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## **FOOD SAFETY IN UKRAINE AND ITS FACTORS**

### *BEZPIECZEŃSTWO ŻYWNOŚCIOWE NA UKRAINIE I JEGO CZYNNIKI*

**Key words:** food safety, indicators, agriculture, food processing industry, efficiency, governmental support, ration structure, consumer basket

*Słowa kluczowe:* bezpieczeństwo żywnościowe, indykatory, rolnictwo, przemysł żywnościowy, efektywność, wsparcie państwowe, struktura racjonu, koszyk spożywczy

*JEL codes:* Q180

**Abstract.** The purpose of this paper is to present the main results of the study aimed to highlights and assess the level of food security of Ukraine and the factors that shape it. Based on this to identify key steps to create conditions for increasing this level. Evaluation of food security indicators was carried out using internationally recognized Global Food Security Index. Identified trends in total income and food price dynamics are negative, since even with increasing incomes purchasing power of the Ukrainian population remains the lowest in Europe, while the share of expenditure on food in the general expenses – the highest. Structure of nutrition in Ukraine is unbalanced, and its level – insufficient. Revealed deterioration of food security in almost all fundamental indicators. It makes sense to consider the two main directions to achieve the necessary level of food security: ensuring food supply in the required quantities; achievement of selfsupplying by agricultural products.

## **Introduction**

Foodstuffs play a very important role in the human activity due to the fact that they are the basis of providing the required level of food security in each country, which is almost eternal problem as the world population is growing stronger and stronger over time. According to UN projections, the number of mankind will increase to 9.3 billion people by 2050 while crop production will increase only by 15%, and protein content reduced by 20% [Ulanchenko, Prozorowa 2015]. So the problem of food security will not be reduced with the change in global political system or with scientific and technological progress of world civilization. Ukraine also faced the problem of malnutrition of the population. The purpose of this publication is to present the main results of the study of the existing state of food safety in Ukraine and fundamental determinant that shape it so that it could identify the main routes to increase levels of security.

The issue of food security is depicted in quite a large number of works, both local and foreign scientists, economists, namely Ivan Derhalyuk [2010], Maryna Lysak [2013], Natalia Moroziuk [2012], Hanna Nemchenko [2013], Valeriy Nemchenko [2013], Volodymyr Rulykiwsky [2009] and others. Statistical basis for determining the status of food security in the regions and the whole country are sources [On the internal... 2016, EDC 2016, Order... 2013]. However, the state of food security in the country indicates that a number of issues remains unresolved: in particular, it requires additional studies to establish the relationship between food security and agricultural development, optimize the use of appropriate indicators to assess food security, interpretation of the results of this evaluation and identification and synthesis of the factors that make food security determine the steps to create conditions for its increase.

## Material and study methods

During the study, the results of which are described in this article, was implemented the approach to defining the essence of food security as a permanent capacity of the state and society to ensure the availability of food for the entire population in the quantity and quality necessary for a healthy and active life [EDC 2016] and as well as security of the population, provision of environmentally friendly and healthy food products following scientific and reasonable standards and at affordable prices [Ulanchenko, Prozorowa 2015].

Directly, in this publication were presented the results, evaluation of food security was carried out using indicators, which operates the Food and Agriculture Organization of the United Nations (FAO) and the methodology approved by the Cabinet of Ministers of Ukraine "Some issues of food safety" from 05.12.2007 number 1379. There are about 28 indicators internationally recognized by the Global Food Security Index, classified in three groups: accessibility (the share of farm food in their total gross domestic product per capita); availability (enough food); quality and safety (the variety of food and its compliance with consumer availability of micronutrients, protein quality and food safety) [Ukrainian... 2016]. From the total number of possible indicators for this study were chosen as follows: daily energy value of the human diet; sufficiency consumption of certain products; the density of roads in the country; economic availability of food for different populations: the differentiation value of food at social groups; food independence in terms of individual products.

## Research results

Analyzing the data from 109 countries in 2015, Ukraine received 56.4 points and took 52nd place [Ukraine... 2017]. Indicators adopted for the assessment of food security in Ukraine are rather dynamic in nature:

1. Indicator of daily energy value of the human diet: daily nutritional intake Ukrainian rolled down to the level of early two thousandth - the average Ukrainian citizen consumed 2,799 calories a day, or 140 calories less than a year earlier, but the caloric intake in 2015 is 12% higher than the established critical level for this indicator - 2500 kcal per day [EDC 2016];
2. Indicator of adequacy of specific product consumption: average consumption is only three least-cost groups (bread and bakery products, vegetables and melons, potatoes) reached or exceeded the recommended level. For other groups ratio was less than one. The significant lag observed in animal products and fruit [Zachosova, Yakowenko 2016]. indicator of car density of roads (FAO used to assess physical availability of food for the population), in 2015 to 100 square km area accounted for 28 km of roads, which is one of the lowest among European countries
3. Economic indicator of food availability: in 2015 it was 54.7% at its 60 percentage limit criteria. It is 1.1 percentage points lower than in 2014; the share of expenditure on food in total consumer expenditure only households was 58.9%.
4. Indicator of differentiation value of food at social groups: in 2015, 20 percent of households with the highest incomes on average spent on food 3298.68 hrn per month, and 20 percent of households with the lowest income – 2228.44 hryvnia. Differentiation factor cost food for social groups was 1.48 versus 1.50 in 2014 [EDC 2016].
5. Indicator of food independence for the individual product: meet people's needs for food, within its purchasing power in 2015, as in previous years, provided mainly by domestic products but the two groups of food import share exceeded the set 30 interest threshold criterion for this indicator. The highest level of import (65%) was marked by a group of „fish and fish products”, since 90 percent of imports accounted for fish that is caught in waters of economic zones of other countries because of their biological cycle. Exceeding the threshold criteria for group “vegetable oil” is due to the import of tropical oils (palm and coconut oil account for over 90% of imports) for the needs of the domestic food industry [EDC 2016].

Ukraine took the 65. place in physical food index accessibility. For an index of the quality and safety of food Ukraine took 42nd place [*Ukraine...* 2017]. There is information that Ukraine has shifted to 59. place in 2015 according to the Global Food Security Index [*Ukrainian...* 2016].

Structural discrepancy in actual diets of the average Ukrainian citizen physiological norm against the backdrop of under-consumption of basic foodstuffs – milk and meat linked to many factors, and especially with the level of income and the prices of final products [Novoseltseva 2011].

The low income and purchasing power of the population as a whole mainly affects on the food situation in Ukraine. The cost share of food in total consumer spending in 2001 accounted for 65.6%, in 2008 – fell to 48.9% starting in 2013 they reached 51.3%, and in 2015 accounted for 54.8%, respectively [*Ukrainian...* 2016].

It should be noted that the average purchasing power of the majority of consumers in the world for 30 years has doubled and consumption of meat and fruits and vegetables per capita during this period increased by 60% [Novoseltseva 2011]. Against this background, Ukraine is the European country with the lowest purchasing power per capita [*The purchasing...* 2017]. Current trends in domestic demand for food with the change of total income and the dynamics of food prices to the socio-economic point of view is negative - for attained almost 20-fold increase in income over the past 12 years according to the law of Engel's share of spending income on food in total volume should reach the level of developed countries - 10-20%. But it remained almost unchanged, indicating imbalance interbranch relations, resulting in the cost of food products increases to such an extent that they become inaccessible for much of the population of Ukraine [Novoseltseva 2011]. According to company GfK, the average Ukrainian citizen after compulsory payments has in 80 times less money per capita than in Liechtenstein, where the average person could spend 63 thousand euros per year

The current situation with the formation of demand for food is a warning and a reminder of the need for active government intervention in the market economy [Novoseltseva 2011].

An equally important factor that dramatically affects the level of food security objectively is the level of development of agriculture and thus manufacturing base, which in Ukraine is currently poor. It is due to farmers' insufficient funds through low investment attractiveness of the industry to foreign and domestic investors and unfavorable conditions of access to credit. According to the State Statistics Service, the volume of capital investments in agriculture, forestry and fisheries for 2015 totaled 30.2 billion USD or 11.0% of the total economy (industry – 32.1%) [UKRSTAT 2016]. Over the past three years dozens of global companies that have implemented their products and services left the country. This decision was prompted by their economic crisis, political instability, exchange rate jumps and exchange restrictions of NBU. Reducing the purchasing power of the population played also a bad role. Priorities have changed, consumers were to elect Ukrainian domestic brands and carefully ponder every purchase. The buyer used the opportunity to purchase necessary goods at lower prices [Zaruba 2017].

The weighted average interest rate on credits in national currency for agriculture exceeds 24% of the average level in the economy of Ukraine 21.2% [UKRSTAT 2016]. According to the Agriculture Ministry, in 2015 farmers got loans worth 11.9 bn. UAH. while according to expert estimation the industry needs 100 billion USD annually. Funding from the state sector remains low, particularly in «Financial support measures in agriculture» in 2012 was predicted 827.4 mln UAH, in 2013 – 96.8, in 2014 and 2015 – only 5 mln USD. [Analytical ... 2016].

A major way that constrains the dynamics of investment in agriculture of the country is that such an important resource as land in Ukraine is actually still out economic turnover.

## Conclusions

Food security is an important part of economic security, which in turn is a part of social security. The central element of food security is the security of food products and their availability to the public in all its forms.

Positive state of food security in Ukraine is a formed system of wholesale food markets and marketing information as a basic element of infrastructure; income growth; improving food self population size due to the expansion of farms and suburban areas. The negative characteristics of this condition include a steady decline in purchasing power; imperfect state regulation of foreign trade in food; lack of conditions for stable functioning of the food; poor conditions in production growth of major agricultural products.

Current trends in domestic demand for food with the change of total income and the dynamics of food prices to the socio-economic point of view are also negative. Even with increasing incomes, the purchasing power of the Ukrainian population remains the lowest in Europe, while the share of expenditure on food is the highest. Nutrition structure in Ukraine is unbalanced and its level is insufficient. All this factors greatly affects the fact that according the Global Food Safety index; Ukraine takes the 50th place in the ranking of 109 countries and continues to move at its end. Revealed deterioration of food security in almost all fundamental indicators: decreased average daily caloric intake and decreased Ukrainian actual average consumption of food, is the main way - through animal products (meat, milk, fish, eggs), whose share of the total caloric intake is 28% when for a balanced diet it is necessary 55%; worsened by 1.1 percentage point economic accessibility of the population to food. The only positive thing in this regard can be assumed that the needs of the population still are met within its real purchasing power, provided mainly by domestic products.

The main factors of unsatisfactory state of food security in Ukraine is low productivity of local farmers due to the absence of necessary conditions for their sustained efficient operation: state support, investment and credit - on the one hand, the low purchasing power of the population as a negative value of low incomes and high prices food – on the other.

In Ukraine, it makes sense to consider the two main areas to achieve the necessary level of food security: ensuring food supplies in such quantities that could provide a healthy and proper nutrition as well as state support for domestic producers, that in turn automatically adjust imports.

## Bibliography

- Derhalyuk Ivan. 2010. Modern international experience of food security. *Bulletin of the Academy of Customs Service of Ukraine. Economics* 1: 90-96.
- EDC. 2016. *Food security in Ukraine deteriorated. Overview of key indicators for 2015*. <http://edclub.com.ua/analitika/prodovolcha-bezpeka-v-ukrayini-pogirshylasya-oglyad-osnovnyh-indykatoriv-za-2015-rik>, accessed February 2017.
- Lysak Maryna. 2013. Analysis of food security of Ukraine. *Accounting & Finance* 3: 136-142.
- Moroziuk Natala. 2012. Indicators of food safety assessment. *Project Management and Production Development* 2: 102-107.
- Nemchenko Hanna. 2013. Modern approaches to food security of Ukraine. *Proceedings of Kirovograd National Technical University. Economics* 23: 401-406.
- Nemchenko Valeriy. 2013. Food security: macro and micro aspects. *Economics of Food Industry* 2: 16-18.
- Novoseltseva Anna. 2011. Trends change in diet based on consumer income and food prices. *Efficient Economy* 9, <http://www.economy.nayka.com.ua/?op=1&z=709>, access February 2017.
- On the internal and external situation of Ukraine in 2016*. 2016. Kyiv: Analytical report to the annual President of Ukraine to the Verkhovna Rada of Ukraine.
- Order of the Ministry of Economic Development and Trade of Ukraine „On approval of guidance on the calculation of economic security of Ukraine” no. 1277 from 29.10.2013*.
- Rulykiwsky Volodymyr. 2009. The system of indicators assessing the impact of agriculture on the effectiveness of food security. *Bulletin of the National Academy of Public Administration under the President of Ukraine* 1: 114-121.

- The purchasing power of Ukrainian was the lowest in Europe.* 2017. <http://www.dw.com/uk/купівельна-спроможність-українців-виявилась-lowest-in-Europe/a-36312325>.
- Ukraine occupies 52-nd place in the Global Food Security Index.* 2017 <http://ukrseeds.org.ua/ukra-%D1%97na-zaima%D1%94-52-em%D1%96stse-v-globalnomu-%D1%96ndeks%D1%96-prodovolcho%D1%97-bez-peki>, accessed May 2017,
- Ukrainian week of food Technologies.* 2016. <http://xn-80ae2bicei8ldc.xn-j1amh/novini/vseukrayinskiy-tizhden-harchovih-tehnologiy-2016>.
- UKRSTAT. 2016. *State Statistics Service of Ukraine.* Kyiv. <http://www.ukrstat.gov.ua>.
- Ulanenko Olexandr, Natalia Prozorova. 2015. *Food security – the basis of national security.* [http://congressworld.com.ua/blog\\_article.php?id=5](http://congressworld.com.ua/blog_article.php?id=5), accessed May 2017.
- Zachosova Natala, Olga Yakovenko. 2016. Food security in the region as a basis for national security Ukraine. *Efficient Economy* 12: <http://www.economy.nayka.com.ua/?op=1&z=5358>, access: March 2017.
- Zaruba Olga. 2017. *Act amendments: how brands influence the investment attractiveness of Ukraine,* <http://mind.kiev.ua/macro/20171526-zakon-dopovnennya-yak-breendi-vplivayut-na-investicijnu-pri-vablivist-ukrayini>, access: May 2017.

### Streszczenie

*Celem artykułu jest ocena poziomu bezpieczeństwa żywnościowego Ukrainy i przedstawienie czynników, które je kształtują. Na tej podstawie badań określono kluczowe kroki w celu stworzenia warunków dla wzrostu tego poziomu. Ewaluację wskaźników bezpieczeństwa żywności przeprowadzono za pomocą globalnego indeksu bezpieczeństwa żywnościowego. Zidentyfikowane tendencje zmian zagregowanych dochodów ludności i dynamiki cen żywności ogółem były ujemne, gdyż nawet przy zwiększeniu dochodów, siła nabywcza ludności ukraińskiej była najniższa w Europie, podczas gdy udział wydatków na żywność – najwyższy. Stwierdzono pogorszenie bezpieczeństwa żywnościowego na podstawie prawie wszystkich podstawowych wskaźników. Należy rozważyć dwa główne kierunki osiągnięcia niezbędnego poziomu bezpieczeństwa żywnościowego: zapewnienie dostaw żywności w wymaganej ilości i osiągnięcie samozabezpieczania w produkty rolne.*

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