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## FOOD SECURITY

IN AZERBAIJAN IN THE CONTEXT OF GLOBAL CHALLENGES. ROLE OF BUSINESS COMPETITIVENESS

**LA SEGURIDAD ALIMENTARIA EN AZERBAIYÁN EN EL CONTEXTO DE LOS DESAFÍOS GLOBALES. PAPEL DE LA COMPETITIVIDAD EMPRESARIAL**

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### ABSTRACT

Business competitiveness refers to the ability of a business to compete successfully in the marketplace, while food security refers to the availability of sufficient and nutritious food to meet the needs of a population. There is an important connection between both concepts because business competitiveness can affect food security at a broad level, affecting the supply and demand of food in the market, as well as conditioning the price of food. Therefore, it is important to promote business competitiveness in a responsible and sustainable way. Considering this, the article analyzes the food security context in Azerbaijan in accordance with contemporary challenges. For this, special attention is paid to different indices used for their evaluation and their applicability in the national context, as well as the problems related to the competitiveness of companies in the food industry in Azerbaijan. The issues of consumption of certain types of food per capita were considered and a comparative analysis of real indicators in the country was carried out. In addition, the directions that can form the basis of discussions on the strengthening and balance of state policy in the field of the food industry, and the challenges regarding the global scenario were considered. Finally, a series of recommendations and proposals are provided to strengthen the work on the issues under consideration.

**Keywords:** Azerbaijan, food security, business competitiveness

### RESUMEN

La competitividad empresarial se refiere a la capacidad de una empresa para competir con éxito en el mercado, mientras que la seguridad alimentaria se refiere a la disponibilidad de alimentos suficientes y nutritivos para satisfacer las necesidades de una población. Existe una conexión importante entre ambos conceptos debido a que la competitividad empresarial puede afectar la seguridad alimentaria a un nivel amplio, afectando la oferta y demanda de alimentos en el mercado, así como condicionando el precio de los alimentos. Por ello, es importante promover la competitividad empresarial de forma responsable y sostenible. Considerando esto, el artículo analiza el contexto de la seguridad alimentaria en Azerbaiyán de acuerdo con los desafíos contemporáneos. Para ello, se presta especial atención a los diferentes índices utilizados para su evaluación y su aplicabilidad en el contexto nacional, así como a los problemas relacionados con la competitividad de las empresas de la industria alimentaria en Azerbaiyán. Se consideraron los temas de consumo de ciertos tipos de alimentos per cápita y se realizó un análisis comparativo de indicadores reales en el país. Además, se consideraron las direcciones que pueden ser la base de las discusiones sobre el fortalecimiento y el equilibrio de la política estatal en el campo de la industria alimentaria y los desafíos en relación con el escenario global. Finalmente, se brindan una serie de recomendaciones y propuestas para fortalecer el trabajo en los temas bajo consideración.

**Palabras clave:** Azerbaiyán, seguridad alimentaria, competitividad empresarial.

## INTRODUCTION

Provision of population with the necessary food product is one of the problems humanity has faced over time. More than 200 years ago the English economist Thomas Robert Malthus (1766-1834) in 1798 anonymously published his scientific paper named "An Essay on the Principle of Population". He showed that regardless of the fact that population doubles every 25 years, means of subsistence for population cannot grow faster than its numbers. Thus, he considered food shortages to be a natural entity. Malthus considered that diseases, unfavorable conditions of population's subsistence and wars were regular in the context of population growth and food shortages (Malthus & Boulding, 1959). Although Malthus's ideas did not justify themselves completely, nevertheless the responsibility for the efficient use of natural resources, changes in the structure of agriculture, reform and implementation in some countries of new policies on population growth and other issues increased.

Thus, food security is important for all countries because the availability of food is essential for the health and well-being of the population. Food security is understood as the availability, accessibility and sustainable use of food in sufficient quantities and of adequate quality to satisfy the nutritional needs of the population and avoid hunger. However, food security also includes a country's ability to sustainably produce and obtain food, either through domestic agricultural production or food imports. The lack of food security can have serious consequences for the health and well-being of the population. In addition, the lack of food security can contribute to political and social instability, since it can lead to protests and riots due to the dissatisfaction of the population with their situation. Therefore, it is important to take measures to guarantee food security, this being essential to guarantee the safety and well-being of the population and to maintain the political and social stability of a country.

Nowadays, the increase of negative global impacts complicated the solution of the problems of the millennium, including the problems of reducing poverty and famine level. Almost 800 million people famish in the world and annually 600 million people are poison by poor-quality food products. Because of this there is a necessity in completely new, better organized, reasonable approaches, methodological developments in food safety strengthening and compliance with standards and requirements of food safety (Baierle et al., 2022).

The situation also becomes complicated because of disruptions of the supply chain of the main types of food products, first of all, cereal grain. Thus, because of the civil

conflicts, wars, and especially in the context of Russian-Ukraine war, the situation on the cultivation and supply to world markets of such a strategic product as wheat, which is imported by most of the countries, became more sensitive, and first of all, the danger is upon the poor countries of the world. The similar development of the food safety processes stipulate taking of adoption of the appropriate and effectual measures (Bigliardi et al., 2020).

It is necessary to strengthen the control mechanisms, standards, improve the rules and tracking orders of the food products supply chain, and thereby to provide the improvement of the food safety mechanisms in the global world to the maximum, including the Republic of Azerbaijan. In this context is important to address the problems of assessment of the competitiveness of the food production enterprises in Azerbaijan, in correspondence with the implementation of the global food safety (Guliyev, 2013).

In the context of Azerbaijan, the challenges of enhancing food security and optimizing existing mechanisms to improve the competitiveness of food industry enterprises raise serious and complex questions that need to be consistently considered. For this, it is necessary to conceptually understand and ensure effective measures to improve the competitiveness of food industry enterprises, considering an objective assessment of the adequacy of competitiveness in the context of global challenges in the field of food security. Also, it is important to consistently solve the accumulated problems in strengthening the competitiveness of food enterprises in the world food markets and in the context of a shortage of the most important types of food products and the difficulty of providing strategic types of food to the population.

Objective assessment with scientific reasoning of supply and demand for food supply and sale in the current period and the ability of food industry enterprises to exercise immunity to counter global impacts and threats in connection with the deepening of global food security are also essential. For this, it is necessary to seriously think and take full-fledged effective measures to increase the level of self-sufficiency in strategic types of food products, primarily food grains, thereby ensuring a reliable basis for strengthening food security of the country's population, as well as strengthening the maneuverability of food enterprises, taking into account their increased competitiveness in the current difficult period. Having established the above, the aim of this article is to analyze the food security context in Azerbaijan in accordance with contemporary challenges. For this, special attention is paid to different indices used for their evaluation and their applicability in the national context, as well as the problems related to

the competitiveness of companies in the food industry in Azerbaijan.

## DEVELOPMENT

The issues of global food safety are still considered to be one of the most difficult problems of civilization. Over the past few decades the world community, international organizations and world's major economies took effective measures on weakness of the quite difficult problem of provision of stability and efficiency of the main types of food production of the population in the world (Cosio et al., 2022). Despite of the specific breakthroughs there are remaining many unsolved problems, which are considered to be maximally topical for the government of the world countries (Chen et al., 2019). The situation stipulates the complex review and phased solution of a group of important issues in the context of global food safety:

1. in connection with the climate change the solution of the problem of food safety in the world becomes more complicated from year to year.
2. Huge financial flow and multibillion investments are required for the stable provision of the global food safety and decrease of the famine level.
3. Many world countries are not able to solve the food safety problems for themselves.
4. Global institutional structures and international organizations are busy in solution of the global food safety problem and are not able to manage new challenges, and need the reconstruction, or deep improvement of existing mechanisms and tools in the worst case.
5. Ongoing civil conflicts, acts of terrorism and wars between countries exasperate enough complicated situation and problems of food safety in the world and etc.

According to Carvajal (2022) for the complex understanding of the process of index computation of the global food safety it is necessary to investigate its main partials. Let's take as a basis the main three criteria of global food safety provision:

1. economic accessibility of food considers procurance of food not depending on resources of its origin. In this case, both monetary and non-monetary resources can act as means of procurance.
2. Physical accessibility of food considers the total availability of food in all settlements of the region in a volume sufficient for consumption by the entire population of the region. In this case the rational consumption rates are established both at state and international levels and include not only energy value but also the amount of micro and macro elements, as well as amount of the complete protein.

3. The quality and safety of the food products stipulates for condition of food products, indicative of absence of risk related to the impact of harmful substances and genetically modified products in some countries on population, at the same time the availability of state monitoring of food safety.

Besides, for the objective assessment of the food safety it is fine to use the methods based on indicators systems analysis: 1) self-sufficiency of the region with the food; 2) indicators of satisfaction of physiological needs of population in food and 3) indicators of economic accessibility of food. Further, the self-sufficiency ratio ( $S_r$ ) makes it possible to establish to what extent the needs of the population of the country are satisfied considering domestic food production. The assessment of the level of satisfaction of the physiological needs of the population in food products can be carried out based on an analysis of the actual consumption factor ( $A_{cf}$ ) for the main categories of the most important food products. In the used methods the level of economic accessibility of food is characterized by the capability of population to acquire food products and is analyzed with the help of identification of the poverty index ( $P_i$ ), which characterizes the population ration with the level of substandard income on the region. Based on the results of the calculations, it is necessary to determine the food security index using the formula in equation 1 where the parameters are: consumption factor ( $C_f$ ); degree of irregularity of population distribution on the basis of income level – Gini coefficient ( $G_c$ ). The threshold value range is indicated based on test parameter (permissible – 1 point, optimal – 2 points, low or high - 0 point), which makes possible to assess the definition of each coefficient in points.

$$F_{si} = S_r + A_{cf} + P_i + C_f + G_c \quad (1)$$

Depending on the value of the index ( $F_{si}$ ) the current level of food safety of the region is determined in a certain way being the highest score 10. If the result is in the range 9-10 points the level of food safety is considered 'optimal', 5-8 points – the level is 'permissible', and under 5 points – 'low'. The suggested approach on identification of the level and assessment of the food safety in the country can help in preparation and taking effective solutions, promote the development and realization of purpose-oriented programs, develop strategies on solution of the current problems in provision of food safety of the country, and in the world in a whole. In this respect, the system of indicators and criteria of the food safety in the country should be based on the following indicators:

1. The level of food self-sufficiency by the main types of food products.

2. The state of the material and technical basis and the level of satisfaction of the physiological needs of the population of the country with strategic types of food products.
3. The level of stable provision of the vulnerable layers of the population in the country by the essential food products, and the level of satisfaction of the physiological needs of the population in the country in basic foodstuffs in general.
4. Consistent measures taken to ensure the stability of the food supply and the level of economic accessibility of the most important types of food products.
5. Availability of strategic goals of providing food and strengthening the food safety of the population of the country in the long term, etc.

On the global scale, there are several methodologies, approaches, and indexes that reflect the level of food security of the country (Cosío et al., 2022). The index above is in line with these researches on the assessment of food safety, in which the authors use index approach to the assessment by review of such indicators as availability, accessibility and consumption of food, without including in the assessment system a social block that reflects the standard of living of the population (Nicholson et al., 2021). A similar approach is given in the papers of Mihoreanu (2019) and Chen et al., (2019). However, there are several issues which demands the discussion, for example, the lack of approaches to consider subjectivity and the impossibility of correctly identifying the specific weight of indicators.

It is important to mention that after the World Food Summit in 1996 in the Global Index of the food safety there are reviewed such key issues as availability, accessibility and quality of food products for a group of 113 countries (FAO, 2021). The index is identified as a quantitative and qualitative indicator on the basis of 26 indicators of food safety both of developing and developed countries.

As to the Republic of Azerbaijan, which restored its independence after the collapse of the former USSR in the early 1990s, the focused efforts are spent on strengthening of the food safety of the young republic. Thus, in 2019 based on this ratio Azerbaijan took 53<sup>rd</sup> place (64.8 points) in the Global Index of Food Safety calculated among 113 countries. In accordance with this index the ratio the country during last 8 years (2012-2019) increased 20.4 points and 0.3 points in comparison with 2018. In other words, during the last 8 years it increased from 44.4 up to 64.8 points, increasing from 67<sup>th</sup> to 53<sup>rd</sup> place in the table. Besides, 'Strategic Road map for development of agriculture' approved by the Decree of the President of the Republic of Azerbaijan on December 6<sup>th</sup>, 2016, sets specific goals on

strengthening of institutional potential for provision of food safety stability. At the same time there was developed a plan of action for assessment of the level of accessibility level for the different social groups and factors influencing it (Aliyev, 2016).

With the aim of concretization and taking of the necessary measure on provision of the food safety in Azerbaijan the 'Program on food safety in the Republic of Azerbaijan' was developed and approved in accordance with the order of the President of the Republic of Azerbaijan dated after April 29<sup>th</sup>, 2019 (Aliyev, 2019). It is worth to be mentioned that the food safety provides the constant availability of physical and economic access for people to quality food products for support of active and healthy lifestyle (Szwacka-Mokrzycka, 2010). One of its key elements alongside with physical and economic access to quality food products for the population is economic independence of the national food system of the country, considering independence on export of the main food products, its reliability, safety of the food system on season, climate and other factors, development of production of the national food system in the expanded mode (Guliyev, 2018). Thus, systematically, location-specific researches are hold in Azerbaijan on identification of the accessibility sub-index rating in Azerbaijan in the context of international food safety index.

Also, the global food safety index was developed, planned, and composed by the British Journal 'The Economist' in 1996. This index covers such key issues, as availability, sufficiency and quality of food products on 113 groups of countries after the World Food Summit. The index is identified as quantitative and qualitative rating based on the 26 criteria of the food safety both in developing and developed countries. The food safety index of the countries is classified by three main categories: accessibility, availability, quality and safety. In the rating of the accessibility sub-index Azerbaijan takes the 54<sup>th</sup> place with 61 points (Sadigov et al., 2021).

It is necessary to highlight that in the most countries of the world including Azerbaijan the indicators system of food safety of the country covers mainly the following indicators: 1) food safety of the country – physical accessibility; economic accessibility, demographical situation of the region; product quality; rational consumption factors; 2) food safety of the region; 3) natural and climatic conditions of the country; 4) self-sufficiency rate of the main types of the food products; 5) world food market juncture. Besides, there is several indicators including the level of purchasing power and income of the population, the level of agriculture sector development, level of poverty and

food patterns in the county, etc. As to the FAO methodology on setting up the indicators of food safety in the countries, they are given in Table 1.

Table 1. Food safety indicators in compliance with FAO methodology

<b>Accessibility</b>	<b>General</b>	Production average of food products
		Average energy value of the food
		Average volume of the consumed protein, separately of animal origin
		Relative share of dietetic food and consumed tuber crop and root crop, etc.
	<b>Physical</b>	GDP per capita (in PPP)
		The ratio of built roads to the total number of the roads
		Road density and railroad line density separately ad etc.
	<b>Economic</b>	Price index on the products of national food industry
Access to the advanced sanitation facilities, and also to the advanced water resources and etc.		
<b>Efficiency</b>	<b>General</b>	Undernourishment prevalence in the country
		Quota of expenditure on food products in expenditure of penurious family
		The prevalence of the food products deficit;
		The prevalence of the food products shortage;
	<b>Usage</b>	The share of children under 5 years, suffering from inanition
		The share of children under 5 years with underweight
		The share of children under 5 years lagging
		The share of adults with underweight
		The anemia cases among children under 5 years and pregnant women
		Prevalence of iodine deficiency and vitamin A, etc.
	<b>Stability</b>	Political stability
		Flexibility of production and procurement of food products per capita
		Import dependence of cereal crop
		Stability/instability of food products prices
		Relative share of the food products imports in the total import products
The share of farmlands with water facilities and etc.		

**Source.** Prepared by the author based on Methods and Standards. FAO - <https://www.fao.org/statistics/standards/en/>

Over the past few decades in Azerbaijan the attention is sequentially paid to the volume growth of production of the agricultural products, which compose the raw materials for production of the main types of food products at the agrarian and industrial sector. For this reason, it is required to increase the competitiveness and universality of the food production enterprises in the country. In the Table 2 there is given the dynamics of agricultural production in Azerbaijan in 2011-2021, which composes the raw base and components for food production on the industrial basis and preparation of the most important types of food products.

Table 2. Agricultural production in Azerbaijan, millions manat (2011-2021).

Years	Total	Including	
		Crop production	Animal production
2011	4525,2	2339,8	2185,4
2012	4844,6	2458,2	2386,4
2013	5244,6	2629,6	2615,0
2014	5225,8	2449,4	2776,4

2015	5635,3	2761,1	2874,2
2016	5632,4	2577,2	3055,2
2017	6580,0	3019,0	3561,0
2018	7010,0	3186,0	3824,0
2019	7836,7	3751,2	4085,5
2020	8428,9	4028,4	4400,5
2021	9163,4	4511,0	4652,4

**Source.** SSCAR - <https://www.stat.gov.az/source/agriculture/>

If we analyze the Table 2, we can see that during the last years the volume of the agricultural production increased. However, the more in-depth treatment of the growth dynamics in natural form is required. The issues of production of the strategic types of food products and the main types of consumed food products should be measured in conjunction with qualitative and quantitative indicators, and for this reason the analysis of accessibility of food products for all social groups of the country is of great importance.

In Table 3 the crop production in Azerbaijan in 2011-2021 is shown.

Table 3. Crop production in Azerbaijan, thousand tones (2011-2021).

Years	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Grain plants, total	2458,4	2802,2	2955,3	2383,3	2999,4	3065,1	2928,8	3309,2	3538,5	3257,1	3363,0
Autumn grain plants, including	2240,0	2551,7	2673,1	2122,1	2722,4	2786,3	2615,2	2957,9	3149,0	2877,7	3018,7
Wheat	1639,8	1846,5	1892,2	1449,0	1687,3	1847,2	1814,3	2032,1	2149,7	1866,0	1882,3
Spring grain plants, including	218,4	250,5	282,2	261,2	277,0	278,8	313,6	351,3	389,5	379,4	344,3
Wheat	1,2	0,9	1,2	0,1	0,4	4,3	4,4	10,8	21,8	1,3	3,1

**Source.** SSCAR - <https://www.stat.gov.az/source/agriculture/>

Analyzing the data in Table 3 we can come to a conclusion that, the level of stock formation and provision of the grain production, first of all the provision of the population in Azerbaijan with the cereal grain gives cause for concern being necessary to strengthen the import. Due to this situation during last years the government took systematic measures for the stimulation of the production growth of cereals and the other grain products, as for example, subsidize, make budgetary provisions for the agriculture development, supplies with a preferential price of agricultural fertilizers and machinery, so we consider it natural to expect the growth of strategically important food products in Azerbaijan (Sadigov et al., 2021). However, it is necessary to increase the level of management system and accessibility of financial mechanisms on accelerated development of enterprise in agricultural and agrarian sector, and thereby to enhance the competitiveness among the different subjects and to stipulate increase of the production growth in the most important food products.

In the Table 4 there is analyzed a dynamic of production of the main types of industrial agrarian food production during 2011-2021. We can see the growth on separate main types of industrial agrarian food production during 2011-2021: wheat flour, bread, sugar, canned fruits and vegetables. At the same time, we can observe the decrease in production of the vegetable butter. It is necessary to strengthen and take effective measures on drawing on reserves and opportunities of development of the main types of food products.

Table 4. Production of the main types of industrial agrarian food, thousand tonnes (2011-2021).

Indicators	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Wheat flour	1328,0	1381,0	1438,0	1476,0	1507,0	1582,0	1601,3	1602,9	1781,7	1842,9	1498,2

<b>Bread</b>	1166,0	1169,0	1181,0	1186,0	1198,0	1210,0	1222,8	1235,0	1256,4	1294,6	1278,1
<b>Vegetable butter</b>	80,0	99,8	100,2	106,9	106,7	82,3	80,4	71,1	75,1	75,1	72,9
<b>Canned fruits and vegetables</b>	149,6	147,3	153,3	159,1	147,9	156,5	158,9	164,7	191,5	186,7	216,1
<b>Sugar (including granulated sugar)</b>	334,7	355,7	423,1	410,6	335,6	418,7	228,4	203,1	271,0	246,5	340,6

**Source.** Prepared by the author based on SSCAR <https://www.stat.gov.az/source/industry/>

The main indicators of enterprises producing food production in Azerbaijan during 2011-2021 are analyzed in Table 5. From the data in Table 5 it can be seen that during 2011-2021 period the number of food production enterprises in Azerbaijan increased from 396 to 540. The quantity of private entrepreneurs registered in the industrial activity sector of the food production sphere increased from 2770 to 6623. The food production volume of the production enterprises of the food production increased in money terms from 2,1 billion manat to 4,5 billion manat.

Azerbaijan has reserves and opportunities of enhancement of the strategic type of food production and increase of production volume of the most important types of food by virtue of territories liberated from the Armenian occupation. There are fruitful and productive irrigable lands in the Garabagh and Eastern Zangezur economic regions, where feed grains can be cultivated, and modern hi-tech farming enterprise, leading agricultural and agrarian units, households, agrarian industrial parks, agrarian parks and food cluster transformations can be developed for intensive production of the food staple.

Table 5. The main indicators of enterprises producing food production in Azerbaijan (2011-2021).

Indicators	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Number of going concerns, total	396	427	439	389	382	391	361	393	449	487	540
state	16	17	17	18	18	16	7	7	9	9	9
Private	380	410	422	371	364	375	354	386	440	478	531
Private entrepreneur, registered in the industrial activity sector, quantity	2770	3170	3353	3752	4079	4290	4508	4754	5252	6042	6623
Industrial production volume, mln. manat	2108,0	2575,0	2286,4	2433,0	2307,6	2964,7	2999,8	3050,8	3584,8	3884,3	4495,6
Share of the sector in total industrial production in the country, %	1,5	1,5	6,7	7,3	8,8	9,1	7,4	6,4	7,6	10,4	8,1
Share of non-oil sector in the non-oil industrial sector of the country, %	7,5	9,3	8,3	9,5	11,5	11,4	9,3	7,7	9,3	13,3	9,8

**Note.** Prepared by the author based on the materials in: <https://www.stat.gov.az/source/industry/>

In the Table 6 there is reviewed the volume of different food consumption per capita in Azerbaijan in 2011-2021. We can see that annual volume of consumption of different types of the most important food products during 2011-2021 has relative growth, and these factors allows for the conclusion that taking on the tasks of increase of the living conditions and income levels of the population of the country give the results. However, at the same time we can mention that the most part of population in the country finds it hard to provide themselves with high quality food products and prefer to buy low-cost similar products.

Table 6. Volume of consumption of the important types of food products per capita in Azerbaijan in 2011-2021, kg.

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Meat and meat products	32	32	33	33	33	35	37	40	41	40,8	41,2
Milk and dairy products	246	241	243	247	246	236	238	240	246	258	253
Eggs, pcs.	131	127	138	152	154	156	158	153	165	175	170
Wheat goods (bread and alimentary products, flour, groats, etc.)	154	154	156	159	161	175	179	178	191	193	193
Potato	72	73	74	73	72	75	75	73	82	83,3	84,2
Vegetables and cucurbits	166	157	152	148	154	146	143	148	166	172	176,4
Fruits and grape	75	72	77	76	83	79	81	84	92	99	95,3
Sugar	19	21	25	26	22	24	26	25	26	26,9	27,3
Vegetable butter	9,2	8,6	8,8	10,8	12,6	15,9	16	15,1	16,1	15,3	9,4

**Source.** Prepared by the author based on: <https://www.stat.gov.az/source/agriculture/>

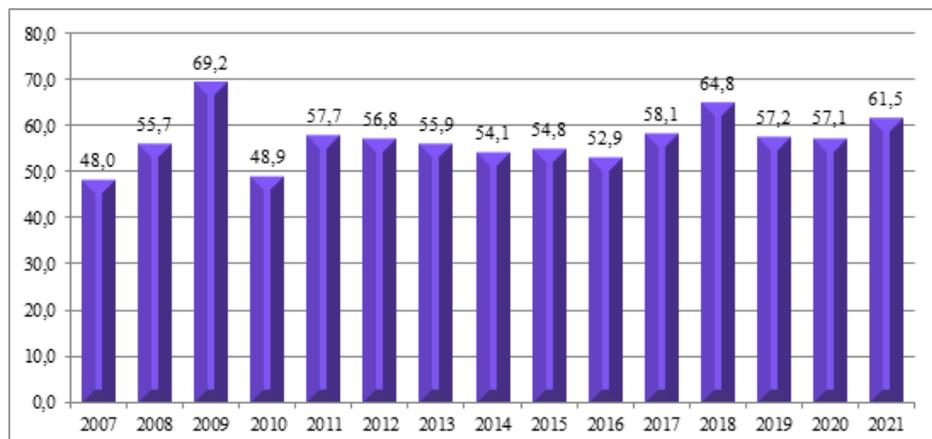
In the Table 7 we have reviewed the composition of minimum subsistence basket and actual level of food products consumption in Azerbaijan in accordance with accepted standards dated after June 6<sup>th</sup>, 2014. Based on this we can see that on average per capita the standard ratio on bread and bread products composed 126,1 kg/year, and the actual data in 2020 was 126,2 kg/year. The indicators of consumption volume of a number of food products per capita are: potato – ratio 50.7 kg, actual - 84,2 kg/year; vegetables and cucurbits – ratio 97 kg, actual – 176.4 kg/year; fruits and berries – ratio 46, actual - 83,7 kg/year; meat and meat products – ratio 31,5, actual - 41,2 kg/year; milk and dairy products – ratio 232,3, annual - 253 kg/year; fish and fish products – ratio 7,7, actual - 7,4 kg/year; eggs – ratio 153, actual 170 kg/year; sugar and patisserie – ratio 17, 4, actual 30,1 kg/year; vegetable butter and margarine – ratio 9,8, actual 13,5 kg/year and dairy butter – ratio 6,7, actual - 3.8 kg/year. This shows the advance in this regard.

Table 7. Composition of minimum subsistence basket and actual level of food products consumption in the Republic of Azerbaijan in accordance with operative law (standard dated after June 6<sup>th</sup>, 2014, kg/year).

No.	Indicators	Average per capita	Population under working age (children 0-15 years)	Working age population	Population over working age (retirees)	Actual consumption per capita, 2021
	Population ratio, %	100,0	22,6	68,4	9,0	-
01.	Bread and bread products	126,1	100,5	136,8	107,9	126,2
02.	Potato	50,6	42,0	54,8	40,2	84,2
03.	Vegetables and cucurbits	96,9	100,7	97,2	85,2	176,4
04.	Fruits and berries	45,9	76,0	38,0	32,0	83,7
05.	Meat and meat products	31,5	29,6	32,9	25,6	41,2
06	Milk and dairy products	232,3	258,6	223,6	233,8	253
07	Fish and fish products	7,7	8,0	7,7	6,8	7,4
08	Eggs, pcs.	153	183,0	150,0	100,0	170
09	Sugar and patisserie	17,4	19,7	16,9	15,8	30,1
10.	Vegetable butter and margarine	9,8	7,0	10,9	8,4	13,5
11.	Dairy butter	6,7	6,0	7,0	5,8	3,8

**Source.** Prepared by the author based on materials: <https://www.stat.gov.az/source/agriculture/>

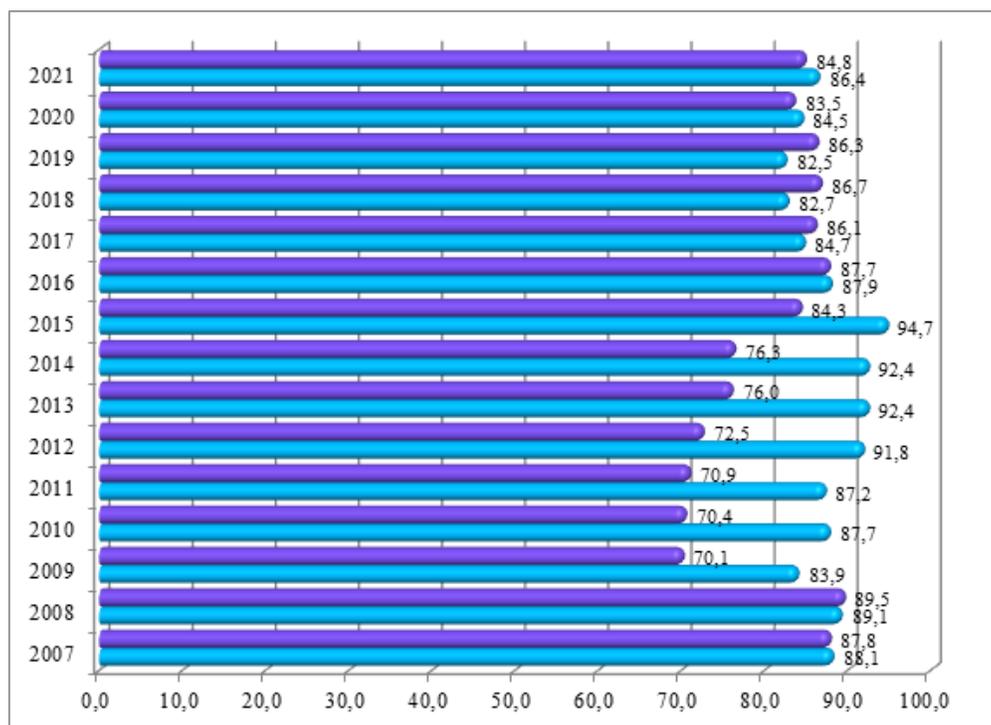
In Azerbaijan, the most important factor is a level and adequacy of self-sufficiency with wheat. By virtue of effectual and complex measures, the level of self-sufficiency with wheat of the country in 2021 increased %4.4 in comparison with 2020, and composed %61,5 % (see Figure 1).



**Figure 1.** Level of self-sufficiency with wheat in Azerbaijan, %, 2007-2021.

**Source.** Prepared by the author based on the materials of SSCAR - <http://stat.gov.az/>

In the Figure 2 it is reviewed the level of self-sufficiency with meat and meat products, as well as milk and dairy products in Azerbaijan in 2007-2021. As it can be seen from the data, during recent years with little to no changes are observed, and the level of self-sufficiency with all types of meat and meat products, and also milk and dairy products remain stable on the same place.



**Figure 2.** Level of self-sufficiency with all types of meat and met products, and milk and dairy products in Azerbaijan, %, 2007-2021.

**Source.** Prepared by the author based on the materials of SSCAR - <http://stat.gov.az/>

Considering the above, in the context of new challenges and priorities of the post-pandemic period it is required to strengthen the productivity and increase the competitiveness of food production enterprises in Azerbaijan, and in this context it is necessary to consider a number of important factors:

1. improvement of the state policy and increase of the food safety in the context of the global transformations is required.
2. increase of efficiency of the operating mechanisms of provision with the necessary stocks on strategic types of food products are required.
3. renovation and improvement of the state regulation mechanisms and food safety control of the population in the country are required under modern complicated conditions.
4. development and implementation of more effective and stimulating mechanisms of the state support on increase of competitiveness of the food production enterprises in the context of the global food safety is required, etc.

## CONCLUSIONS

To strengthen the food safety and increase the competitiveness of the food production enterprises in Azerbaijan it is necessary to assess objectively the modern realities and to consider a number of factors in the near- and long-term outlook. In the context of the new challenges of world food security, optimization and improvement of operational mechanisms and instruments are required to increase the level of food security and competitiveness of food production companies in Azerbaijan. In addition, it is necessary to provide a positive environment for a healthy lifestyle of the country's population, avoiding the negative outcomes of food poisoning and poor-quality food products. In addition, a more active implementation of high technology, the acceleration of the absorption of new innovations and their implementation in the food sector are required to increase the competitiveness of food production enterprises.

In the administrative layer, it is necessary to clearly identify the tasks and functions of each state authority, responsible for strengthening of the food safety of the country and increase of competitiveness of the food industry enterprises with creation of the healthy competitive environment and implementation of the stimulating mechanisms in real time. For this, it is important to improve the current legal and regulatory setting of development of the food industry enterprises, to strengthen the control system on food, and to strengthen the material and technical basis of the food safety sector subjects. The issues and

problems of competitiveness of the food industry enterprises should be reviewed complexly by conducting advanced assessment studies on risk factor in connection with the solution of the problems slowing down the increase of competitiveness of these enterprises under conditions of impact of the global food safety. The tax system in the country as well as rational implementation of fiscal mechanisms and tax preferences on stimulation of food sector enterprise operations must be reviewed as well, which can cause the strengthening of food safety in the country in a whole.

Finally, it is necessary to enhance the international cooperation relations with specialized food companies and technological companies, and the attraction of foreign investments for realization of more large innovational projects of the strategic development of the food industry sector. Nevertheless, despite these problems, in general the advances in Azerbaijan compared to previous decades are significant in the sense that there is conducted a balanced state policy which provide some resistance against negative results of global impacts. However, the recommendations here stated will help to strength and improve these results.

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