the main successes, to identify problems in the provision and achievement of food security.

Analysis of recent research and publications. The process of achieving and securing food security since the 1970s has been the subject of research for many international organizations. These include: World Food Summit (WFS) [3], Food and Agriculture Organization of the United Nations (FAO) [4], United Nations Children’s Fund (UNICEF) [5], The World Bank [6]. The research of theoretical bases of the concept of «food security» is devoted to the work of many scientists, among them S. Bekenov [15], M. Yermoshenko [16], G. Mahovikova, V. Osipov [13] etc.

The objective of the article. The purpose of the article is to study the state of Ukraine food security at this stage of the state development using the food security indicators system.

Presentation of the main research material. The term “food security” came up in the context of the World Food Summit (1974) as “the availability at any time of the world’s essential food supplies for sustained consumption and offsetting fluctuations in production and prices” [3, c. 3]. It was seen as ensuring at the international and national levels the availability and price stability of staple foods.

In Poverty and Hunger (1986), the World Bank defined food security as “access for all

people at all times to sufficient food for an active and healthy life” [6].

This definition was again refined in FAO's The State of Food Insecurity in the World (2001) — “food security — a situation where all people at all times have the physical, social and economic access to adequate, safe and nutritious food that satisfies their dietary needs and nutritional preferences for an active and healthy life” [4]. So, in addition to physical and economic, it is also about social access to food.

In 2008, the United Nations Children's Fund paid special attention not only to the availability of food, but also to its use, assimilation, and formulated its own definition — “food and nutritional security is achieved when food is appropriate (by quantity, quality, safety, socio-cultural acceptability) is accessible and accessible to all people at any time and appropriately used and utilized for a healthy and active lifestyle” [5].

In addition to international organizations, the concept of “food security” is reflected in the works of a significant number of scientists. S. Bekenov claims that food security is “the provision of food resources, guarantees and potential, the ability of the state to meet the needs of the population as a whole and each citizen individually, in food at volumes, assortment and quality, sufficient and necessary for physical and social development, ensuring health and expanded population reproduction” [7].

M. Yarmoshenko considers this category as “the state of the economy” and notes that “food security is the state of the country's economy, which is characterized by balance and resistance to the negative impact of internal and external threats, the ability, based on the implementation of national economic interests, to ensure the effective and sustainable development of domestic economy and social sphere « [8, c. 10].

However, food security is often seen as a “state ability”. V. Osipov and G. Makhovikova also adhere to this point of view, defining food security as “the ability of the state to provide the population's needs with food products in volumes, quality and assortment that meet accepted standards and norms, provided with appropriate resources, potential and guarantees” [9].

In Ukraine, the assessment of food security is carried out in accordance with the Methodol-

ogy for determining the main food security indicators (Methodology), approved by the Cabinet of Ministers of Ukraine Dec. 5, 2007 № 1379 “Some issues of food security”, which contains seven indicators [10].

Indicators are the benchmarks that determine the boundary of negative processes, signaling market participants about possible adverse areas, reducing the global level of national security [11]. They make it possible to quantify and signal the future danger, implement a set of program-targeted measures to stabilize the situation.

According to the Methodology, the main indicators and criteria for food security are [10]:

1) Daily energy value of a person's diet is the sum of the product per unit mass of certain types of products consumed by the person during the day and their energy value. The limit value is set at 2500 kcal per day, with 55 % of the daily ration being provided by the consumption of animal products;

2) Maintaining a person's diet with basic types of products — the ratio between the actual consumption of an individual product and its rational norm;

3) Adequacy of grain stocks in state resources — the ratio between the volume of food grain in the state reserve and the volume of domestic consumption of bread and bread products in terms of grain. The limit value for this indicator is considered to be its 17 % level, which corresponds to 60 days of consumption;

4) Economic affordability of products is the share of total food expenditure in the aggregate household expenditure. The limit value for this indicator is considered to be its 60 % level;

5) Differentiation of the cost of food by social groups — the ratio between the cost of nutrition of 20 % of the highest income households and the cost of nutrition of 20 % of the lowest income households;

6) Internal market capacity of individual products is the product of consumption of a certain product and the average annual population;

7) Food independence by individual product is the ratio between the volume of imports of an individual product in kind and the capacity of its internal market. The limit value for this indicator is considered to be 30 %.

In 2018, the average daily nutrition of the Ukrainian diet was 2706 kcal, which is 8 % higher than the limit value (2500 kcal). Compared to 2014, calorie consumption by the Ukrainian population decreased by 7.9 % (see Fig. 1).

For the period 2014–2018, the calorie content of the diet has been steadily declining, approaching the limit value. By structure, the major part of the calorie diet in 2018 is provided by the consumption of crop products — 1919 kcal, or 71 %. Livestock production is 29 %, which is 787 kcal and more than 2 times lower than the minimum value (55 %). Thus, in Ukraine the population consumes, on average, an insuf-

Dynamics of average daily calorie diet of Ukrainians

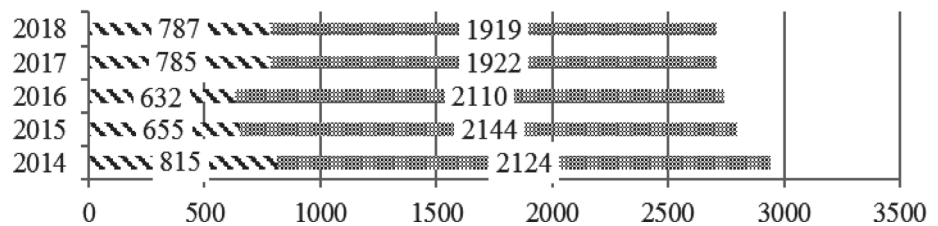


Fig. 1. Dynamics of average daily calorie diet of Ukrainians for the period 2014–2018 (developed by the author on the basis of [12])

ficient amount of animal products, as evidenced by the imbalance of their diet in this indicator. Statistics show that the average Ukrainian tends to be vegetarian.

The actual consumption of staple products during the three-year period showed positive dynamics, the reduction was observed only in such categories as bread, milk products, sugar, while for other foodstuff this indicator continued to increase (see Table 1).

Table 1

Sufficiency indicator (developed by the author on the basis of [12])

Products	Rational norm	Actual consumption in 2018	Sufficiency indicator	Actual consumption in 2017	Actual consumption in 2016
Bread and bakery products (in terms of flour)	101,0	99,5	0,99	100,8	101,0
Meat and meat products	80,0	52,8	0,66	51,7	51,4
Milk and milk products	380,0	197,7	0,52	200,0	209,5
Fish and fish products	20,0	11,8	0,59	10,8	9,6
Eggs (pcs.)	290	275,0	0,95	273,0	267,0
Vegetables and melons	161,0	163,9	1,02	159,7	163,7
Fruits, berries and grapes	90,0	57,8	0,64	52,8	49,7
Potato	124,0	139,4	1,12	143,4	139,8
Sugar	38,0	29,8	0,78	30,4	33,3
Vegetable oil of all kinds	13,0	13,0	1,00	13,0	11,7

Nevertheless, Table 1 shows that only by four of the most economically available food groups consumption was at level (or exceeded) of a rational standard: bread and baked goods; vegetables and melons; potato; vegetable oil. In other groups, the consumption ratio was less than one. In 2018, in Ukraine by

most major food groups, actual consumption was below rational standards, in particular, the recommended level of meat was provided by 66 %, fruits — by 64 %, fish — by 59 %, milk — by 52 %. This situation is due to the constant rise in prices for these categories of goods.

As in previous years, actual consumption of the “potato” food group exceeds the rational norm by 13 %, which is evidence of an imbalance in the population nutrition that trying to meet their own energy needs through more economically available products.

In 2018, the average monthly total cumulative consumer spending per household was

7655 UAH per month, which is at 1021 UAH more than in 2017. Of the indicated amount, an average of 4107 UAH was spent on food every month by the household. The affordability indicator was 53.7 %, showing an increase of 0.3 % by 2017, with its 60 % limit value (see Table 2). In this case, it is not about improving economic access to food by increasing the purchasing

Table 2

Structure of total consumer spending on food in 2016–2018 (developed by the author on the basis of [12])

Products	2016	2017	2018
Bread and bakery products	15 %	15 %	14 %
Meat and meat products	22 %	24 %	25 %
Fish and fish products	5 %	5 %	5 %
Milk and milk products	13 %	15 %	14 %
Eggs	3 %	3 %	3 %
Oil and other vegetable fats	4 %	3 %	3 %
Fruits	6 %	7 %	6 %
Vegetables	9 %	9 %	9 %
Potato	3 %	3 %	3 %
Sugar and sugar products	8 %	8 %	7 %
Non-alcoholic drinks	6 %	6 %	5 %
Dining out	3 %	-	4 %
Other	3 %	2 %	2 %

power of Ukrainians, but about reorienting family budgets for utility bills, even to the detriment of quality and quantity of food (confirmed by indicators 1 and 2). [14]. The share of expenses for the food products purchase in Ukraine is 4.5 times higher than in EU-28, where it averages 12.2 %: from 8.2 % in the UK to 27.8 % in Romania [13]. In the domestic economy, this trend indicates a low level of population average incomes, as well as an uncontrolled increase in prices for products in the domestic market.

Table 2 shows that during the analyzed period, the structure of expenditures for food has not undergone any significant changes. Growth occurred only in expenditure on meat, meat products and milk. In 2018, as in the previous three years, the largest share of consumer spending is spent on bread (14 %), meat (25 %), milk (14 %).

The food needs of the population, within the limits of its purchasing power in 2018, as in the previous two years, were mainly provided through domestic production. At the same time, for three food groups for the period 2016–2018, the share of imports traditionally exceeds the 30 % limit value (see Table 3).

According to the Table 2, the highest level of import dependency (almost 80 %) was recorded under the category “fish and fish products”. This situation occurred because of significant proportion of imported supplies come from fish that are harvested exclusively in the waters of the maritime economic zones of other countries, due to the peculiarities of their biological cycle [14].

Exceeding the limit value in the category “vegetable oils” (42.9 %) is due to the import of tropical oils (palm and coconut oils, which occupy more than half of the import), as they are in great demand among domestic producers of the food industry. Import dependency in the category “fruits and berries” (36.5 %) is associated with the import of significant volumes of exotic fruits, the cultivation of which is not typical for Ukraine (bananas, citrus fruits, kiwi, etc.) [14].

The analysis of the state of Ukraine food security according to the main indicators made it possible to establish that despite the fact that agriculture is currently the leading link in the national economy, the country still

Table 3

Import dependency by food groups in 2016–2018 (developed by the author on the basis of [12, 13, 14])

Products	Volume of imports in 2018	Volume of domestic food consumption	The index of import dependency, %		
			2018	2017	2016
Bread and bakery products (in terms of flour)	176	5610	3,1	3,7	3,3
Meat and meat products	283	2232	12,7	10,6	8,3
Milk and milk products	180	8355	2,2	1,6	1,2
Fish and fish products	394	497	79,3	73,5	74,6
Eggs (pcs.)	4	671	0,6	1,0	0,8
Vegetables and melons	188	6927	2,7	1,9	1,9
Fruits, berries and grapes	878	2445	35,9	36,5	34,5
Potato	28	5893	0,5	0,3	0,5
Sugar	3	1260	0,2	0,5	0,4
Vegetable oil of all kinds	238	555	42,9	48,2	44,1
Including sunflower oil	1	420	0,2	0,2	0,2

failed to achieve significant success in ensuring food security, which is reflected in the GFSI ranking and other studies. The main reasons for this are:

- 1) significant disparities in consumption of crop and livestock products by the population;
- 2) the high proportion of consumer spending on food in the structure of total costs;
- 3) high import dependency by product category.

Summary. Analysis of the state of Ukraine food security according to the main indicators showed a significant lag in Ukraine in ensuring food security. Thus, according to the indicator of the daily energy value of the human diet, in 2014–2018 the calorie content of the diet was constantly decreasing, approaching the limit value (2500 kcal), and the bulk of the calorie content of the diet in 2018 is provided by the consumption of crop products — 1919 kcal (71 %). According to the indicator “maintaining a person’s diet with basic types of products” for the analyzed period, for only four of the most economically accessible food groups, consumption was at the level (or exceeded) the established rational norm (bread and bakery products; vegetables and melons; potatoes, vegetable oil). For the remaining groups, the sufficiency coefficient of consumption was less than one. An analysis of the economic affordability of products showed that for the period 2016–2018 the structure of food expenses has not changed much, and the share

of food expenses in total household expenditures is very high. According to the indicator “food independence by individual product” satisfaction of the population’s needs for food in 2016–2018 was provided at the expense of domestic production, only for three groups of products the share of imports exceeded the established 30 % limit value.

Список літератури

1. Національна доповідь «Цілі сталого розвитку: Україна». URL : http://un.org.ua/images/SDGs_NationalReportUA_Web_1.pdf.
2. The Global Food Security Index. Available at : <https://foodsecurityindex.eiu.com/>
3. Report of the World Food Conference: Rome, 15–16 November 1974. Available at: https://digitallibrary.un.org/record/701143/files/E_CONF.65_20-EN.pdf.
4. The State of Food Insecurity in the World 2001: FAO. 2002.
5. Гумеров Р. Р. Методологические вопросы измерения и оценки национальной продовольственной безопасности. *Менеджмент и бизнес администрирование*. — 2011. № 2. С. 21–23.
6. Poverty and Hunger: Issues and Options for Food Security in Developing Countries. World Bank. 1986.
7. Бекенов С. С. Продовольственная безопасность — как составляющая экономической безопасности. *Вестник КРСУ*. 2004. № 2. С. 16–22.

8. Єрмошенко М. М. Фінансова безпека держави: національні інтереси, реальні загрози, стратегія бачення. К. : Київ. нац. торг.-екон. ун-т, 2001. 309 с.

9. Есипов В. Е., Маховикова Г. А. Внутренние и внешние угрозы продовольственной безопасности России. СПб. : Изд. СПб. гос. университета экономики и финансов, 2005.

10. Some issues of food security (2007). The electronic catalog of Verkhovna Rada of Ukraine (The Cabinet of Ministers of Ukraine Resolution). Available at : <http://zakon4.rada.gov.ua/laws/show/1379-2007-%D0%BF>.

11. Наказ Міністерства економіки України «Про затвердження методики розрахунку рівня економічної безпеки України» № 60 від 02.03.2007 року. URL : <http://zakon.nau.ua/doc/?uid=1022.4251.0>.

12. Державна служба статистики України. URL : <http://www.ukrstat.gov.ua>.

13. Продовольча безпека в Україні у 2018 році. Огляд основних індикаторів. URL : <http://edclub.com.ua/analitika/prodovolcha-bezpeka-v-ukrayini-u-2018-roci-oglyad-osnovnyh-indykatoriv>.

14. Щербина С. Аналітичне дослідження стану продовольчої безпеки в Україні у контексті запровадження адресної допомоги у продуктах харчування для малозабезпеченого населення. URL : http://www.aau.org.ua/media/publications/743/files/PolicyResearch_2018_12_17_10_21_51_429866.pdf.

References

1. *Natsionalna dopovid «Tsili staloho rozvytku: Ukraina»* [National Report «Sustainable Development Goals: Ukraine»]. Available at: http://un.org.ua/images/SDGs_National_ReportUA_Web_1.pdf.

2. The Global Food Security Index. Available at : <https://foodsecurityindex.eiu.com>.

3. Report of the World Food Conference: Rome, 15–16 November 1974. Available at : https://digitallibrary.un.org/record/701143/files/E_CONF.65_20-EN.pdf.

4. The State of Food Insecurity in the World 2001: FAO. 2002.

5. Gumerov, R. R. (2011). *Metodologicheskie voprosy izmereniya i otsenki natsionalnoy prodovolstvennoy bezopasnosti* [Methodological issues of measuring and assessing national food security]. *Menedzhment i biznes administrirovanie* [Management and Business Administration], no. 2, pp. 21–23.

6. Poverty and Hunger: Issues and Options for Food Security in Developing Countries. World Bank. 1986.

7. Bekenov, S. S. (2004). *Prodovolstvennaya bezopasnost — kak sostavlyayushchaya ekonomicheskoy bezopasnosti* [Food security as a part of economic security]. *Vestnik KRSU* [Bulletin of KRSU], no. 11, pp. 54–57.

8. Yermoshenko, M. M. (2001). *Finansova bezpeka derzhavy: natsionalni interesy, realni zahrozy, stratehiia bachennia* [State financial security: national interests, real threats, vision strategy]. Kyiv, KNUTE Publ., 309 p.

9. Esipov V. E., Makhovikova G. A. (2005). *Vnutrenniye i vneshniye ugrozy prodovol'stvennoy bezopasnosti Rossii* [Internal and external threats to Russia food security]. St. Petersburg, SPb. SUEF Publ.

10. Some issues of food security (2007). The electronic catalog of Verkhovna Rada of Ukraine (The Cabinet of Ministers of Ukraine Resolution). Available at : <http://zakon4.rada.gov.ua/laws/show/1379-2007-%D0%BF>.

11. Ministry of Economy of Ukraine (2007), “Resolution of the Ministry of Economy of Ukraine “On approval of the methodology for calculating the level of economic security of Ukraine”, available at : <http://zakon.nau.ua/doc/?uid=1022.4251.0>.

12. *Derzhavna sluzhba statystyky Ukrainy* [State Statistics Service of Ukraine]. Available at : <http://www.ukrstat.gov.ua>.

13. *Prodovolcha bezpeka v Ukraini u 2018 rotsi. Ohliad osnovnykh indykatoriv* [Food security in Ukraine in 2018. Overview of key indicators]. Available at : <http://edclub.com.ua/analitika/prodovolcha-bezpeka-v-ukrayini-u-2018-roci-oglyad-osnovnyh-indykatoriv>.

14. Shcherbyna, S. (2018). *Analitichne doslidzhennia stanu prodovolchoi bezpeky v Ukraini u konteksti zaprovadzhennia adresnoi dopomohy u produktakh kharchuvannia dlia malozabezpechenoho naselennia* [An

analytical study of the state of food security poor]. Available at : http://www.aau.org.ua/media/publications/743/files/PolicyResearch_2018_12_17_10_21_51_429866.pdf.

Мета — дослідити стан продовольчої безпеки України на даному етапі розвитку держави за допомогою системи індикаторів продовольчої безпеки.

Методи. Наукові результати дослідження було одержано з використанням таких методів: теоретичного узагальнення та порівняння (для дослідження змістовних аспектів дефініції «продовольча безпека»), аналізу та синтезу (для аналізу системи індикаторів продовольчої безпеки), абстрактно-логічного методу (для встановлення тенденцій стану продовольчої безпеки України за аналізований період).

Результати. На основі аналізу стану продовольчої безпеки України за основними індикаторами виявлено значне відставання України у забезпеченні продовольчої безпеки. Так, за індикатором добової енергетичної цінності раціону людини, у 2014–2018 рр. калорійність раціону постійно знижувалась, наближаючись до граничного значення (2500 ккал), а основна частка калорійності раціону в 2018 р. забезпечувалась за рахунок споживання продукції рослинництва — 1919 ккал (71 %). За показником «забезпечення раціону людини основними видами продуктів» встановлено, що тільки по чотирьох, найбільш економічно доступних продовольчих групах, споживання знаходилося на рівні (або перевищило) встановлену раціональну норму (хліб та хлібопродукти; овочі та багатанні; картопля; олія рослинна). По інших групах коефіцієнт достатності споживання був меншим від одиниці.

З'ясовано, що за період 2016–2018 рр. структура витрат на харчування не зазнала особливих змін, а частка витрат на продукти харчування у загальних видатках домогосподарств є дуже високою. Визначено, що за індикатором «продовольча незалежність за окремим продуктом» задоволення потреб населення у продовольстві у 2016–2018 рр. забезпечувалось за рахунок продукції вітчизняного виробництва, лише за трьома групами продуктів частка імпорту перевищувала встановлений 30 % граничний критерій.

Встановлено, що незважаючи на те, що сільське господарство є провідною ланкою економіки, досягнення продовольчої безпеки України унеможливується низкою чинників, що відображається в її низьких позиціях за Глобальним індексом продовольчої безпеки (GFSI). До чинників, що здійснюють безпосередній вплив на продовольчу безпеку країни, належать: значні розбіжності у споживанні продукції рослинництва та тваринництва; висока частка споживчих витрат на продовольство у структурі загальних витрат; висока залежність від імпорту за категоріями товару.

Ключові слова: продовольча безпека, продовольство, продукти, Україна, споживання, споживчі витрати.

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