

■ ПРОБЛЕМИ ЕКОНОМІЧНОЇ І СОЦІАЛЬНОЇ ПОЛІТИКИ

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**FOOD SYSTEM SUSTAINABILITY
AND FOOD SECURITY: PROBLEMS
AND PERSPECTIVES ©**

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The article deals with the issue connected with strong linkages between food security and food system sustainability. It has been revealed that a sustainable food system supports food security as well as changes in both food consumption and food production are important to ensure more sustainable food systems and to achieve food and nutrition security. The aim of this publication is to determine the main perspectives of further development of domestic food security system with moving towards sustainable food consumption and production as addressing systemically the consumptive demand as well as productive supply elements by fostering smarter, efficient and appropriate food production and consumption patterns.

Key words: food security, food system sustainability, food availability, food access, food utilization.

Fig. 1. Tabl. 2. Lit. 5.

Introduction. A sustainable food system is a collaborative network that integrates several components in order to enhance a community's environmental, economic and social well-being. A sustainable food system is a dynamic concept, and the conditions that ensure sustainability in food systems can vary widely across countries and regions, but the main concept demonstrates the importance of seeking sustainability in three dimensions — environmental, economic and social — at every stage of a food system, from agricultural production, processing, and retailing, to consumption. For example, agriculture not only suffers from the impacts of climate change, it but together with land use changes account for about a quarter of greenhouse gas emissions.

Besides, a sustainable food and agriculture system can be defined as one in which the fertility of our soil is maintained and improved; the availability and quality of water are protected and enhanced; our biodiversity is protected; farmers, farm workers, and all other actors in value chains have livable incomes; the food we eat is affordable and promotes our health; sustainable businesses can thrive; and the flow of energy and the discharge of waste, including greenhouse gas emissions, are within the capacity of the earth to absorb forever.

According to the definitions of USDA, the most important purposes and results of an effective sustainable food system are the following: equitable access to local and seasonable produce; access to local, organic produce both in local markets and local supermarkets; access to diverse year-round local farmers' markets; access to local and seasonable, and organic produce sold in local supermarkets; enriches biodiversity at all levels, micro-organisms to soil

to animals; minimizes animal suffering through local access to processing, thus also mitigating GHG emissions; committed to humane treatment of all animals; integrated into local restaurants, hospitals, schools and public institutions, etc [1; 2].

Material and Methods. The current state of the food system and the economic complex that ensures its functioning indicates that the problem of sustainability is important. Though, our country has sufficient resource potential (natural, labor, material, technical, etc.) can not solve the following issues:

- meeting the needs of the food market and the population in domestic food products at the level of the required consumption;
- conditions for the effective conduct of economic entities;
- production of quality and competitive products;
- socio-economic development of the agricultural sector in the economy.

The main method of this investigation is comparative analysis of food security state of our country and neighbors. The target of this work is to determine the main perspectives of further development of domestic food security system.

Results. The main objective of the food security policies is to assure a steady supply of safe and quality food products for the country's population from local production, to create the necessary stocks and to import food products in the case of insufficient local production.

The definition of food security is based on three important pillars: food availability, food access, and food utilization (figure 1).

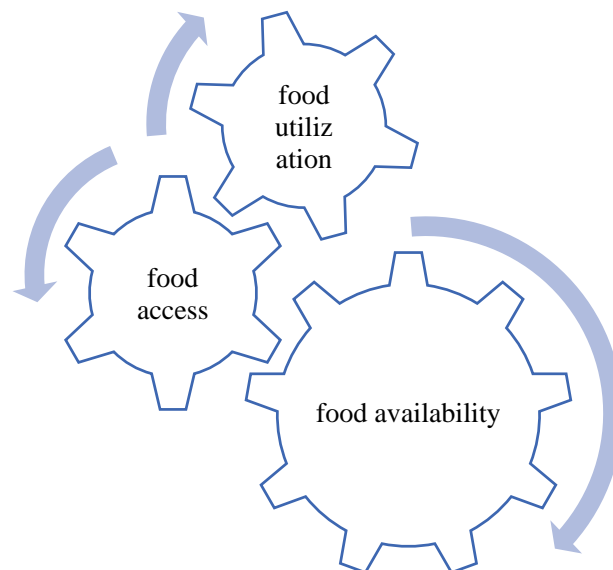


Figure 1. The Pillars of Definition of Food Security

Food availability in a country, region or local area means that food is physically present because it has been grown, processed, manufactured, and/or imported. For example, food is available because it can be found in markets and shops; it has been produced on local farms or in home gardens; or it has arrived as part of food aid. This refers to all available food in the area, and includes fresh, as well as packaged, food.

Food access refers to the way in which different people obtain available food. Normally, we access food through a combination of means. This may include: home production, use of left-over stocks, purchase, barter, borrowing, sharing, gifts from

relatives, and provisions by welfare systems or food aid. Food access is ensured when everyone within a community has adequate financial or other resources to obtain the food necessary for a nutritious diet. Access depends on a household's available income and its distribution within the household, as well as on the price of food. It also depends on markets, and on the social and institutional entitlements/rights of individuals.

Food utilization is the way in which people use food. It is dependent upon a number of interrelated factors: the quality of the food and its method of preparation, storage facilities, and the nutritional knowledge and health status of the individual consuming the food. For example, some diseases do not allow for optimal absorption of nutrients, whereas growth requires increased intake of certain nutrients.

Concerns about food security can be traced back to the Hot Springs Conference of Food and Agriculture in 1943, since which time the issue has undergone several redefinitions. The 1943 conference evolved the concept of a "secure, adequate and suitable supply of food for everyone" a concept that was subsequently taken up at an international level.

The problem of food security has been globally debated since the '50s of the last century. The initial solution to this problem was to provide food aid to countries affected by food insufficiency. Food security as a concept originated only in the mid-1970s, in the discussions of international food problems at a time of global food crisis. The initial focus of attention was primarily on food supply problems - of assuring the availability and to some degree the price stability of basic foodstuffs at the international and national level. That supply-side, international and institutional set of concerns reflected the changing organization of the global food economy that had precipitated the crisis. A process of international negotiation followed, leading to the World Food Conference of 1974, and a new set of institutional arrangements covering information, resources for promoting food security and forums for dialogue on policy issues

The 1996 World Food Summit adopted a still more complex definition: "Food security, at the individual, household, national, regional and global levels when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life".

Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life. Household food security is the application of this concept to the family level, with individuals within households as the focus of concern [1].

The Global Food Security Index considers the core issues of affordability, availability, and quality across a set of 113 countries. The index is a dynamic quantitative and qualitative benchmarking model, constructed from 28 unique indicators, that measures these drivers of food security across both developing and developed countries. This index is the first to examine food security comprehensively across the three internationally established dimensions. Moreover, the study looks beyond hunger to the underlying factors affecting food insecurity. To increase the ongoing relevance of the study, the index will employ a quarterly adjustment factor for food price fluctuations to examine the risk countries face throughout the course of the year.

Ukraine had 63 position in 2016. The main strengths are related with proportion of population under global poverty line, food safety, food loss. The main challenges associated with public expenditure on agricultural R&D, corruption, gross domestic product per capita [3].

As a food surplus nation, food availability is not a concern in most of the country. Ukraine has a strong agricultural sector and is one of the world's largest grain exporters. Its diversified economy includes a large industrial sector producing heavy duty and aerospace

equipment. However, underdeveloped infrastructure and transportation have hampered economic growth in recent years. In addition, recent political and economic constraints continue to threaten food security in affected areas. The Ukrainian economy is currently undergoing a crisis with the decline of GDP growth rates, decrease of foreign investments, increase of government debt, and the significant devaluation of its national currency.

In the quest to improve food security, economic growth is an essential ingredient. As countries develop and most peoples' incomes rise, food systems-related infrastructure and institutions are built and food security improves. Economic growth and development raise the incomes of the poor and improve their ability to gain access to food, health and education, while providing governments with the cash needed to make growth more equitable.

Countries with very high levels of poverty and chronic malnutrition face limitations in human capital development, which is required to achieve sustainable growth. High levels of poverty, inequality, and chronic malnutrition force governments to invest significant resources in the short-term through social safety net programs and conditional cash transfers. High rates of malnutrition can lead to a loss in gross domestic product (DGP) of as much as 4 to 5 percent, according to the UN Food and Agriculture Organization.

In our opinion, one of the main indicator of efficiency of economic system is the share of different types of goods and Services in the structure of consumption (see table 1).

Table 1

Consumption Expenditure of Households on Goods and Services

Indicator	2010	2011	2012	2013	2014	Deviation for the period
						+/-
Total spending on average per month per household, hr.	3073.3	3458.0	3592.1	3820.3	4048.9	975.6
Structure of total household spending	in percentages					
Food and beverages	51.6	51.3	50.1	50.1	51.9	0.3
Clothing and footwear	6.0	5.7	6.1	5.9	6.0	-
Housing, water, electricity, gas and other fuels	9.2	9.6	9.9	9.5	9.4	0.2
Health	3.2	3.2	3.4	3.4	3.6	0.4
Recreation and culture	1.8	1.9	2.0	2.1	1.8	-
Education	1.3	1.3	1.3	1.2	1.1	-0.2

In order to compare the indicators, we will take the foreign countries – Poland and Belarus – into consideration. So, the average monthly expenditures per household in Poland is 3058.58 zł. The expenses are the following: food and non-alcoholic beverages 262.32 zł (8.5 % of total), clothing and footwear 59.22 zł (1.9 %), housing, water, electricity, gas and other fuels 219.48 zł (7.2 %), health 57.61 zł (1.9 %), recreation and culture 73,48 zł (2.4), education 11.18 zł (0.36 %) [4].

The consumption expenditure structure of the Republic of Belarus is the following: food - 39.1 %, clothing, footwear, fabrics - 8.3 %, health - 4.2 %, culture, recreation and sports - 5.4 %, education - 1.5 % [5].

As we see, the biggest inequality has appeared in the share of food expenses. Today, Ukrainians spend more than half of their income on food and utility bills, with their share in population's total expenses having grown to almost 58% in the first quarter of 2016.

We know that food security is defined as access to sufficient food to meet the energy and nutrient requirements for a healthy and productive life. Food is strongly linked to health and sustainable development. However, food consumption patterns, which are important drivers for agricultural and food systems, are often neglected in the research and policy areas of food security. Technical fixes alone will not solve the food security challenge and adapting to future demands and stresses requires an integrated food system approach, not just a focus on agricultural practices. And the structure of consumption helps us to understand what products are used for food and do they enough for human existing (table 2).

Table 2

**Consumption of Food Products in Households
(on average per month per person)**

Products	2010	2011	2012	2013	2014	2015	Deviation for the period	
							+/-	%
Meat and meat products, kg	5,1	5,1	5,0	5,1	4,9	4,6	-0,5	-9,80
Milk and dairy products, kg	19,2	19,1	19,6	20,3	20,3	19,8	0,6	3,13
Eggs	20	20	20	20	20	19	-1,0	-5,00
Fish and fish products, kg	1,8	1,7	1,7	1,8	1,6	1,2	-0,6	-33,3
Sugar, kg	3,0	3,2	3,1	3,0	3,0	2,8	-0,2	-6,67
Oil and other vegetable oils, kg	1,8	1,8	1,8	1,7	1,7	1,6	-0,2	-11,1
Potatoes, kg	7,7	7,9	7,8	7,1	6,9	6,6	-1,1	-14,3
Vegetables and melons, kg	9,5	9,9	10,1	9,4	9,0	8,8	-0,7	-7,37
Fruits, berries, nuts, grapes, kg	3,7	3,7	3,7	4,1	3,7	3,1	-0,6	-16,2
Bread and bakery products, kg	9,3	9,2	9,1	9,0	9,0	8,5	-0,80	-8,60

During the period from 2010 to 2015 the consumption of meat products decreased by 9.8%, eggs - by 5%, fish - by 33.3%, potatoes - by 14%, vegetables - by 16%, while the consumption of dairy products has increased by more than 3%. We can conclude that expensive products (meat and fish) are eaten in smaller quantity. This is due to a decrease in purchasing power of citizens.

Conclusions. Food demand increase is due mainly to changing food consumption patterns and population growth. Today, the main concern for the food and agricultural sector is to provide simultaneously enough food, in quantity and quality, to meet the nutritional needs of a growing population in an environmentally, economically and socio-culturally sustainable way. Food production and its physical availability are certainly essential to addressing hunger. However, producing more food alone will not be sufficient to achieve food and nutritional security. In fact, food and nutrition security is about more than just producing sufficient food as it encompasses the need to ensure access to food at all times. The world currently produces enough food, in aggregate terms, for its citizens. However, food insecurity and malnutrition (undernutrition, overnutrition, and micronutrient malnutrition) problems are widespread. These as well as the social, economic and environmental negative impacts of the current food consumption patterns and diets highlight the inadequacy of the global food system.

Due to comparison with other countries, we have seen that the biggest inequality has appeared in the share of food expenses: more than half of our income we spend on food. Besides, we have revealed that expensive products such as meat and fish are used in smaller quantity. This is due to a decrease in purchasing power of citizens. This adversely affects the physical health of citizens. Therefore, analysis of food security Ukraine should consider comparative approach based on the availability of food for the citizens of different purchasing power.

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АНОТАЦІЯ

СТАЛИЙ РОЗВИТОК СИСТЕМИ ПРОДОВОЛЬЧОГО ЗАБЕЗПЕЧЕННЯ ТА ПРОДОВОЛЬЧА БЕЗПЕКА: ПРОБЛЕМИ ТА ПЕРСПЕКТИВИ

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У статті розглядається широкий спектр проблем, пов'язаних із взаємозв'язками між продовольчою безпекою та стійким розвитком системи продовольчого забезпечення. Під час проведеного дослідження, було виявлено, що сталого розвитку системи продовольчого забезпечення формує продовольчу безпеку. Не менш важливими факторами забезпечення сталого розвитку системи продовольчого забезпечення є зміни у споживанні їжі та виробництві продуктів харчування, які обумовлюють стан продовольчої безпеки. Метою даної статті є визначення основних перспектив подальшого розвитку національної системи продовольчої безпеки з переходом до стійкого споживання та виробництва харчових продуктів, як системного вирішення проблем споживчого попиту, а також розвитку виробничих елементів, шляхом сприяння більш раціональному, ефективному та відповідному виробництву та споживанню продуктів харчування.

Ключові слова: продовольча безпека, сталий розвиток системи продовольчого забезпечення, наявність продовольства, доступ до їжі, переробка харчових продуктів.

Рис 1. Табл. 2. Літ. 5.

АННОТАЦИЯ

УСТОЙЧИВОЕ РАЗВИТИЕ СИСТЕМЫ ПРОДОВОЛЬСТВЕННОГО ОБЕСПЕЧЕНИЯ И ПРОДОВОЛЬСТВЕННАЯ БЕЗОПАСНОСТЬ: ПРОБЛЕМЫ И ПЕРСПЕКТИВЫ

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В статье рассматривается широкий спектр проблем, связанных с взаимосвязями между продовольственной безопасностью и устойчивым развитием системы продовольственного обеспечения. В ходе проведенного исследования было

определено, что устойчивого развитие системы продовольственного обеспечения формирует продовольственную безопасность. Не менее важными факторами обеспечения устойчивого развития системы продовольственного обеспечения являются изменения в потреблении пищи и производстве продуктов питания, обуславливающих состояние продовольственной безопасности. Целью данной статьи является определение основных перспектив дальнейшего развития национальной системы продовольственной безопасности с переходом к устойчивому потреблению и производству пищевых продуктов, как системного решения проблем потребительского спроса, а также развития производственных элементов, путем содействия более рациональному, эффективному и соответствующему производству и потреблению продуктов питания.

Ключевые слова: продовольственная безопасность, устойчивое развитие системы продовольственного обеспечения, наличие продовольствия, доступ к пище, переработка пищевых продуктов.

Рис. 1. Табл. 2. Лит. 5.

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