

## FOOD SAFETY: AIM AND EVALUATION

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**Summary.** *The purpose of the article is to provide the essential analysis of the term “food security” and to form a system of food security indicators, measuring all its components. Methodology of research.* Food security must be seen as a multilevel system with clearly structured objectives with hierarchy of levels. Target method made it possible to determine main objective of food security – long, healthy and active life of an individual. Domestic method for determining the main indicators of food security contains indicators of availability, stability and presence of food. **Findings.** Due to the increasing economic importance of human capital and health capital we consider that it is necessary to acknowledge the strategic objective of food security of Ukraine. Its State must ensure unimpeded economic accesses to food for a healthy and life-long activity. The analysis of food security indicators on the level of international organizations identified four integrated unit to measure it: the availability of food; economic and physical access to food; unimpeded access to food for a long period of time; use of food. The system of food security indicators should clearly reflects the state of all its blocks: presence, access, stability and use of food. **Practical value.** Based on this, we consider that it is necessary to expand the existing methodology for assessing food security by including food use indicators: balanced nutrition, average life span, infant mortality and mortality from chronic non-communicable diseases (NCD).

**Keywords:** food security, evaluation criteria, a system of indicators of food security.

**Introduction.** The interdependence of social, economic and environmental impacts of a human activity determines modern civilizational development of the society and changes in patterns of sustainable consumption and production. Existing synergetic relations of sustainable economic growth and food providing require a comprehensive examination of food security issues. Considering the problematic of formation the Ukrainian food security, the question of assessment of its condition remains open. For a comprehensive solution of a food security problems it is needed to create a system of indicators of its assessment, which must consider all aspects of Ukrainian food security and have to be comparable to the assessment system applied at international level.

**Brief Literature Review.** Analysis of recent researches and publications showed that issues of the food security assessment are constantly in the spotlight of our domestic scientists. Research works of O. G. Bilorus, V. I. Boyko, V. I. Vlasov, N. V. Volchenko, O. I. Goychuk, G. M. Kaletnik, S. M. Kvasha, V. D. Malygina, N. S. Morozyuk, B. I. Paskhaver, P. T. Sabluk, A. A. Shubin are

focused on theoretical and practical aspects of Ukrainian food security indicators measurement. However, without prejudice to the results of scientists’ researches mentioned above, it should be noted that the unified approach to the formation of a system of food security indicators does not exist by now. In our opinion, this is due to the existence of definitions in determining the essence of food security.

**Purpose.** The main objectives of the present study are to provide the essential analysis of the term “food security” and to form a system of food security indicators, measuring all its components.

**Result.** The term “food security” was officially brought into the international practice after the grain crisis in 1972–1973. In December 1974 the UN General Assembly adopted the Universal Declaration on the Eradication of Hunger and Malnutrition. This document defines that people welfare is generally depends on the establishing a world system of food security, which ensures the availability of food and a reasonable price for it at any time, regardless of periodic fluctuations and weather changes, as well as political and econom-

ic pressure [1]. This definition primarily refers to a stable availability of food and the inability to use it as an instrument of political and economic threat.

Analysis of the recent scientific publications and legislative documents of Ukraine indicates a lack of understanding of the importance of a global health issue in the context of food security. Thus, the Law of Ukraine «On State Support of Agriculture of Ukraine» (2004) states: «Food security – is a security of vital interests of the individual, which expresses in ensuring the unimpeded economic access to the food by a State in order to maintain normal life activity» [2].

This document is not about providing a healthy and active life; it is only about ensuring the normal vital activity. But what is a normal life activity? The normal life activity can be regarded as a normal functioning of the human body at rest or human activity on servicing oneself. But from an economic point of view, only the labor activity provides an economic growth and wealth of the country, and for this reason, food security should ensure not only an ordinary life activity, but also a healthy and active (working) activity. This approach does not contradict the theory of human capital, where health is regarded as one of its main components.

The analysis of the essence of food security at the institutional level (FAO) and at the legislative level in Ukraine shows their main difference - the ultimate goal. For Ukraine - it is an available stable food supply for the population, guaranteeing the elimination of hunger and malnutrition. Declaration of the World Summit on Food Security defines the its goal as a guaranty of such level of health of all individuals, which would provide them an active and long life activity. And with this objective FAO generates a system of indicators of food safety and outlines four enlarged units to measure it [3, 4]: food availability; economical and physical access to food; the stability of access to food for a long period of time; use of food.

In Ukraine, the assessment of food security is made in accordance with the Methodology for the determination of the main indicators of food security, adopted by the Cabinet of Ministers of Ukraine from 05.12.2007 № 1379 «Some problems of food security» [5] and methodological recommendations for the calculation of the level

of economic security of Ukraine, approved by the Ministry of Economic Development and Trade of Ukraine from 29.10.2013 № 1277 [5]. These indicators assess food security in three areas: accessibility, stability and food availability, in accordance with the law approved definition of the term “food security”.

It should be noted that there is a Global Food Security, developed by the analytic agency Economist Intelligence Unit in cooperation with DuPont company [6]. The index is a dynamic quantitative and qualitative model, which measures the factors of food security in developed and developing countries. The index is calculated on the basis of three categories of indicators: accessibility, availability, quality and safety [6, p. 58–62].

It should be noted that at the recommendations for the calculation of the index, food security is defined as a condition in which people always have a physical, social and economic access to food (in sufficient quantity and nutritional value) that meets the needs of their diet for a healthy and active life. At the same time, this indicator does not have indexes, which take into account the result of the use of food – condition of public health.

Health as a result of the use of food has a social value as well as an economic. Economic theories, developed during the XX–XXI centuries, namely, human capital theory, the theory of labor potential, the economic growth theory, the theory of post-industrial society, the theory of sustainable development, the human development theory and the theory of economic security, research health resource.

Within the framework of the theory of economic security (in the Ukrainian legislative field food security is considered as a component of the economic security of the State) health security is seen as the basis of the economic security of the individual and the State. For the State public health is one of the most valuable economic resources, since the welfare of society depends on the health of people, their ability to work with the greatest output, getting the best result.

Our analysis of the health of Ukrainians indicates that there is a quasi-modern type of population health in Ukraine. This type is characterized by a low average life span of the population (Fig. 1).

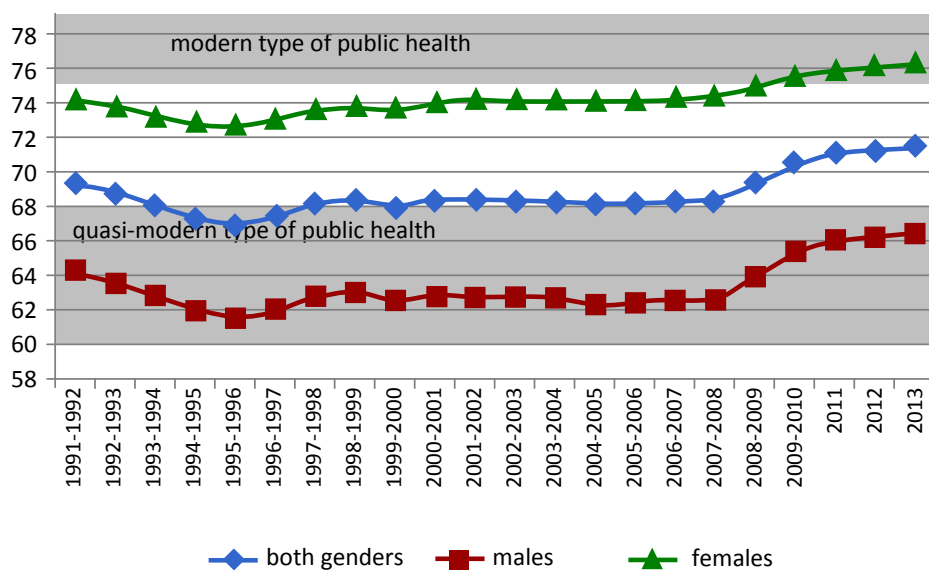


Fig. 1. Dynamics of life expectancy in Ukraine for the period of 1990–2013 years  
(Formed by the Autor on the basis of [7])

At the same time there is increased premature mortality among people at a young and before pension age. The main cause of death – chronic non-communicable diseases (NCD) and injuries. Among the indicators of causes of death in Ukraine the leading position occupied by heart and blood supply disease (66,5 % in 2013) and oncology (13,9 % in 2013) [7].

An analysis of scientific researches devoted to the problem of NCD control reveals the existence of numerous concepts of health risk factors. The most quoted classification of the risk factors of public health is the following: the level and way of life of the population (behavioral factors); the environmental conditions; heredity; the level of medical service. The influence of the first factor on the health is more than 50 %, the influence of heredity and the environment takes 15–20 %, and the medical service takes 10–15 % [8].

Among behavioral factors that shape the risks to human health, the role of nutrition is very significant, as food is the cause of 40–45 % of non-communicable diseases [9]. Nutrition, according to the well-known gerontologist Chebotareva D. F., is practically the only tool that can prolong the species life span on 25–40 % [10].

Summarizing the above, we think that legislative approval procedure [5], which takes into account the access, stability and availability of food, should be supplemented with such indicators as

life span, infant mortality (neonatal), mortality from NCD. Also, statistical information, we consider that it is necessary to supplement the block of the use of food with an indicator of balance of the diet – the ratio of the daily intake of protein, fat, carbohydrates (at a rate of 1:1.2:4).

**Conclusion.** Food security is a complex multi-level category, which is determined by production and productive sustainability of agro-industrial production, and characterizes economic relations by the production and exchange of food products at all levels of human society: global, national, social groups, families and individuals. On the other hand, it is a multi aspect category that includes political, economic and social aspects, and besides the existing in Ukraine methods of assessing the level of food safety are not sufficiently reflect the social aspect of food security – health of the nation.

Public health is an important component of the human capital, and at the state level it must be considered as a major national priority. The quality of the human capital, in turn, determines the efficiency of the economy and the welfare of society. That is why the goal of achieving a food security should be a healthy and active longevity. We think that with the adoption of the Law «On a food security» should be clearly defined the result of the economic, physical and social access to the

qualitative and safe food – long active life of the Ukrainian citizens.

Introduction of indicators, which characterize the result of the use of food, determines not only the condition of food security, but also the economic and national security. We agree that the system of indicators of food security should meet such requirements as the completeness of the input and output data, their accuracy, scientificity and comparability as well as the clarity of the formulation of criteria. But primarily, the system of indicators should clearly reflect the condition of all blocks of food security – availability, access, stability and use of food. Basing on this, we consider that it is necessary to expand the existing methodology for assessing the food security by including indicators of food use: balanced nutrition, the average life span, infant mortality, mortality from NCD, alcohol consumption, while not burdening the work of the state statistical service by extension of a research base.

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**Г. О. Кундєєва**, кандидат економічних наук, доцент (Національний університет харчових технологій). **Продовольча безпека: цілі та оцінка.**

**Анотація.** Мета статті полягає в проведенні ґрунтового аналізу поняття «продовольча безпека» та формуванні системи показників продовольчої безпеки та її компонентів. **Методика дослідження.** Продовольча безпека повинна розглядатися як багаторівнева система з чітко структурованими цілями з ієрархії рівнів. Цільовий метод дозволив визначити основну мету продовольчої безпеки – довге, здорове і активне життя людини. Внутрішній метод визначення основних показників продовольчої безпеки містить показники доступності, стабільності та наявності їжі. **Результати.** У зв'язку зі зростанням економічної значущості людського капіталу та здоров'я, ми вважаємо, що необхідно визнати стратегічним завданням забезпечення продовольчої безпеки України, де держава повинна забезпечити безперешкодну економічну доступність їжі для забезпечення здоров'я населення та активності протягом усього життя. Аналіз показників продовольчої безпеки на рівні міжнародних організацій дозволив визначити чотири інтегрованих блоки для її вимірювання: наявність їжі; економічний і фізичний доступ до продуктів харчування; безперешкодний доступ до їжі протягом тривалого періоду часу; використання їжі. Система показників продовольчої безпеки повинна чітко відображати стан всіх його блоків: наявність, доступність, стабільність і використання продуктів харчування. **Практичне значення одержаних результатів дослідження.** Запропоновано розширення існуючої методики оцінки продовольчої безпеки шляхом включення таких показників, як збалансованість харчування, середня тривалість життя, дитяча смертність та смертність від хронічних неінфекційних захворювань (ХНЗ).

**Ключові слова:** продовольча безпека, критерії оцінки, система показників продовольчої безпеки.

**Г. А. Кундєєва**, кандидат экономических наук, доцент (Национальный университет пищевых технологий). **Продовольственная безопасность: цели и оценка.**

**Аннотация.** Цель статьи заключается в проведении основательного анализа термина «продовольственная безопасность» и формировании системы показателей продовольственной безопасности и ее компонентов. **Методика исследования.** Продовольственная безопасность должна рассматриваться как многоуровневая система с четко структурированными целями с иерархии уровней. Целевой метод позволил определить основную цель продовольственной безопасности – долгую, здоровую и активную жизнь человека. Внутренний метод определения основных показателей продовольственной безопасности содержит показатели доступности, стабильности и наличия пищи. **Результаты.** В связи с ростом экономической значимости человеческого капитала и здоровья, мы считаем, что необходимо признать стратегической задачей обеспечения продовольственной безопасности Украины, где государство должно обеспечить беспрепятственную экономическую доступность

пищи для обеспечения здоровья населения и активности на протяжении всей жизни. Анализ показателей продовольственной безопасности на уровне международных организаций позволил определить четыре интегрированных блока для ее измерения: наличие пищи; экономический и физический доступа к продуктам питания; беспрепятственный доступ к пище в течение длительного периода времени; использование пищи. Система показателей продовольственной безопасности должна четко отражать состояние всех его блоков: наличие, доступность, стабильность и использование продуктов питания. **Практическая значимость результатов исследования.** Предложено расширение существующей методики оценки продовольственной безопасности путем включения таких показателей, как сбалансированность питания, средняя продолжительность жизни, детская смертность и смертность от хронических неинфекционных заболеваний (ХНИЗ).

**Ключевые слова:** продовольственная безопасность, критерии оценки, система показателей продовольственной безопасности.