

Anastasiya S. Poltorak¹

ASSESSMENT OF UKRAINIAN FOOD SECURITY STATE WITHIN THE SYSTEM OF ITS ECONOMIC SECURITY

The article presents the assessment of the current state of food security in Ukraine within the system of the country's economic security. Monthly average spending of Ukrainian households is analyzed, including the dynamics of food products affordability for population. The indicators of food security state in Ukraine are outlined, and the legal contradictions concerning their list are described. The indicators of food security in Ukraine are evaluated for the period of 2009–2013. The dynamics of the weighted average of the food security state in the country for the period under study is presented.

Keywords: food security; economic security; affordability of products; threats to security; caloric value of nutrition.

Анастасія С. Полторак

ОЦІНЮВАННЯ СТАНУ ПРОДОВОЛЬЧОЇ БЕЗПЕКИ УКРАЇНИ В СИСТЕМІ ЇЇ ЕКОНОМІЧНОЇ БЕЗПЕКИ

У статті оцінено стан продовольчої безпеки України в системі її економічної безпеки. Проаналізовано середньомісячні грошові витрати домогосподарств України, в т.ч. динаміку значень показника економічної доступності продуктів. Досліджено останні зміни в структурі харчування населення України, надано характеристику індикаторам стану продовольчої безпеки України, висвітлено окремі неузгоджені моменти в законодавстві України стосовно їх переліку. Проаналізовано значення індикаторів стану продовольчої безпеки України за період 2009–2013 років. Представлено динаміку значень середньозваженого індексу стану продовольчої безпеки за досліджуваній період.

Ключові слова: продовольча безпека; економічна безпека; економічна доступність продуктів; загрози безпеці; калорійність харчування.

Рис. 1. Табл. 3. Літ. 13.

Анастасія С. Полторак

ОЦЕНКА СОСТОЯНИЯ ПРОДОВОЛЬСТВЕННОЙ БЕЗОПАСНОСТИ УКРАИНЫ В СИСТЕМЕ ЕЁ ЭКОНОМИЧЕСКОЙ БЕЗОПАСНОСТИ

В статье оценено состояние продовольственной безопасности Украины в системе ее экономической безопасности. Проанализированы среднемесячные денежные расходы домохозяйств Украины, в т.ч. динамика значений показателя экономической доступности продуктов. Исследованы последние изменения в структуре питания населения Украины. Приведена характеристика индикаторов состояния продовольственной безопасности Украины, освещены отдельные несогласованные моменты в законодательстве Украины относительно их перечня. Проанализированы значения индикаторов состояния продовольственной безопасности Украины за период 2009–2013 годов. Представлена динамика значений средневзвешенного индекса состояния продовольственной безопасности за исследуемый период.

Ключевые слова: продовольственная безопасность; экономическая безопасность; экономическая доступность продуктов; угрозы безопасности; калорийность питания.

Problem statement. Economic security of Ukraine is one of the major components of national security and at the same time it is combined of several subsystems:

¹ Mykolaiv National University named after V. A. Sukhomlynskyi, Ukraine.

production security, demographic security, energy, export, investment, innovation, macroeconomic, food, social and financial securities. Food security is "that state of food production and nutrition in the country, which is capable of satisfying in full the demand of all members of the society in products of a certain quality, keeping the balance of nutrition and the affordability of products for all social groups" (On approval of methodical recommendations..., 2013). The very definition of food security clearly shows that today food security is tightly related to many socioeconomic problems, and this underlines its importance for society and national economy as a whole.

Analysis of recent research publications on the issue. Problems of food security in Ukraine have been studied by quite a range of scientists: I. Drozdyak (2014) considered problems and prospects of food security; T. Mostenska (2015) studied and assessed the state of food security at the households' level; R. Mudrak (2013) and V. Nastich (2013) explored food security issues under globalization; also worth mentioning in this context are the works of V. Nemchenko (2013), N. Khmil (2014), O. Shlapak (2012) and some others. Still, considering the new economic conditions in today's Ukraine the research on food security issues within the system of economic security cannot be considered full and sufficient enough.

Research objectives. The key tasks of this research include the evaluation of food security state in Ukraine within the system of economic security, the analysis of monthly average spending of Ukrainian households and of the dynamics of major products' affordability, changes in the structure of population nutrition. All these indicators and patterns have been analyzed for the period of 2009–2013.

Key research findings. Food and Agriculture Organization of the United Nations (FAO UN) back in 1996 interpreted food security as the situation when all persons in any given time have physical and economic access to safe and sufficient food stock to satisfy their physiological needs in order to have active and healthy life (FAO, 1996).

O. Shlapak (2012) emphasizes the importance of the food issue for the majority of developing countries. Many countries in Africa, Asia and Latin America, even though having a large share of population working for agriculture, still are not able to reach the self-sufficiency level in major food products. R. Mudrak (2013) states that national economies are opening to the world mostly due to the global issue of food deficit which in extreme cases leads to food shocks due to food shortages at internal markets.

I. Drozdyak (2014) writes that under current conditions in Ukraine there are few chances to increase the real volumes of agricultural production, thus, the share of imported food products would inevitably grow, while the level of population real incomes is actually decreasing. This situation leads to the necessity of redefining the food security level in the country and searching for new ways to increase the overall food security level.

T. Mostenska (2015) pays attention to the fact that the share of food spending in the overall population spending is still very high. Let us analyze the monthly spendings of Ukrainian households, as presented in Table 1.

During the period under study the share of food spending in the total spending of households was always higher than 50%. Noteworthy, during 2009–2011 due to the economic crisis effects the share of food products spending was increasing, and since 2012 it has the trend of gradual decrease. All this data allow us stating that overall

Ukraine has the average level of food products affordability for its population. According the countries' ranking "The Global Food Security Index" (2014) by "The Economist Intelligence Unit" (and under the support of the US company "DuPout"), Ukraine is ranked 52th among 109 countries of the world with the rank 56.4.

Table 1. Monthly spending of households in Ukraine, per household

Year	Total spending, UAH			Food spending, % to all household spending		
	All households in the country	Including those living in:		All households in the country	Including those living in:	
		cities and towns	rural areas		cities and towns	rural areas
2009	2415.1	2624.6	1944.6	53.4	54.6	49.6
2010	2773.1	3002.6	2259.0	53.5	55.2	48.2
2011	3124.7	3388.8	2532.2	53.6	55.4	48.7
2012	3300.2	3550.2	2736.0	52.8	54.3	47.9
2013	3499.8	3774.4	2877.8	52.6	54.4	47.2

Source: author's generalization of the data from (Balance and consumption of major food products..., 2013).

According to the Decree of the Cabinet of Ministers of Ukraine "On the issues of food security", the threshold criteria of products' affordability, determined as the share of food spending in the total spending of household, is 60%. Therefore, during the whole period under study in Ukraine this indicator was 10–12% lower its threshold value.

O. Nud (2013) states that this threshold value of 60% defined by the Cabinet of Ministers is actually too high. For example, in France or in the USA the threshold value of food affordability does not go higher than 20%. In Italy it is fluctuating on the level around 18–19%, and in Japan it does not go higher than 25%.

According to the official data of the State Statistics Service of Ukraine, nutrition during 9 months of the year 2014 in our country amounted for 33 UAH per day per person, and this is 7% higher than the indicator for January-September 2013. During this time period the structure of food consumption (and nutrition) has had several changes: the shares of fruits, berries, nuts and grapes decreased by 13%, fish and fish products – by 12%, vegetables and gourds – by 5%. Less significant decrease was observed for sugar, potatoes, meat and meat products, milk and dairy products. Same level of food consumptions remained only for such groups: eggs, bread and other flour products, vegetable oils.

The key indicators of food security in Ukraine are presented in Table 2.

According to the methodology of key indicators determination for food security of Ukraine, as approved by the Cabinet of Ministers of Ukraine (On several issues of food security..., 2007), the indicators of food security in our country officially are: the daily energy value of nutrition; the presence of key products in the ration; sufficient volumes of grain in state stock; affordability of major products; differentiation of ration costs by social groups; market capacity for certain categories of products; food independence by several major categories.

Here we need to pay attention to the inconsistency in legislation since later, in 2013 the Methodical recommendations on the calculations of the economic security

level of Ukraine, the state of food security in our country is suggested to be evaluated using already 11 indicators, and their generalization provides the weighted average of the food security indicator. Noteworthy, the indicators listed in these Recommendations do not include the affordability of food products and food cost differentiation by social groups.

Table 2. Key indicators of food security in Ukraine

#	The indicator of economic security	Types of the indicator ¹⁾	Key parameters of the indicator					Weight
			$\frac{X_{crit}^S}{X_{opt}^D}$	$\frac{X_{danger}^S}{X_{satisf}^D}$	$\frac{X_{unsat}^S}{X_{unsat}^D}$	$\frac{X_{opt}^S}{X_{danfer}^D}$	$\frac{X_{opt}^S}{X_{crit}^D}$	
1	Daily nutrition value, ths kcal	S	2250	2500	2700	2900	3100	0.0945
2	Anuual grain production per person, t	S	0.6	0.7	0.8	0.9	1.0	0.0893
3	Volumes of grain stock at the end of the period, % to consumption	M	5/60	15/65	30/70	40/80	50/110	0.0351
4	Share of imported goods in the total sales of trade networks, %	D	25	23	20	16	12	0.0948
Ratio of production volumes to consumption volumes per person, %								
5	Meat and meat products	S	80	85	90	95	105	0.1048
6	Milk and dairy products	S	80	85	90	95	105	0.1071
7	Eggs	S	80	85	90	95	105	0.0971
8	Oils	S	80	85	90	95	105	0.0921
9	Sugar	S	80	85	90	95	105	0.087
10	Potato	S	80	85	90	95	105	0.0958
11	Vegetables and gourds	S	80	85	90	95	105	0.1021

¹⁾ S – stimulating; D – destimulating; M – mixed.

Source: Generalized by the author on the data from (On approval of Methodical recommendations..., 2013).

N. Khmil (2014: 240) suggests additional indicators for food security conditions – the indicator of food safety, of food products quality and the indicator of the available conditions for growing safe food products. These additional indicators would make the evaluation of food security level more objective and trustworthy.

Values of food security indicators for Ukraine, 2009–2013 are presented in Table 3.

Noteworthy here, that 6 out of 11 indicators are within the range of optimal values, 1 indicator is at the satisfactory level (daily nutrition value), and 2 indicators (as of the end of 2013) were at the unsatisfactory level (for meat and meat products and for grain stock).

Critical is the situation with the indicator "Share of imported food products sales through the trade network of enterprises", it has been critical throughout the whole period, and has the tendency for getting worse.

It is important that according to the Decree of the Cabinet of Ministers of Ukraine "On particular issues of food security" the threshold value of the daily nutri-

tion value indicator is set as 2500 ccal per 24 hours, at that 55% of the daily value is to be covered by the products of animal origin. During the period under study this indicator was higher the threshold value for about 17–18%.

Table 3. Indicators of food security state in Ukraine, 2009–2013

#	Name of the indicator	2009	2010	2011	2012	2013	Absolute variation 2013 to 2009
1	Daily nutrition value, ths kcal	2946	2933	2951	2954	2969	23
2	Ratio of production volumes and consumption of meat and meat products per person, %	84	86	92	89	94	10
3	Ratio of production volumes and consumption of milk and dairy products per person, %	119	119	119	116	114	-4
4	Ratio of production volumes and consumption of eggs per person, %	127	128	132	137	140	12
5	Ratio of production volumes and consumption of oils per person, %	410	458	523	687	614	205
6	Ratio of production volumes and consumption of sugar per person, %	73	106	147	125	75	2
7	Ration of production volumes to consumption of potato per person, %	322	317	381	364	362	40
8	Ration of production volumes to consumption of vegetables and gourds per person, %	142	135	142	145	144	1.4
9	Grain production per person per year, tonn	1.0	0.9	1.2	1.0	1.4	0.4
10	Grain stocks volumes at the end of the period, % to consumption	34.8	28.2	45.6	32.2	38.6	3.8
11	Ratio of imported food products sales through the trade network of enterprises, %	32.6	35.7	38.1	41.1	42.8	10.2

Source: calculated by the author basing on (Balances and consumption of key products..., 2013) using the methodology of (On the approval of Methodology..., 2013).

Basing on the obtained values of the food security indicators of Ukraine, 2009–2013 (Table 3) and according to the Methodical recommendations on the calculation of the economic security level for Ukraine (Decree #1277 as of October, 29th, 2013) we get the weighted average index of food security state which, in turn, directly impacts the integral index of the country's economic security in more general terms. Dynamics of weighted averages values for food security of Ukraine during the period under study is presented in Figure 1.

During the period under study the lowest weighted average of food security of Ukraine belongs to the year 2009 (0.76), and this was caused by the world financial and economic crisis, however, the values in 2011–2013 were no less threatening (0.87 for 2011 and 0.81 for 2013). The author of this article shares the view of I. Drozdyak (2014: 18) who one of the key reasons for decreased economic security of Ukraine sees in the intensive and threatening closing up of the agroindustrial complex in general and smaller volumes of production, its lower efficiency etc.

V. Nemchenko and G. Demchenko (2013: 17) state that decreasing level of food security is directly related to "low profitability of the majority of food producers, and this has caused lower material and technical support, violations of technological stan-

dards in agricultural production". We would also agree with the statement of V. Nastich (2013: 46) about the necessity of developing further the own production for strengthening the food security of the country from many today's actual threats, among which the key one would be the lack of stimuli for agricultural production development which is resulted in gradual increase of imported food products share in the total volumes of all sales at the internal market.

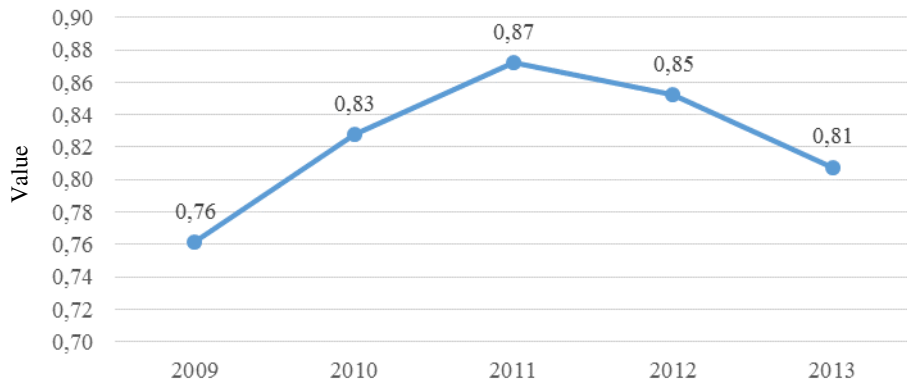


Figure. 1. Dynamics of values for the weighted average index of food security of Ukraine, 2009–2013, calculated by the author by the (Methodology of the Ministry of Economic Development and Trade of Ukraine, 2013)

Conclusions and prospects for further research. As a result of this research the following conclusions have been obtained:

1. The monthly spending of households in Ukraine has been analyzed and we can state that the share of spending on food in Ukraine during the whole period under study is over 50%. Therefore, the threshold value of products affordability, in our opinion, is too high and cannot be overcome. However, if to compare Ukrainian spending with population spending in developed countries, this share of food products is too high.

2. It is demonstrated here that during the period under study the structure of nutrition in Ukraine has changed significantly. Reductions are observed for such positions as fruits, berries, nuts, grapes, fish and fish products, vegetables, meat and meat products.

3. Official indicators of food security in Ukraine are described, and legal irregularities and contradictions between them are revealed. The actual values for these indicators in Ukraine are analyzed, and the author came to the conclusion that only 6 out of 11 indicators are within the optimal range, 1 indicator has the satisfactory value, and 2 more indicators at the end of the year 2013 had unsatisfactory values.

4. Basing on the obtained values of food security indicators in Ukraine, 2009–2013 (calculations according to the Methodical recommendations on establishing the level of economic security in Ukraine) we have obtained the weighted average index of food security which directly influences the integral index of economic security of the state.

Further research the author plans to dedicate to the adaptation of foreign experience in determining the integral index of food security to the local conditions of Ukraine.

References:

- Деякі питання продовольчої безпеки: Постанова Кабінету Міністрів України від 05.12.2007 № 1379 // zakon.rada.gov.ua.
- Про затвердження Методичних рекомендацій щодо розрахунку рівня економічної безпеки України: Наказ Міністерства економічного розвитку і торгівлі України від 29.10.2013 №1277 // zakon.rada.gov.ua.
- Баланси та споживання основних продуктів харчування населенням України: Статистичний збірник за 2013 рік / Державна служба статистики України // ukrstat.org.
- Дроздяк І.* Продовольча безпека України: проблеми і перспективи // Аграрна економіка.– 2014.– Т. 7, №1–2. – С. 16–22.
- Мостенська Т.Г.* Продовольча безпека на рівні домогосподарств // Наукові праці Національного університету харчових технологій.– 2015.– Т. 21, №1. – С. 121–133.
- Мудрак Р.П.* Продовольча безпека України в умовах глобалізації // Економічний часопис-XXI.– 2013.– №1–2(1). – С. 34–37.
- Настич В.Г.* Продовольча безпека як складова національної безпеки України // Вісник Бердянського університету менеджменту і бізнесу.– 2013.– №3. – С. 43–48.
- Немченко В.В., Демченко Г.В.* Продовольча безпека: макро- та мікроекономічні аспекти // Економіка харчової промисловості.– 2013.– №2. – С. 16–18.
- Нуд О.П.* Продовольча безпека України: теоретичні та практичні аспекти // Вісник Донецького університету економіки та права.– 2013.– №2. – С. 168–174.
- Хміль Н.В.* Продовольча безпека як складова сталого розвитку сільського господарства // Збірник наукових праць Таврійського державного агротехнологічного університету.– Серія: Економічні науки.– 2014.– № 2. – С. 236–241.
- Шлапак О.В.* Продовольча безпека і роль тваринництва в її забезпеченні // Економіка України.– 2012.– №12. – С. 83–91.
- FAO 1996. Rome Declaration of World Food Security and World Food Summit Plan of Action // www.fao.org.
- The Global Food Security Index // foodsecurityindex.eiu.com.

Стаття надійшла до редакції 5.06.2015.