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ABSTRACT

of the dissertation for the degree of Doctor of Sciences

**ECONOMIC PROBLEMS OF SUSTAINABLE FOOD SUPPLY
IN THE CONTEXT OF GLOBALIZATION**

Speciality: 5312.01 – Field economy

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Applicant: **Azer Aghazeynal Gurbanzade**

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The work was performed at Agricultural Research Center under the Ministry of Agriculture of the Republic of Azerbaijan.

Scientific advisor: Doctor of Economic Sciences,
Associate Professor **Anar Fazil Abbasov**

Official opponents: Doctor of Economic Sciences, Professor
Eldar Rza Ibrahimov

Doctor of Economic Sciences, Professor
Maharram Jalal Huseynov

Doctor of Economic Sciences, Professor
Safar Hasan Purhani

Doctor of Economic Sciences, Professor
Vilayat Ibrahim Ismailov

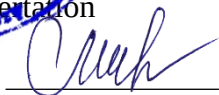
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Doctor of Economic Sciences,
Professor **İslam Haji İbrahimov**

INTRODUCTION

Research issue rationale and development rate. Against the background of the deepening globalization process, changes in the system of international economic relations and general economic fluctuations are significantly penetrating the socio-economic life of each country. The effects of globalization on the national economy have a deeper impact, especially on sensitive areas. If these effects are not prevented, these effects turn into risks. Risks, in turn, open the way to threats and dangers. The socio-economic problems brought about by globalization processes also have a harmful effect on the socio-economic life of developing countries, especially. These effects, against the background of deepening socio-economic inequality and polarization of incomes among the countries of the world, give rise to more dangerous trends.

Developed countries gain more success and income from the globalization process. This is due to the fact that developed countries export industrial and capital-intensive products to the world market, while in developing countries, the process of raw material production and export of raw materials prevails. In such a situation, fluctuations in the price of raw materials on the world market have a negative impact on the interests of developing countries. One of the points that complicates the process is that the economies of developing countries have not been sufficiently and fully modernized. Such harmful manifestations cause problems in all sectors of the economy of developing countries, including their national markets. From this perspective, the most sensitive segment of national markets and affecting the social interests of all segments of society, especially the less well-off, is considered to be food markets. Any changes in food markets do not bypass the food supply of the population.

Providing the population with food products has always been relevant, being one of the most important goals of the state's socio-economic policy, and at the same time, it is distinguished by its important strategic importance in maintaining social stability in society.

Providing the population with food products is becoming even more relevant in modern conditions against the background of the

influence of globalization processes and is more exposed to this influence. This is especially characteristic of developing countries, including countries that import food products.

One of the points that complicates the situation is that the spread of transnational companies to a fairly large number of geographies of countries ultimately leads to the suppression of local production in those countries. This trend is becoming even more relevant against the background of the weakening of the competitiveness of developing countries. In order to prevent these problems, since the beginning of the 21st century, within the framework of reforms aimed at accelerating the socio-economic development of the regions of our country, measures have been taken to improve infrastructure provision, as well as expand the sales networks of agricultural products, maintain the economic and physical accessibility of food supply for the population, and increase the level of social accessibility. The “Strategic Road Map for the Production and Processing of Agricultural Products in the Republic of Azerbaijan” has been adopted.¹ The Strategic Road Map has identified a number of goals for the development of the production and processing of food products, as well as ensuring food security.

Considering that food security in our country constitutes a political goal in terms of improving food supply, the President of the Republic of Azerbaijan Heydar Aliyev signed the Order “On Approval of the Food Security Program of the Republic of Azerbaijan”. The Order listed necessary measures to effectively address global threats that may arise within the framework of the integration of our independent republic into the world community.²

The increase in energy prices directly affects the food supply of the population. This, first of all, leads to an increase in the cost of agricultural and food products, as well as an increase in the level of prices in the food market. It is precisely in order to neutralize such

¹ Strategic Roadmap for the Production and Processing of Agricultural Products. – Baku: Decree of the President of the Republic of Azerbaijan, December 6, 2016. – 177 p.

² Decree of the President of the Republic of Azerbaijan on approval of the Food Security Program of the Republic of Azerbaijan // March 2, 2001. – Baku, 2001.

harmful manifestations that the “State Program on Reliable Provision of the Population of the Republic of Azerbaijan with Food Products in 2008-2015” was adopted, approved by the Decree of the President of the Republic of Azerbaijan dated March 25, 2008.³

Numerous scientific studies have been conducted to solve the economic problems of food supply in the context of globalization. However, there has been no comprehensive approach to the processes related to the changes occurring in the global competitive environment, the fluctuations of the conjuncture in global markets, as well as the study of economic problems in close interaction with each other. Taking all this into account, the topic of this doctoral dissertation, which is aimed at solving the economic problems of sustainable food supply in the context of globalization, is distinguished by its relevance.

There have been researches by both domestic and foreign economists on the mentioned topic. However, issues related to a comprehensive approach to the problem and its solution in the context of modern realities still remain open. In addition, it should be taken into account that the deepening of globalization processes requires new challenges over a certain period of time. Among the economists of our country, Z.A.Samadzadeh, A.K.Alasgarov, E.A. Guliyev, B.Kh.Atashov, G.A.Genjiyev, A.I.Mammadov, A.C.Verdiyev, I.H.Ibrahimov, I.H.Aliyev, M.C.Huseynov, A.F.Abbasov, E.R.Ibrahimov, N.C.Gafarov, H.A.Khalilov, V.H. Abbasov, R.A.Balayev, R.A.Huseynov and others have conducted extensive research in this area. Foreign economists E.Krylatikh, I.I.Machenovich, E.V.Serova, E.N.Borisenko, V.S.Balabanov, A.A.Shutkov and others have studied problems related to food supply.

Object and subject of research. The object of the research is the agricultural sector, which forms the material basis of food supply, as well as the sectors operating closely with it - the food industry, supply structures and other related institutions. The subject of the research is

³ Decree of the President of the Republic of Azerbaijan on approval of the State Program on sustainable provision of the population with food products in 2008–2015 // 25 March, 2008. – Baku, 2008.

price, financial, investment, and credit relations, which reflect the economic problems of food supply in the context of globalization.

Aims and objectives of the research. The purpose of the research is to investigate the scientific and theoretical issues of sustainable food supply in Azerbaijan, analyze the current state and development trends of food supply, identify directions for improving the organizational and institutional mechanism of sustainable food supply, neutralize market fluctuations in the food market, and determine the priorities of sustainable food supply. In accordance with the main goal of the research, the following scientific and practical tasks were formulated, each of which was implemented sequentially:

- the impact of globalization on the national economy, its specific aspects were investigated;
- the specific features of sustainable food supply in our republic and the factors affecting it were identified;
- indicators characterizing sustainable supply and world experience were investigated;
- the role of agriculture and the processing industry in the formation of sustainable food supply was substantiated;
- the current state of food supply in Azerbaijan was analyzed;
- the role of foreign trade relations in the structure of food supply and its dynamics were analyzed;
- the priorities for the formation of a competitive production structure in the conditions of globalization were identified;
- the main directions for improving cooperation-integration relations between agriculture and the processing industry, procurement and supply structures were developed;
- the role of the transition to a targeted subsidy system in sustainable food supply was determined;
- the mechanisms for improving the system of insurance of agricultural production and risk management in the food market were investigated;
- the priorities for ensuring food security were identified;
- proposals and recommendations on the topic under study were developed.

Research methods. The research was completed using monographic, scientific abstraction, structural-functional, comparative analysis, synthesis, and other economic-statistical methods, referring to scientific principles.

The main provisions put forward for defense:

1. There is a need to classify the harmful effects of globalization processes on the national economy.

2. In the context of globalization, it is important to study the effects of the global competitive environment on the national economy of the country.

3. In the context of globalization, there is a need to strengthen sustainable food supply. This is especially important in terms of food independence, which is an important component of the country's economic security.

4. It is necessary to identify socio-economic problems of forming sustainable food supply in the Republic of Azerbaijan and to show ways to solve them.

5. There is a need to study the physical, economic and social accessibility of food supply.

6. In terms of forming sustainable food supply, cooperation and integration of production, processing and service sectors, improvement of integration relations should be constantly paid attention to as urgent problems of the modern era.

7. Prevention of unfavorable manifestations of foreign competition is extremely important in stabilizing the food market.

8. There are problems related to meeting and systematizing the purchasing power demand of the population.

Scientific novelty of the research. The scientific novelty of the research includes the following:

- Similar and different aspects of food security, food independence and food supply in a global competitive environment, as well as the interrelation and dependence between them, have been investigated;
- The characteristics and the system of indicators of sustainable food supply in the context of integration into the global space have been classified;

- The effects of the modernization process on the formation of a competitive agricultural and processing industry complex have been determined;
- The impact of the formation of agrarian market infrastructure on food supply, the characteristics of agrarian-market infrastructure in the global value chain have been investigated;
- Modern trends observed in the agricultural and food complex have been classified;
- The mechanisms of cooperation between the public and private sectors, as well as the involvement of foreign partners in improving agricultural product insurance systems, have been investigated;
- The interaction of protectionist policy and free trade policy in protecting the domestic food market has been studied;
- The potential opportunities of our country in improving sustainable food supply, the relationship between the complex development of agriculture and food supply were examined through a SWAT analysis, and the strengths and weaknesses, threats and opportunities of our country's food complex were identified.

Theoretical and practical significance of the research. The theoretical significance of the research lies in the promotion of a new scientific approach to studying the economic problems of food security in the context of globalization, and the practical significance lies in the effective use of the potential of agriculture and the food industry, which constitute the material basis of food security, and the preparation of proposals and recommendations for the realization of promising opportunities for improving the country's food security within the framework of involving the liberated territories in the economic potential.

The research results have practical significance in terms of stimulating entrepreneurial activity in the agricultural and processing industries, as well as creating a sustainable food supply. The obtained scientific results can be used in the future as a useful scientific information base in the preparation and implementation of various projects and state programs in the field of food security, as well as in the teaching process in higher education institutions specializing in economics.

Approbation and implementation. The main provisions and main results of the research work have been reflected in reputable local and foreign journals, as well as in the materials of scientific and practical conferences of republican and international importance. The main provisions of the dissertation work have been reflected in a total of 42 titles: 21 articles, 6 of which are abroad, 19 conference materials, 4 of which are abroad, 2 monographs. Among the conference materials, the following theses can be cited: “Assessment of the impact of globalization on the national economy” (Baku, 2022), “Factors affecting food supply against the background of global problems of mankind” (Baku, 2023), “The problem of food supply in the global environment” (Almaty, 2023), “The Impact of Improving Food Supply in Modern Conditions on Enhancing Competitiveness” (Romania, 2024), “Comparative assessment of food supply and agriculture in the context of globalization” (Baku, 2024), “The impact of reducing the cost of circulation on improving the food security of the population” (Gomel, 2024).

During the research, the author also published articles such as “The role of state agrarian policy in improving food security” (Baku, 2023), “The role of improving agricultural market infrastructure in improving food security of the population” (Baku, 2024), “The role of developing cooperative relations in the context of globalization in improving food security of the population” (Baku, 2024), “The impact of the implementation of guaranteed and intervention prices on food security” (Ljubljana, 2024), “Government policy on ensuring food security: Bibliometric analysis” (Ukraine, 2025), “The role of improving the agricultural insurance system in improving food security” (Moscow, 2025), “The impact of regulating foreign economic relations and protecting the domestic market on food security” (Baku, 2025) and others.

In addition, the author's monographs “Economic Basis of Sustainable Food Supply”, “Modernization of the Food Complex and Problems of Sustainable Development” and the book “Food Supply: Scientific and Methodological Analysis” have been published.

The name of the institution where the dissertation work was performed. Agricultural Research Center under the Ministry of

Agriculture of the Republic of Azerbaijan.

The total volume of the dissertation with a sign indicating the volume of the structural sections of the dissertation separately. The dissertation consists of an introduction, chapter V, conclusion, and a list of used literature. Introduction - 13408 characters, chapter I - 90562 characters, chapter II - 60097 characters, chapter III - 79277 characters, chapter IV - 73730 characters, chapter V - 75113 characters, Conclusion - 17097 characters, List of used literature - 33758 characters. The number of characters of the dissertation is 409284 characters, excluding tables, diagrams, schemes, and list of used literature.

BASIC CONTENT OF THE DISSERTATION

The introductory part of the dissertation work provides the relevance and degree of development of the topic, the object and subject of the research, the goals and objectives, the methods, the main provisions put forward for defense, its scientific novelty, theoretical and practical significance, its approval and application, and the total volume of the work.

Chapter I of the research work, entitled “**Scientific and theoretical issues of globalisation and sustainable food supply**”, examines the impact of globalisation on the national economy, its specific features, indicators characterising the specific features of sustainable food supply and factors affecting it, and issues of world experience in sustainable food supply. As the world economy becomes globalised and the interaction between countries involved in the globalisation process strengthens, the conditions of dependence increase. The level of economic development of countries involved in the globalisation process has an impact on this dependence. Developed countries of the world export more industrial products to the world market, and also import raw materials and materials. Naturally, there is a sharp difference between the prices of raw materials and materials and the prices of finished industrial products on the world market. Developed countries benefit more from these processes.

The globalization of markets has also played an important role in this process. The globalization of markets implies the elimination of

*any trade and customs restrictions on the movement of products and services. The globalization of markets serves to enable developed countries to gain greater sales shares in global markets.*⁴

The harmful effects of the globalization process, especially on the national economies of developing countries, are also closely related to the fact that not all developing countries operate in an open economic system. In this regard, Professor E.Hajizadeh, *rightly notes that the contradictions of globalization are due to the fact that each of its driving forces is unable to achieve its own contradictions and general unification. On the other hand, globalization widens the gap between developed countries and third world countries. In its negative manifestations, the global flow slows down the development of national states, and leads to changes in public consciousness, economic and cultural thinking.*⁵

In the current modern conditions, where the globalization process is deepening, issues related to food security and food security of the population should be assessed from the perspective of the national security of the state. This is due to the fact that the problem of food security has already become a rather urgent problem for the state. At the current stage of the development of human civilization, improving the food security of the population has become one of the most important priorities of the state's economic policy. The problem of food security is already deepening to the level that will affect the socio-economic stability of the country.

The analysis of scientific approaches shows that, in general, the works of economists use concepts such as food security, food supply, food security, food independence, food problem, and in some cases, almost no accurate scientific description of these concepts is given. A.A. Semyonov, when examining the processes related to food supply in his scientific works, mostly uses the concept of “Food Independence”. According to the author, *food independence is characterized as a process that reflects the state of agriculture and the agro-industrial complex as a whole, as well as a reliable supply of*

⁴ Abbasov, A.F. Modern trends in economic development: global challenges, threats and prospects. Monograph. / A.F.Abbasov – Baku, 2024. – 576 p.

⁵ Hajizadeh, E.M. Globalized economy / E.M. Hajizadeh – Baku, 2006. – 509 p.

*agricultural products. The author believes that food independence means providing the population with food products by eliminating the threat of hunger and malnutrition.*⁶ However, in our opinion, the author could have approached the problem from a broader perspective and with more precision. We believe that the food independence of the state primarily means the ability of the state to meet its needs for basic food products at the expense of its internal resources. A.I. Altukhov's attitude to this problem is much deeper and more precise. Thus, the author believes that *the fact that the country provides itself with food at a certain level by meeting the main part of the population's food needs at the expense of domestic production is one of the most important aspects characterizing food independence.*⁷ Michael Tracy believes that *food security implies an increase in the specific weight of domestic production in meeting people's needs for food products and includes a system of measures aimed at protecting local food products.*⁸

Therefore, in the context of globalization, sustainable food security of the population is an activity aimed at meeting the population's demand for high-quality food products in accordance with scientifically substantiated standards, and it is a process based on mutual economic relations between producers, sellers, consumers and state institutions.

The structure of food security is quite complex. At the same time, the real sector of the economy, including agriculture, processing industry, production of environmentally friendly products, the fishing sector and other similar areas, constitute the material basis of food security, combining the supply of goods in the food market. Economic, physical and social accessibility also play an important role in the

⁶ Semenov, A.A. Russia's accession to the WTO and food security. In Agro-industrial policy and Russia's accession to the WTO. Moscow: Encyclopedia of Russian villages. VIAPI, 2003. – pp. 64–66.

⁷ Altukhov, A.I. Russia's Accession to the WTO and Problems of its Agricultural Development and Agro-Food Policy and Russia's Accession to the WTO: Collection of Articles of the Nikonov Readings. – Moscow: RASS (Russian Academy of Agricultural Sciences), 2003. – pp. 30–31.

⁸ Tracy, M. Agriculture and Food in the Economies of Developed Countries: Introduction to Theory, Practice and Policy / M. Tracy - St. Petersburg: Economic School, - 1995. - 431 p.

structure of food security. Physical accessibility refers to the volume, variety and quality of the produced product; economic accessibility refers to its economically efficient acquisition and competitiveness. Social accessibility, on the other hand, forms the supply of goods in the food market in accordance with the purchasing power of the population. As we noted above, food security involves the formation of both local production and the optimal share of imports in the market.

Neutralizing the harmful effects of factors affecting food security can play an important role in preserving the country's food independence. In this regard, taking into account the conditions of globalization processes, the factors affecting food security are reflected in Chart 1.

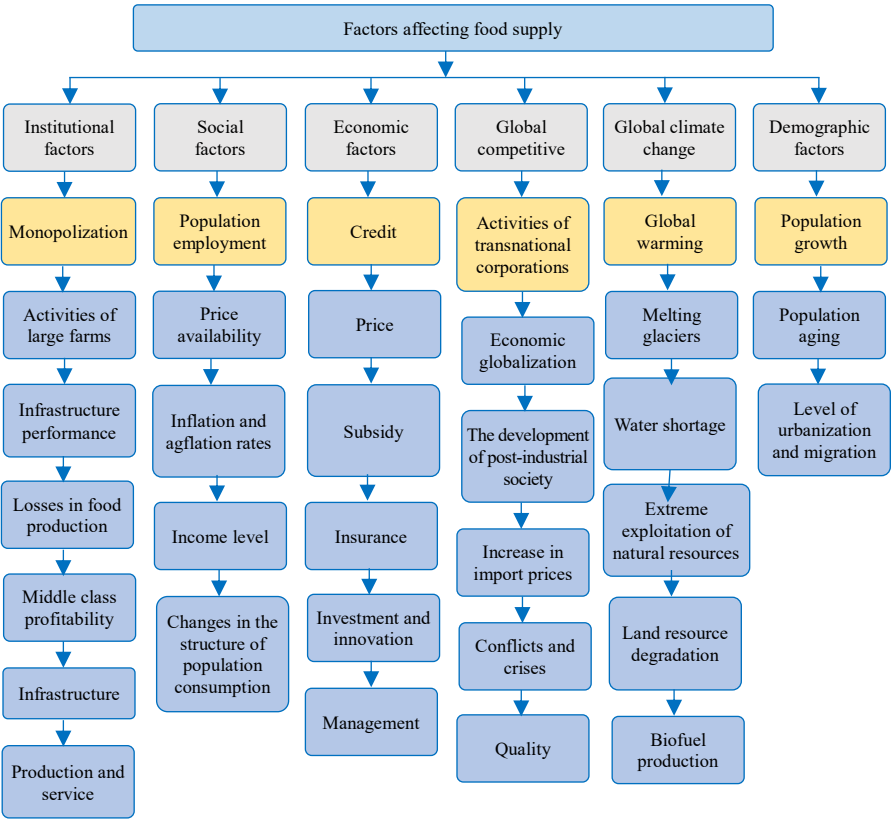


Chart 1. Factors affecting food supply
Source: Chart compiled by the author.

As can be seen from the chart, the deepening of globalization processes can significantly affect the social life of each individual, and the influence of global factors in meeting people's food needs can significantly increase.

Researches show that in the context of globalization, quite specific characteristics emerge between food security and food security. It is true that in some cases, economists try to identify the concepts of food security, food security, and food product safety (such as food safety), but the concepts mentioned are quite different in nature.

In the overall ranking of world countries on food security, Finland ranks first with an index of 83.7 in the overall assessment of economic access to food resources and physical access. Norway, which completes the third place in the world ranking, has an index of 80.5 in the overall assessment, 87.3 in the economic access to food products, and 60.4 in the physical access level. India is in 68th place in the ranking of world countries, with an economic access index of 69.3 and a physical access level of 62.3. Of course, *the number of hungry people in the world's population is mainly in Africa (20.4%), Asia (8.1%), Oceania (7.3%), and Latin America and the Caribbean (6.2%). In absolute terms, the majority of hungry people in the world live in Asia - 384.5 million people, Africa (298.4%), Latin America and the Caribbean (41 million), and Oceania (3.3 million).*⁹

In the context of globalization, the emergence of sharp differences in the level of economic modernization between regions of the world has significantly affected the agrarian and food complex, including the food supply of the population.

In 2005, 12.0% of the world's population, or 788.8 million people, suffered from undernourishment. Between 2005 and 2014, as a result of measures implemented by international organizations, a certain decrease was observed in this indicator. Thus, in 2014, the proportion of the population suffering from hunger fell to 7.5% of the total world population; in other words, the number of undernourished people

⁹ Food and Agriculture Organization of the United Nations. (n.d.). [Report excerpt] (p. 13). Retrieved from <https://openknowledge.fao.org/server/api/core/bitstreams/0ccd08a0-b1d8-48a2-93c4-cb9a82a7d64a/content>

dropped to 552.3 million.

Studies show that against the background of the COVID-19 pandemic, a sharp deterioration in the global food security problem was observed in 2020. Following a period of relative stability between 2015 and 2019, the total share of people facing moderate to severe food insecurity worldwide rose sharply from 25.0% in 2019 to 28.8% in 2020, the first year of the pandemic. The distribution of people suffering from hunger in different regions of the world is shown in diagram 1.

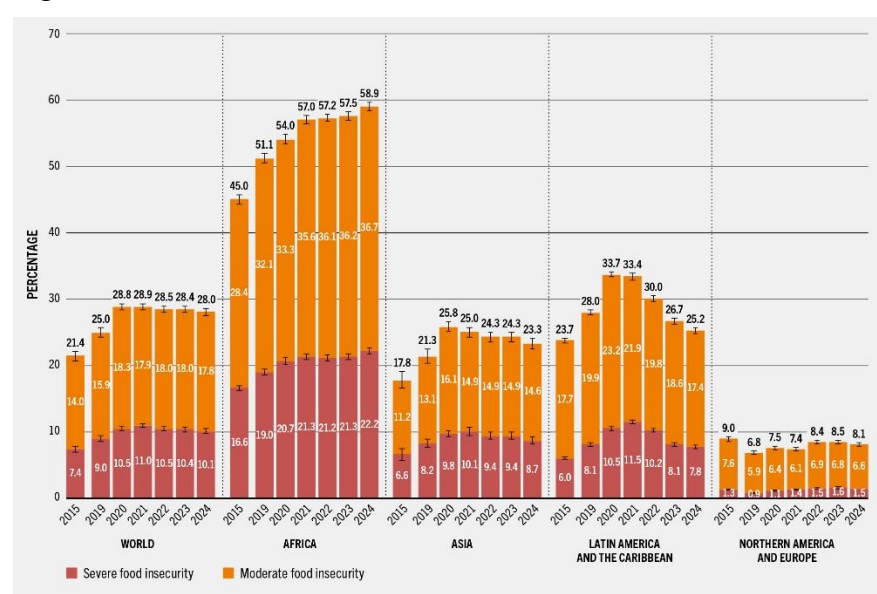


Diagram 1. Geography of people suffering from hunger by region of the world

Source: FAO. 2025. FAOSTAT: Suite of Food Security Indicators. [2025].

<https://openknowledge.fao.org/server/api/core/bitstreams/e3c60970-7123-4de4-9d82-81f4a08912e4/content>

As can be seen from the diagram, between 2015 and 2024, the proportion of people severely affected by food insecurity in the structure of the total world population increased from 7.4% to 10.1%, while the share of people facing overall food insecurity (moderate and severe) rose from 21.4% to 28.0%, respectively. In the African region, the share of those suffering from severe food insecurity rose from

16.6% to 22.2%, while the level of overall food insecurity increased from 45.0% to 58.9%.

Figure 1 presents the level of socio-economic inequality based on the share of national income held by the top 10 percent of the population across countries worldwide.

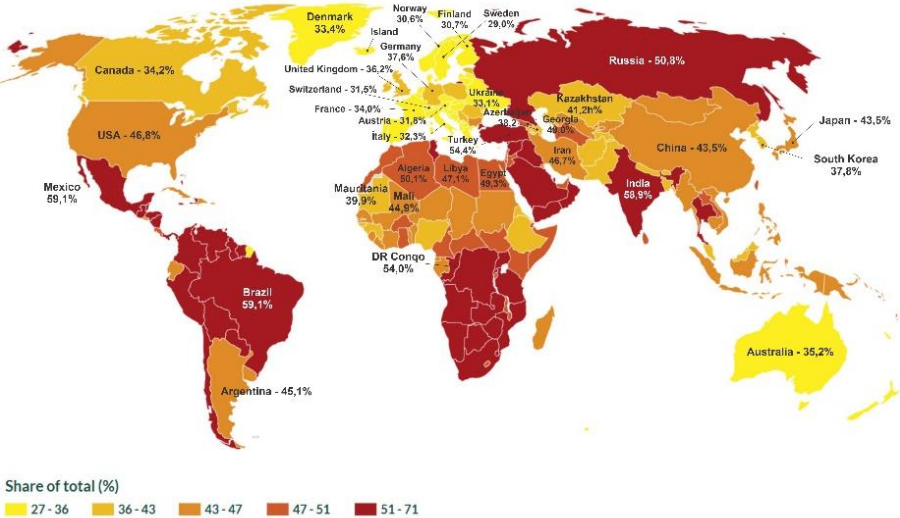


Figure 1. The share of the top 10% income earners in total global income across countries worldwide, 2024

Source: https://wid.world/world/#sptinc_p90p100_z/US:FR:CN:ZA:GB:WO-PPP/2024/eu/k/p/yearly/s/false/24.708000000000002/70/curve/false/region

As can be seen from the figure, the level of socio-economic inequality varies significantly among the countries of the world. According to data from the World Inequality Database (WID, 2024), countries where the share of the top 10% wealthiest population in national income is relatively low include Sweden (29.0%), Norway (30.6%), Finland (30.7%), Switzerland (31.5%), Austria (31.8%), Italy (32.3%), Ukraine (33.1%), Denmark (33.4%), France (34.0%), Canada (34.2%), Australia (35.2%), the United Kingdom (36.2%), and Germany (37.6%). A more equitable distribution of income is observed in these countries.

Among the countries experiencing a moderate level of socio-economic inequality are South Korea (37.8%), Azerbaijan (38.2%), Mauritania (39.9%), Kazakhstan (41.2%), China (43.5%), Japan (43.5%), Mali (44.9%), Argentina (45.1%), the United States (46.8%), Iran (46.7%), Libya (47.1%), Georgia (49.0%), Egypt (49.3%), Algeria (50.1%), and Russia (50.8%). In these countries, a significant portion of national income falls to the top 10 percent of the population with the highest income.

The highest levels of socio-economic inequality are observed in countries such as the Democratic Republic of the Congo (54.0%), Turkey (54.4%), India (58.9%), Brazil (59.1%), and Mexico (59.1%). In these countries, more than half of the national income goes to the top 10 percent wealthiest population, which indicates a high degree of income concentration and a more pronounced socio-economic differentiation.

Research suggests that rising food prices in different countries around the world have ultimately led to an increase in the share of food spending in the structure of consumer spending. In 2023, there was no imbalance between food price increases and income growth trends in developed countries. Thus, *the share of food expenditures in the composition of total consumer spending in the United States was 6%, in the United Kingdom 7.2%, in Australia 8.7%, in Germany 9.0%, in France 10.2%, and in Japan 11.3%.*¹⁰

As can be seen from Figure 2, as of the beginning of 2025, food inflation across countries worldwide is grouped into various levels. According to the map, food price growth in many countries of Latin America, Africa, and Eastern Europe lies within the high (5–30%) or very high (>30%) range. Rising energy and agricultural costs, as well as global logistics issues, remain among the main factors contributing to food prices staying high across many regions.

¹⁰ Global Network Against Food Crises & Food Security Information Network. Global Report on Food Crises 2023. [Report].

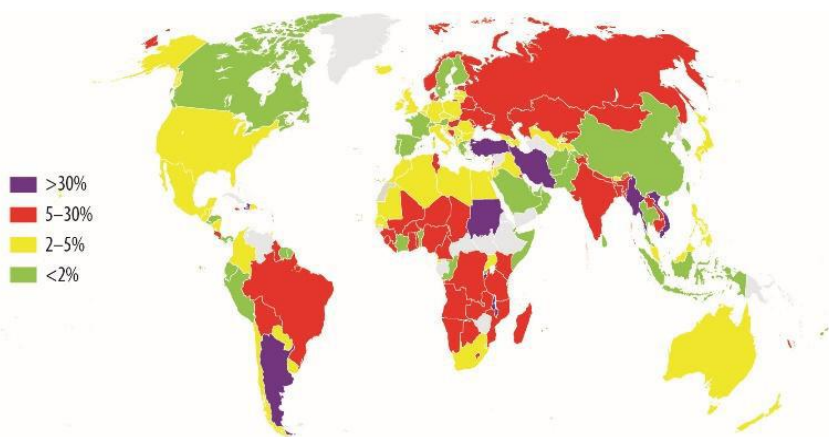


Figure 2. The level of food inflation across countries worldwide at the beginning of 2025 (in %)

Source: World Bank. (2025). Food Security Update. Update: March 14, 2025. Washington, DC: World Bank. Figure 2a. Food Inflation Heat Map.

<https://documents1.worldbank.org/curated/en/099032725232035692/pdf/P180304-0d48c5c3-58ae-439e-a187-6ab83548de5b.pdf?utm>

As we mentioned above, the emergence of problems in the world food supply is associated with many factors. Although the poverty level of the population plays a significant role in this process, in some cases, the high use of manual labor in those countries, or rather, the insufficient intensification and modernization of production, leads to low productivity. All this ultimately leads to a deterioration in food supply in those regions and the emergence of shortages in the field of food products.

Chapter II of the dissertation, entitled **“The Modern State and Development Trends of Food Security in the Republic of Azerbaijan”**, analyzes the current state of food security in the Republic of Azerbaijan, the role of agriculture and the processing industry in the formation of sustainable food security, import-export relations in the structure of food security and its dynamics. Since solving problems in the field of food security is considered important, the state adopted various programs to improve food security. Within this framework, many laws, state programs and strategic roadmaps were approved. It is no coincidence that the

Decree of the President of the Republic of Azerbaijan “On Approval of the Food Security Program of the Republic of Azerbaijan” dated March 2, 2001 was adopted. It is emphasized here that food security is not only one of the main indicators of human dignity, but also one of the fundamental human rights. For this reason, the realization of this right in the country is considered one of the main tasks facing the state. The document states that food security means that every citizen has access to sufficient and quality food to live a healthy and productive life. The challenges in this direction can be overcome, first of all, by reducing the poverty level of the population, strengthening the food supply system, and increasing the efficiency of using food resources.¹¹

It is as a result of the implementation of these measures that positive changes have been achieved in the food supply of the country's population in recent times. The level of self-sufficiency in food products, which constitutes the main criterion of food security, is achieved in plant and animal husbandry products, as well as in the products of the processing industry. In this regard, the level of self-sufficiency in plant products is reflected in table 1.

As can be seen from the table, decreasing trends were observed in the level of self-sufficiency in cereals, with the exception of paddy rice, during the period 2018–2024. Thus, while the self-sufficiency level in cereals was 74.1% in 2018, this indicator equaled 68.4% in 2024. The self-sufficiency level in wheat for human consumption declined from 64.8% to 56.1%. All these factors simultaneously affected the production of products that constitute the feed base for livestock farming.

¹¹ Decree of the President of the Republic of Azerbaijan on approval of the Food Security Program of the Republic of Azerbaijan // March 2, 2001. – Baku, 2001.

Table 1.

Level of self-sufficiency in crop products in 2018-2024 (in %)

Product type	2018	2019	2020	2021	2022	2023	2024	In 2024 compared to 2018
Cereals (excluding rice)	74,1	67,3	68,1	73,7	69,0	70,5	68,4	-5,7
Wheat	64,8	57,2	57,1	61,5	56,7	60,4	56,1	-8,7
Barley	103,1	100,2	94,6	101,9	101,2	95,8	94,6	-8,5
Corn	82,7	80,0	86,6	93,6	78,0	79,7	77,4	-5,3
Emmer wheat	89,2	90,9	86,6	88,5	87,2	81,6	77,5	-11,7
Other cereals	82,3	88,2	93,9	26,7	21,7	42,5	47,9	-34,4
Legumes	72,0	76,1	60,3	56,4	61,5	62,8	65,1	-6,9
Potatoes	90,8	87,8	90,6	88,8	89,0	89,8	88,8	-2,0
Vegetables (total)	115,0	112,0	110,4	106,6	106,8	107,2	105,8	-9,2
Tomatoes	138,0	132,5	131,0	121,1	119,8	118,9	119,7	-18,3
Cucurbit crops and products	99,7	100,8	100,8	102,6	103,2	103,2	101 ,7	+2,0
Fruits and berries	123,2	123,1	116,3	122,9	123,9	135,5	128,5	+5,3
Nuts and hazelnuts	130,0	138,2	138,0	136,5	137,0	139,7	126,1	-3,9
Pomegranates	106,3	110,7	112,0	127,8	125,9	132,8	135,1	+28,8
Grapes	92,5	94,3	95,8	94,4	94,8	93,9	89,4	-3,1

Source: State Statistical Committee of the Republic of Azerbaijan, Food balances of Azerbaijan and official publication, Statistical Bulletin, Baku, 2025, 142 pages, p. 75.

The country's level of self-sufficiency in livestock products is shown in table 2.

Table 2.

Level of self-sufficiency in livestock products in 2018-2024 (in %)

Product type	2018	2019	2020	2021	2022	2023	2024	In 2024 compared to 2018
All types of meat and meat products	82,7	82,5	84,5	86,4	86,0	85,3	83,4	+0,7
Beef and beef products	85,1	86,1	87,4	91,9	93,0	88,4	88,5	+3,4
Mutton and goat meat, products of these meats	98,1	97,6	97,3	98,2	97,0	94,9	96,5	-1,6
Pork and pork products	5,5	5,3	4,7	4,8	4,6	4,7	4,6	-0,9
Poultry and meat products	75,9	74,6	79,0	79,6	78,5	81,7	76,6	+0,7
Milk and dairy products	86,7	86,3	83,5	84,8	83,3	84,0	83,9	-2,8
Eggs	101,5	101,8	100,0	99,1	100,5	102,2	103,7	+2,2
Fish and fish products	83,1	82,2	81,7	78,2	76,7	75,4	77,3	-5,8

Source: State Statistical Committee of the Republic of Azerbaijan, Food balances of Azerbaijan and official publication, Statistical Bulletin, Baku, 2025, 142 pages, p. 76.

The data in the table show that compared to 2018, the overall self-sufficiency level for meat and meat products in the country increased by 0.7 percentage points in 2024. Specifically, this indicator rose by 3.4 percentage points for beef and beef products, by 0.7 percentage points for poultry and related products, and by 2.2 percentage points for eggs. These increases indicate the expansion of production capacities in the livestock sector and a higher degree of meeting domestic demand through local products. During the compared period, the self-sufficiency level for mutton and goat meat decreased by 1.6%. A decrease of 2.8% was also observed in the self-sufficiency level for dairy products.

In recent years, with the exception of cereals, wheat, pulses, and pomegranates, an increase has been observed in the per capita consumption of other crop products. Thus, compared to 2018, in 2024, the volume of consumed cereals decreased by 3.5 kg, wheat consumption by 5.2 kg, pulses by 1.0 kg, and pomegranates by 2.2 kg. Conversely, upward trends were observed in the consumption volume of other crop products. During the compared period, the consumption volume of potatoes increased by 6.9 kg, all types of vegetables by 27.1 kg, tomatoes by 19.7 kg, melons and gourds by 5.1 kg, fruits and berries by 4.4 kg, walnuts and hazelnuts by 3.4 kg, and grapes by 8.4 kg.

Between 2018 and 2024, the annual per capita consumption volume of livestock products increased by 5.2 kg. During this period, an increase in consumption was recorded by 0.8 kg for beef and beef products, 0.8 kg for mutton and goat meat products, 0.1 kg for pork, and 3.6 kg for poultry and related products. An increase was also observed in per capita consumption of milk and dairy products by 16.7 kg, eggs by 42 units, and fish and fish products by 1.0 kg. These indicators can be explained by the growing demand of the population for livestock products and the improvement of food security.

The Strategic Roadmap also notes that in order to achieve equal distribution of income, one of the main priorities is to expand high-income employment opportunities in rural areas and thereby reduce labor migration to cities. In this regard, as a strategic target, it is envisaged to reduce the per capita income gap between Baku and other regions from the current 50 percent to 40 percent in the post-2025 stage.¹²

Increasing the productivity of agricultural crops is considered an important factor of intensification, but at the same time, increasing the productivity level ultimately leads to a decrease in the cost per unit of product. Due to the implementation of this process, it is possible to realize the process of economic diversification in

¹² Decree of the President of the Republic of Azerbaijan on approval of the “Food Security Program” of the Republic of Azerbaijan // March 2, 2001. – Baku, 2001.

agriculture. Thus, due to the limited land areas suitable for agriculture, including arable land, the implementation of intensification processes in agriculture has become an objective necessity.

The growth rate of crop yields generally exhibited a positive trend between 2003 and 2024. In other words, during the compared period, the yield of grain and leguminous crops increased by 4.4 centners, and the yield of sugar beet rose by 73.8 centners. However, in the dynamics of grain crop yields between 2020 and 2024, significantly different trends were observed.

The observed upward trends in the prices of livestock products are mainly due to factors related to crop production, animal population, and productivity, as well as the increase in the level of costs incurred for crop production and the limited nature of the feed base.

In this regard, it is possible to agree with the opinion of Professor, Doctor of Economic Sciences, E.A. Guliyev, *that since the beginning of the 21st century, the processes of further growth and global character of companies operating in the world food markets have accelerated. Currently, about 500 large companies meet the important food requirements of up to 7 billion food consumers in the world, and these companies account for 70% of the world food market. According to the rating table prepared by "Fortuna Global", these companies are in the top 10 of the 500 largest food companies in the world.*¹³ We fully agree with the author's opinion that the above-mentioned ten transnational corporations in the international food market act as significant monopolists in the world food market. In such a situation, especially the transition to the WTO can lead to an increase in the role of foreign producers in the food market.

We can agree with the opinion of Honored Scientist, Doctor of Economic Sciences, Professor B.Kh. Atashov that *it was possible to achieve much higher labor productivity in agriculture in developed countries. In the past, the relative share of agriculture in*

¹³ Guliyev, E.A. Problems and strategic directions of strengthening food security. Monograph. / E.A.Guliyev – Baku: Cooperation, – 2020. – 464 p.

*GDP in a number of countries of the world reached 60-80% compared to other sectors. Now, in developed countries, this indicator varies only within 2-10%. Despite the loss of 200 million jobs in the agricultural sector of the European Union countries over the past 40 years, the volume of crop production has increased several times.*¹⁴ From what the author has noted, we can conclude that there is a greater need to create large farms, increase labor productivity, and increase productivity per hectare in order to improve food security, increase self-sufficiency in basic food products, and at the same time form the price and non-price competitiveness of the produced product.

From the analysis of the sub-section of the commodity structure of imports concerning solely live animals and animal products, it can be concluded that during the compared period, the value of live animals imported into the country, as well as the value of other products of animal origin, increased significantly. During the compared period, the value of plant-based products imported into the country increased by approximately 17.8%, reaching 928 million US dollars. In 2024, animal and vegetable fats and oils valued at 226,504.2 thousand US dollars were imported into the country, which is 60.4% higher compared to 2019. The conducted analyses show that the fastest growth in the composition of food and food products imported into the country was recorded in the product groups covering alcoholic and non-alcoholic beverages, vinegar, tobacco products and their substitutes. This indicates that the demand for these commodity groups has led to an increase in the specific weight in the structure of imports.

During the compared period, within the structure of food industry products imported into the country, the import value of bakery and pastry products made from cereals, flour, and milk, as well as various food preparations, residues, and waste from the food industry, increased the most. All of this stems from the fact that the domestic processing industry is insufficiently modernized, and the products

¹⁴ Atashov, B.Kh. Structural and efficiency problems in the agricultural sector: theory and practice / B.Kh. Atashov – Baku: Kooperasiya, – 2017. – 536 p.

generated by it are not competitive. Furthermore, the competitiveness—specifically product quality and price accessibility for processing facilities—of agricultural output constituting the raw material base for the industry remains relatively low. Consequently, processing industry enterprises prefer imported raw materials. At the same time, finished products produced in the processing industry are unable to fully meet domestic food supply demands. The logical outcome of these processes is that a substantial volume of capital—specifically 2 billion 725 million 177.7 thousand US dollars—is directed solely toward food imports, flowing out of the country. This accounts for 12.9% of total imports into the country. Through the modernization of both the processing industry and agriculture, it is feasible to significantly reduce the capital allocated for imports, namely the 12.9% import value of food and agricultural products.

During the compared period, the volume of vegetable exports decreased by 18.6%, amounting to 180,111.4 tons. An increase in export volume was observed in fresh fruits. The export volume of fresh fruits exported from the country increased by 32.2% compared to 2019, while export revenues grew by 34.2%, reaching 484,845.8 thousand US dollars.

When characterizing the role of import-export relations in food security, it can be concluded that there are sharp differences between the prices of imported products and the final consumer prices of these products in the country. More precisely, the volume of consumer prices is quite high. This can also be observed in the dynamics of import-export prices and final consumer prices.

Chapter III of the dissertation, entitled **“Directions for Improving the Institutional Mechanism for Organizing Sustainable Food Supply”**, examines the development priorities of a competitive food complex in the context of globalization, the directions for forming agrarian market infrastructures, and ways to improve cooperation-integration relations between agriculture and the processing industry supply and supply structures.

The impact of increasing the competitiveness of agricultural food and food products on food supply in the context of globalization can be classified as follows:

1. Political impacts of competitive food and food production on food supply in the context of globalization.

2. Economic impacts of increasing the production of competitive food and food products on food supply.

3. Social impacts of increasing the production of competitive food and food products on food supply.

From a social perspective, the impact of competitive product production on food supply is primarily effective when the purchasing power of the population is high. Thus, the middle and high purchasing power strata of the population are oriented towards obtaining quality food products.

From an economic perspective, this leads to an increase in the income of producers and, when price accessibility is ensured, to the provision of quality food products to all segments of the population, thereby ensuring greater income for food and food industry producers.

The production of competitive products by the agro-food complex is based on the integration of a number of factors. In this regard, the factors determining the competitiveness of agro-food complex enterprises are reflected in the following chart 2.

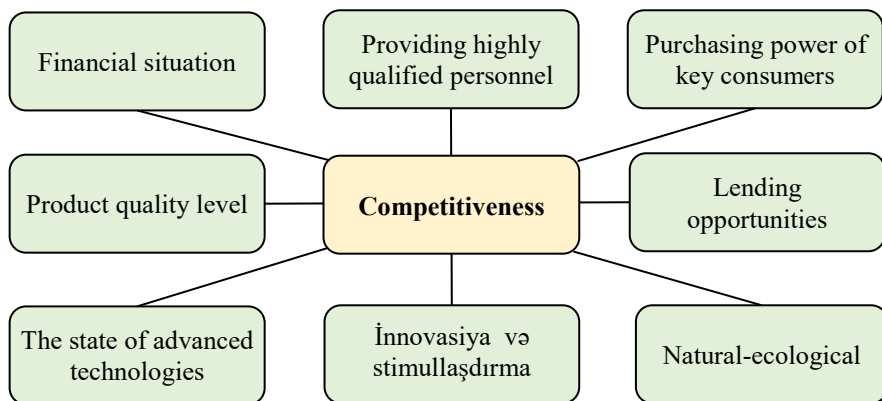


Chart 2. Factors determining competitiveness in the agri-food complex.

Source: scheme compiled by the author.

As can be seen from the scheme, the production of competitive products by enterprises included in the agro-food complex primarily

depends directly on the financial condition of the enterprise. In addition, the application of advanced technologies is also considered one of the important factors determining the production of competitive products. The provision of the enterprise with qualified personnel, as well as the purchasing power of the population and crediting conditions are also considered factors determining competitiveness.

From the conducted research, it can be concluded that it is possible to determine the following priorities for increasing the competitiveness of food products in the conditions of globalization:

- continuous modernization of the agro-food complex. Improving the quality of products produced in the agro-food complex;
- ensuring the accessibility of prices in the agro-food market by optimizing the costs incurred for products produced in the agro-food complex;
- expanding the access to economic resources of all enterprises, regardless of the ownership relations that provide security in the agro-food complex;
- increasing the level of accessibility to economic resources of enterprises operating in the agro-food complex. Expanding the logistics capabilities of food products produced in the agro-food complex in food markets. Increasing labor productivity by increasing the innovation orientation of the food industry;
- expanding the directions of organizing advertising and promoting the export of competitive products in world markets.

Currently, the state is implementing targeted measures to develop the infrastructure for storing and marketing agricultural products. More than 50 cold storage complexes have been built and put into operation in all economic regions of the country thanks to preferential loans provided by the Entrepreneurship Development Fund. The total storage capacity of these facilities is approximately 260 thousand tons, and an average of 2-3 such cold storage complexes operate in each economic region.

Existing cold storage facilities contribute to increasing employment in rural areas, as well as playing an important role in meeting the population's demand for fruit and vegetable products. As a result of

the measures implemented, the country's population's demand in this area is currently met mainly through local production. This is considered a significant advance in terms of food security.

Taking into account the above, it is considered appropriate to implement the following measures to expand state support for cold storage facilities:

- application of preferential tariffs for electricity;
- reduction of the tax burden or establishment of a special tax regime;
- making storage services more accessible through the application of state subsidy mechanisms.

Such measures will not only ensure the efficient operation of the infrastructure, but will also create conditions for reducing losses of agricultural products, stabilizing the domestic market and strengthening export potential.¹⁵

Current experiences show that processing enterprises equipped with modern technologies, such as the “Atena” milk processing enterprise operating in Agjabadi, “Azgranata” LLC located in Agsu, the fruit canning plant belonging to “Azersun Holding” operating in Gazakh, and “Agroservis” LLC in Agstafa, act as successful examples in this field. Each of the mentioned complexes, having high productivity and quality indicators, serves both to meet domestic demand and to expand export potential.

The impact of the development of agrarian market infrastructures on the food supply of the population is reflected in chart 3:

¹⁵ Gurbanzadeh, A.A. World experience in the field of forming a sustainable food supply // Materials of the international scientific and practical conference on the topic “Next Generation Economics: Challenges and Perspectives”. – Baku, 2024. – pp. 405-411

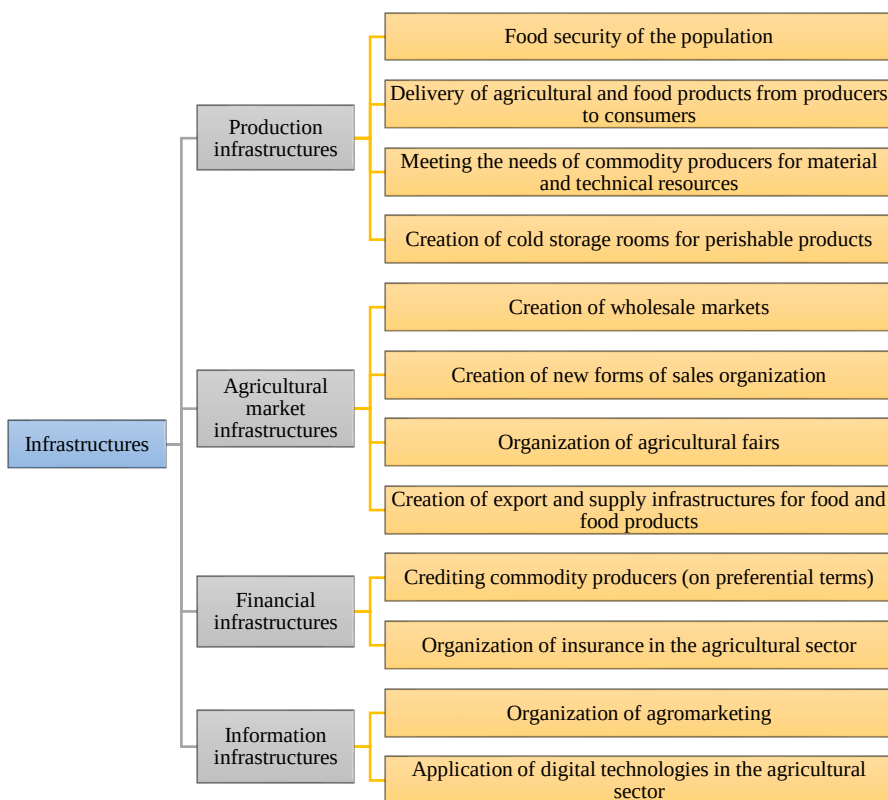


Chart 3. The impact of infrastructure systems and agrarian market infrastructures on the food supply of the population

Source: scheme compiled by the author.

As can be seen from the scheme, agrarian market infrastructures play an important role in improving the food supply of the population, as well as in ensuring physical, economic and social accessibility to food products. In our opinion, the application of advanced technologies in the formation of agrarian market infrastructures and the attraction of foreign investments in this area can essentially create favorable conditions for increasing the export of food products, as well as play an important role in ensuring abundance and price accessibility in the domestic market.

The following can be attributed to the priority directions of the formation of agrarian market infrastructures in terms of improving food supply:

- organization of storage chambers and wholesale markets that can operate in a free competitive environment in the regions in accordance with the specialization directions of the regions;

- in order to ensure the accessibility of prices in storage chambers, which constitute an important component of agrarian market infrastructures, in particular, subsidizing a significant part of the electricity costs of these institutions from the state budget;

- paying special attention to the creation of wholesale markets, which constitute an important component of agrarian market infrastructures. Wholesale markets play an important role in delivering agricultural and food products to retail chains. However, unfortunately, monopolistic tendencies still persist in this area. For example, in the “Meyveli” wholesale markets located in Baku, monopolistic tendencies are evident, which leads to more intermediaries earning income from this process.

The wide opportunities of agricultural cooperatives ultimately lead to an increase in labor productivity in agriculture in those countries, and at the same time provide ample opportunities for the process of modernization of production in agricultural cooperatives. The example of Finland is especially noteworthy in this regard. Thus, in Finland, almost 100% of the agricultural sector operates through cooperatives, and this structural form has become the main driving force in ensuring stable and sustainable development in the country's agricultural sector. In Finland, agricultural cooperatives operate with a high level of organization and professionalism, covering all stages of the agricultural sector - production, processing, supply and sale, and are considered to have reached the peak of development in this area.¹⁶

¹⁶ Belkin, R.E., Gazdiev, A.R., Veklenko, E.V., & Besedin, N.V. (2012). Improving the forms and methods of state regulation of agricultural production. Bulletin of the Kursk State Agricultural Academy, 5, Article n/a. Retrieved January 4, 2015, from <http://cyberleninka.ru/article/n/sovershenstvovanie-form-i-metodov-gosudarstvennogo-regulirovaniya-selskohozyaystvennogo-proizvodstva>

The experience of Western countries shows that the formation of cooperative relations in agriculture is aimed not only at supporting the joint activities of agricultural producers, but also at pursuing very strategic goals. Thus, the goals of cooperatives in agriculture in Western countries can be classified as follows:

- ensuring effective protection of the interests of farms included in cooperative relations;
- increasing the income of agricultural cooperatives;
- meeting the material needs of members of agricultural cooperatives;
- achieving sustainable development of the agricultural sector.¹⁷

The lack of widespread application in the country of cooperative-based production models, contract farming practices, producer unions and associations, which have yielded effective results in international practice, is among the main factors hindering the sustainable development of agro-industrial integration.¹⁸ The inclusion of farms in cooperative relations may require them to operate as economic entities with a certain share, and in this regard, the normative rules for the process of voluntary withdrawal of any agricultural commodity producers from this union, that is, their departure from cooperatives, should also be implemented. In our opinion, the improvement of cooperation and integration relations between agricultural commodity producers and processing industry service and supply enterprises, taking into account global challenges, should be brought to the fore. In our opinion, the following can be attributed to the priority areas of improvement:

- formation of economic mechanisms for the development of cooperative relations in agriculture. These mechanisms should primarily serve to preserve the economic independence of agricultural commodity producers entering into cooperative relations and to form

¹⁷ Martynushkin, A.B. Agricultural Economics: Results of Accession to the WTO. // In Research and Development: Proceedings of the X International Scientific and Practical Conference, 2014. – pp. 33–36.

¹⁸ Strategic Roadmap for the National Economic Perspective of the Republic of Azerbaijan // Decree of the President of the Republic of Azerbaijan dated December 6, 2016, No. 1138. – Baku, 2016.

their economic freedoms, being of a stimulating nature;

- taking into account the reluctance of commercial insurance companies to participate in the insurance of small commodity producers, the application of modern trends in the system of insurance of large and medium-sized commodity agricultural cooperatives created on the basis of the development of cooperative relations in agriculture, the creation of private associations of commercial entities with state and foreign partners in the insurance of cooperatives, and the strengthening of the impact of this process on reducing risks in agriculture;

- taking into account ideas on the application of the experience of Australia and New Zealand in the formation of agricultural product sales cooperatives and the formation of these cooperatives in order to improve the process of selling agricultural products and, in this regard, meet the demand for food products;

- paying special attention to modern trends in food supply, including the creation of livestock production cooperatives in order to prevent price increases in the livestock products sector of the food market;

- taking into account the interests of agricultural producers in the formation of cooperation and integration relations between agricultural producers and service structures and preventing them from facing economic pressures;

- in the process of creating a new format of cooperation and integration relations between agriculture and processing enterprises, paying special attention to increasing the number of processing enterprises in the regions, as well as paying attention to the creation of processing workshops under agricultural product cooperatives and supporting this process through the entrepreneurship development fund.

Chapter IV of the scientific work entitled **“Directions for Improving the Economic Mechanism of Sustainable Food Supply in the Republic of Azerbaijan”** analyzes the role of the application of guaranteed and intervention prices in improving the food supply of the country's population, the position of the transition to a targeted subsidy system in sustainable food supply, the problems of insurance of

agricultural production and risk management in the food market.

In our opinion, the impact of changes in the level of prices in the food market on food supply is directly related to the dependence between the price indices in the market and the level of the average monthly wage and pension. In this regard, the dependence between the price indices in the food market for agricultural and food products and the level of the average wage and average pensions in the economy is reflected in the following diagram 2.

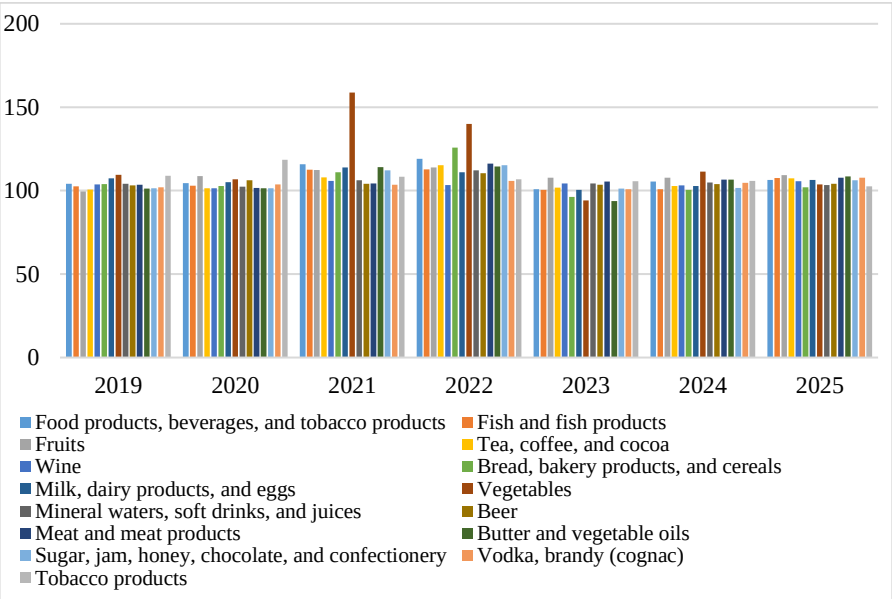


Diagram 2. The interaction between price indices in the food market and the average wage and pensions in the economy

Source: State Statistical Committee of the Republic of Azerbaijan. Prices in Azerbaijan 2026. Compiled by the author based on data from the statistical yearbook.

The structure of expenditures for supporting agriculture in the countries of the European Union is examined. It is noted that approximately 1/3 of the expenditures for supporting agriculture in the countries of the European Union reflect direct support measures. The experience of the countries of the European Union shows that

since the 70s-80s of the last century, the processes of increasing industrialization in the economies of these countries have significantly penetrated the agricultural economy. Thus, the level of intensification in the production of agricultural products in Western European countries is quite high. One of the most important aspects characterizing this process is that, while measures aimed at increasing the level of mechanization of agriculture were implemented in these countries towards the 70s-80s of the 20th century, since the beginning of the 21st century, the agricultural sector in Western European countries has been fully mechanized, enriched with computers and complex electrical equipment. Biotechnologies play a significant role in the agriculture of the countries of the European Union. Until the 2nd green revolution, the process of chemicalization of production was quite widespread and developed at a high speed in these countries.

Subsidies provided to agricultural producers from the state budget in the Republic of Azerbaijan mainly reflect sowing subsidies in the field of crop production, subsidies for main crops, subsidies for seeds, subsidies for the establishment of new orchards, subsidies for replanting, as well as subsidies provided in the field of livestock breeding. The dynamics of subsidies in the field of crop production is reflected in table 3:

Table 3.

**Actual subsidies provided in the field of crop production
(in thousand manats)**

	2020	2021	2022	2023	2024
Cultivation subsidy	233235	258557	246558	262492	266000
Product subsidy	30264	29011	59585	59000	68000
Food wheat	-	-	-	12537	16000
Seed subsidy	4766	6658	7433	6002	8400
Fertilizer subsidy	69970	77567	73967	78748	79800
Total	338235	371793	387543	418779	438200

Source: Ministry of Agriculture of the Republic of Azerbaijan, Statistical data on subsidies in the field of crop and livestock farming, 2024.

As can be seen from the table, the volume of subsidies provided to the crop sector of agriculture in our republic in 2024 amounted to 438,200 thousand manats. Compared to 2020, the volume of subsidies provided to the crop sector in 2024 increased by 29.6%. Of the total subsidies paid in the crop sector in 2024, 60.7% were sowing subsidies, 15.5% were crop subsidies, 3.7% were subsidies for grain wheat, 1.9% were seed subsidies, and 18.2% were fertilizer subsidies.

The constituent elements of the crop subsidy in the Republic of Azerbaijan are reflected in table 4:

Table 4.

**Composition of crop subsidies in the Republic of Azerbaijan
(actual)**

	2020	2021	2022	2023	2024
Main crops, thousand ha	233235	247412	236615	252284	262461
Share, %	100	96	96	96	96
Repeated crops, thousand ha	-	3435	3563	5487	5314
Share, %	-	1,3	1,5	2,1	1,9
Horticulture (new), thousand ha	-	7710	6380	4721	6225
Share, %	-	2,7	2,5	1,9	2,1
Total	233235	258557	246558	262492	274000

Source: Ministry of Agriculture of the Republic of Azerbaijan, Statistical data on subsidies in the field of crop and livestock farming, 2024.

As can be seen from the table, the volume of sowing subsidies provided to agricultural producers in 2024 amounted to a total of 274,000 thousand manats of sowing subsidies for fuel and lubricants, of which 262,461 thousand manats or 96% were for main crops, 5,314 thousand manats or 1.9% were for repeated crops, and 6,225 thousand manats or 2.1% were for new horticulture, i.e. intensive horticulture. The analysis shows that the share of subsidies provided to main crops in the structure of total sowing subsidies in 2020-2024 did not change, i.e. remained at 96%. It should also be taken into account that in 2020,

subsidies were provided only to main crops.

Improving the provision of the population with livestock products is currently one of the most important tasks facing the state. This is due to the fact that recently there has been an increase in the prices of livestock products in the food market. In this regard, subsidizing livestock producers is also in the spotlight. Table 5 reflects the dynamics of subsidies in the livestock sector:

Table 5.

**Actual subsidies provided in the livestock sector
(in thousand manats)**

	2020	2021	2022	2023
Livestock subsidy	8799	9067	9690	10300
Beekeeping subsidy	5018	5313	5821	-
Sericulture (silkworm)	2172	2405	1989	2051
Total	15989	16712	17500	12351

Source: Ministry of Agriculture of the Republic of Azerbaijan, Statistical data on subsidies in the field of crop and livestock farming, 2024.

As can be seen from the table, the total amount of subsidies paid in the livestock sector in 2023 amounted to 12,351 thousand manat. Of these subsidies, 10,300 thousand manat or 83.4% were subsidies for animals, including large and small-horned cattle and poultry, and 2,051 thousand manat or 16.6% were subsidies for cocoon farming. In 2020-2022, subsidies of 5,018 thousand manat, 5,313 thousand and 5,821 thousand manat, respectively, were provided to beekeeping. No subsidies were provided to beekeeping in 2023. The analysis shows that there was no change in the amount of subsidies in livestock, namely large and small-horned cattle. In our opinion, the prices for feed for livestock production have increased significantly, which ultimately has a positive effect on stabilizing the level of prices for livestock products in the food market, so subsidies can be reconsidered.

It is no coincidence that today 92% of the main burden in the production of agricultural products falls on small farms - family and

rural households and individual entrepreneurs. Only 8% of the share belongs to agricultural enterprises with relatively large land areas. Experience shows that the main interest in insurance services is shown by large farms, since their need for protection from risks and financial capabilities create the conditions for taking this step.

On the contrary, small farms are not inclined to traditional insurance products. One of the main reasons for this is that they believe that scale is not formed efficiently in products produced on a small area of land, and therefore insurance does not have a serious impact on their overall productivity. In addition, due to limited financial resources, insurance premiums are often inaccessible to these farms.¹⁹

On the other hand, it is considered inefficient for insurance companies to insure small areas – for example, 2-3 hectares of land – using traditional methods. This leads to low interest in the insurance market due to both high administrative costs and low profitability. Risks in agriculture are quite specific. The emergence of risks in agriculture is primarily related to natural climatic conditions, and this is most evident in crop production.

Failure to effectively manage and insure risks ultimately leads to a decrease in the level of productivity in agriculture and the bankruptcy of business entities. The crop production sector of agriculture is more exposed to the risk factor, and this is related to weather conditions, and factors such as changes in natural climatic conditions, an increase in the number of rainy days, an increase in the number of sunny days, and sharp warming lead to a decrease in the level of productivity in crop production.²⁰ The classification of risks in agriculture and the food industry is reflected in chart 4:

¹⁹ Jafarov, I.H. Theoretical aspects of index insurance in agriculture and directions of its application in Azerbaijan. // – Baku: “Economy of Agriculture”, 2021, 2 (36). – pp. 21–36.

²⁰ Vasin, S.M. (2010). Risk management at the enterprise: A tutorial. / S.M.Vasin, V.S.Shutov - Moscow: KNORUS, - 2010, - 304 p., p. 29

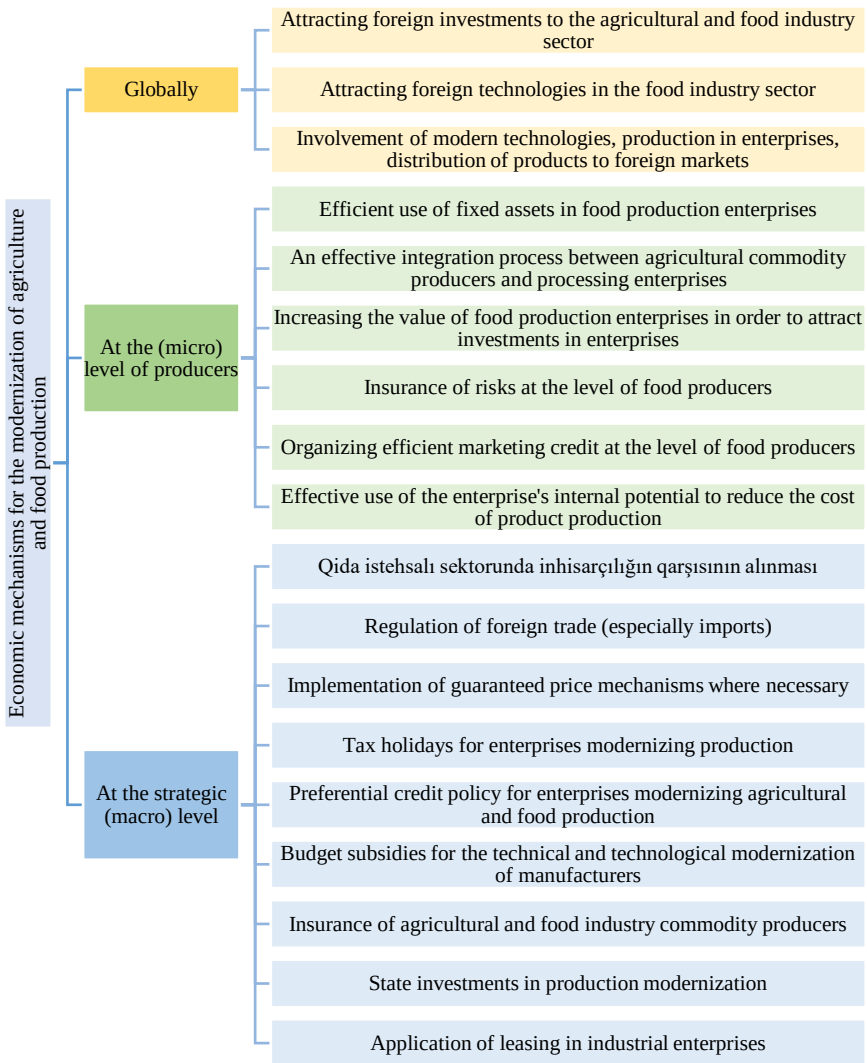


Chart 4. Classification of risks in agriculture and the food industry

Source: Scheme compiled by the author.

As can be seen from the chart, there are quite a lot of risks in the context of globalization in agriculture and the food industry. The exchange rate and financial aspects of these risks, as well as issues

related to the volume of budget subsidies, are classified as economic risks.

In the improvement of the agricultural insurance system, attracting foreign investors to this area is of great importance. This is primarily due to the fact that it is not possible to insure the existing arable land and animals in agriculture at the expense of agricultural commodity producers. Local insurance companies are not inclined to insure this area due to the large number of risks, as well as the unfavorable natural conditions in agriculture and the constant presence of this process, especially in mountainous regions. For this, first of all, the business and investment attractiveness of the area should be increased. All this can also increase the incentive of foreign investors to the agricultural sector, and at the same time, the regulatory and stimulating functions of the state should be increased. All this can play a significant role in improving the country's food supply.

Chapter V of the dissertation, entitled **“Neutralization of conjuncture fluctuations in the food market of Azerbaijan and priorities for the formation of sustainable food supply”**, researches the directions of stabilizing the food market and meeting unfavorable manifestations of foreign competition, the priorities of ensuring food security, and the directions of stimulating purchasing power demand. One of the most important sensitive areas of the national economy and market is considered to be agriculture and the food market, respectively.

The process of stabilizing the food market primarily affects the food supply of the population. The emergence of an unstable situation in the food market leads to harmful manifestations in the provision of food products to the population. Therefore, in order to stabilize the food market, special attention should be paid to the implementation of measures aimed at classifying harmful manifestations existing in the food market. In this regard, it can be considered appropriate to show the classification of factors affecting the formation of the level of self-sufficiency in food products as in Table 6.

Table 6.

Classification of factors influencing the formation of the level of self-sufficiency in food products in the food market

Factors affecting the level of stability in the food market	Factor
Factors existing in the production sphere	- Location and specialization of agricultural production, - Production volume of agricultural and food products, - Commissioning of new production capacities, obsolescence of existing production capacities, - Development of interregional relations in terms of provision of agricultural raw materials, development of cooperative relations in agriculture, integration relations between producers of agricultural raw materials and processing enterprises, - Natural-climatic, technical-technological factors, etc., - Development of sectors providing services to production
Factors affecting the sphere of division and exchange	- The level of development of food market infrastructure, - The actual and potential capacity of the food market, - The development of interregional relations related to the transportation of agricultural products, - The development of wholesale markets, - Adaptation of logistics services to modern requirements, - The compatibility of foreign trade conditions in foreign trade activities by country, - The application of information and communication technologies in the food market and in agricultural and processing enterprises that constitute the material basis of the food market, - The impact of the development of the green economy on the stabilization of the food market
Factors affecting the consumption sphere	- Employment level of the population, - Consumption level of agricultural and food products, - Monetary income of the population, changes in price levels, demographic factors, inflation, etc.

Source: Table prepared by the author.

Against the background of the deepening globalization process, food security is now considered one of the most important problems in the world, and various indicators are used to assess the level of food security. At this time, researchers mainly apply indicators characterizing the level of accessibility and consumption of food products, the availability and sufficiency of food for the population, its quality and safety level, the degree of exposure of the country to the impact of changing climate, the risks, sensitivity of each country's national economy and its ability to adapt to natural resources. It is on the basis of all this that the global food security index is determined. It should be noted that ensuring food security has become a fairly serious challenge for developing countries. Membership in the WTO leads this process to a more dangerous goal. The WTO and the member countries of this organization put forward proposals such as reducing state support for agricultural producers. In this regard, it should be especially noted that as a result of the political will of the President of the country, Mr. Ilham Aliyev, the process of our country's accession to the WTO has been slowed down for the time being. This process guarantees the achievement of sufficiently high indicators in terms of agricultural development. International experience shows that in a number of countries the amount of state support for agricultural producers is quite high, and as a result, these countries not only provide their own population with food products, but also export food products to the world market. For example: in Switzerland, the amount of state subsidy per hectare is \$14.5 thousand, in Japan \$12.9 thousand, in the European Union countries \$0.9 thousand, in the USA \$0.1 thousand, and in Russia \$0.04 thousand.²¹

In our opinion, ensuring food security in the context of globalization should primarily encompass aspects at the social, political, and economic levels, which is reflected in chart 5 below.

²¹ Krapchina, L.N., Kotova, L.G. Food security in the context of globalization: ways to maintain and improve it. // Food policy and security, 2014. 1(1), – p. 53–66.

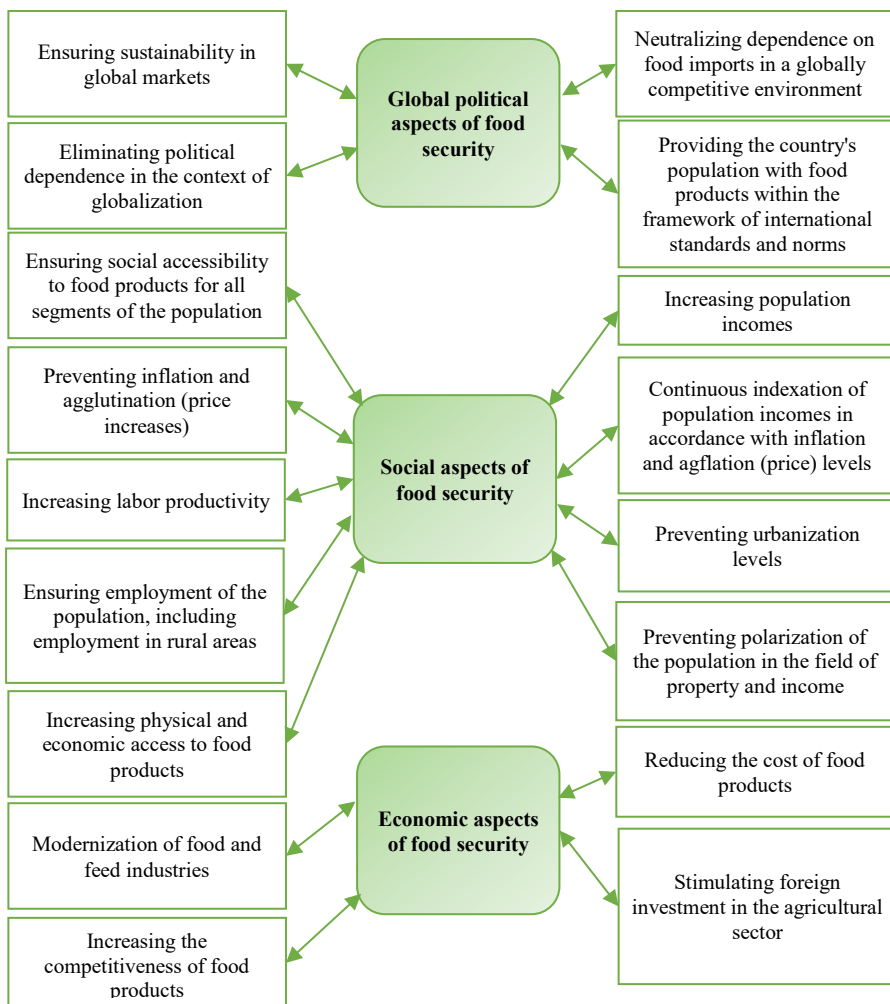


Chart 5. Political, economic and social levels of ensuring food security

Source: Scheme compiled by the author.

As can be seen from the chart, the global political aspects of food security have increased even more recently. All this actually shows that food security has classic features. Thus, in connection with the deepening of the globalization process, ensuring stability in global markets, eliminating political dependence in the conditions of

globalization, neutralizing risks in the food sector in the presence of global competition, and providing the country's population with food products at a stable and normal level of demand allow for the stability of food supply.

A change in the level of prices in the consumer market essentially leads to real incomes acquiring a smaller mass of goods. In this regard, nominal incomes almost lose their importance in a market economy. In conditions of inflation, nominal incomes are significantly inflated, which leads to a decrease in the purchasing power of the population. The purchasing power of the population is able to affect economic development in the country as a whole. In other words, there is a direct relationship between the purchasing power of the population and economic growth. The relationship between the purchasing power of the population and economic growth is reflected in the following chart 6.

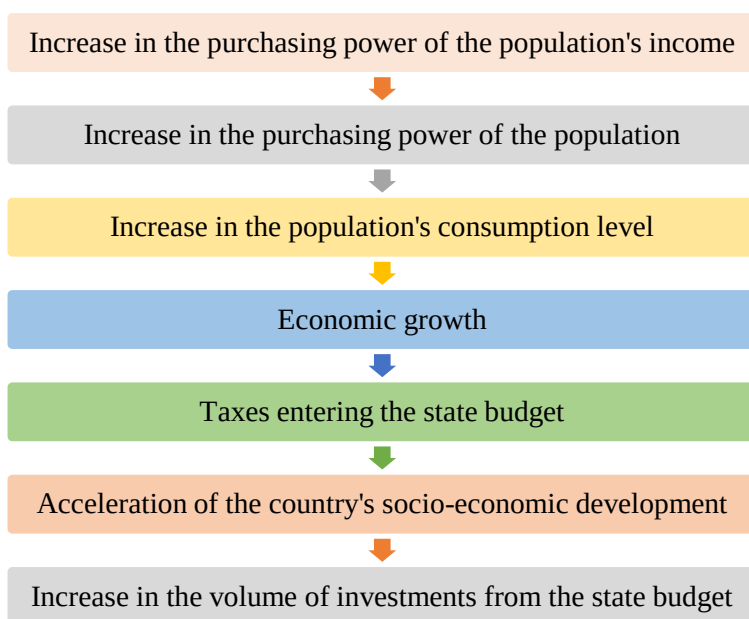


Chart 6. The relationship between the purchasing power of the population's income and economic growth

Source: Chart compiled by the author.

As can be seen from the chart, the increase in the purchasing power of the population's monetary income essentially leads to an increase in the purchasing power demand of the population. This leads to an increase in the level of consumption, an increase in the level of economic growth, an increase in tax revenues to the state budget, an acceleration of socio-economic development, an increase in the volume of investments from the state budget, which essentially conditions the expansion of commodity circulation and leads to the acceleration of development in the sectors and territorial sectors of the country's economy. When approaching the problem from this position, one can also note the direct proportionality between the decrease in the purchasing power demand of the population and the weakening of economic development. The interaction between the decrease in the purchasing power of the population and the slowdown in the level of economic development is reflected in chart 7.

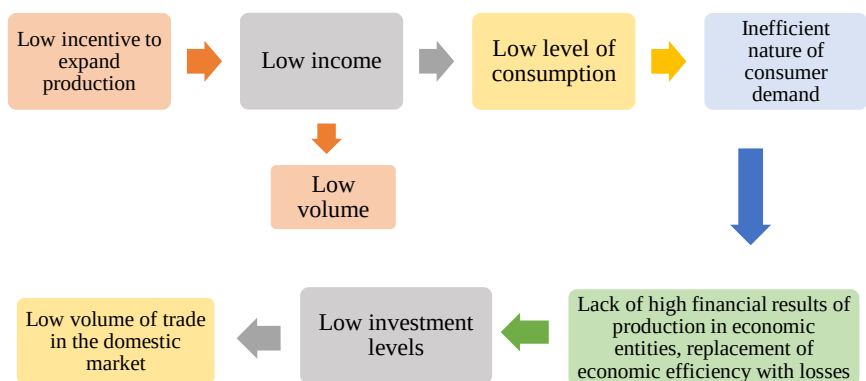


Chart 7. The relationship between purchasing power and the level of economic development

Source: Chart compiled by the author.

The standard of living of the population, in other words, the quality of life of the population, has been published since 1990 under the name of the UN Human Development Index, which is an index of the existing indicators of various countries. At this time, the standard of living of the population, which is assessed through national income in 191 countries,

in other words, the level of national income per capita at purchasing power parity, as well as indicators such as life expectancy, education and enlightenment of people, are evaluated as parameters characterizing the quality of life in the UN Human Development Index. In this regard, the human development index for the top 20 countries with the highest standard of living in the indicated countries is reflected in the following diagram 3.

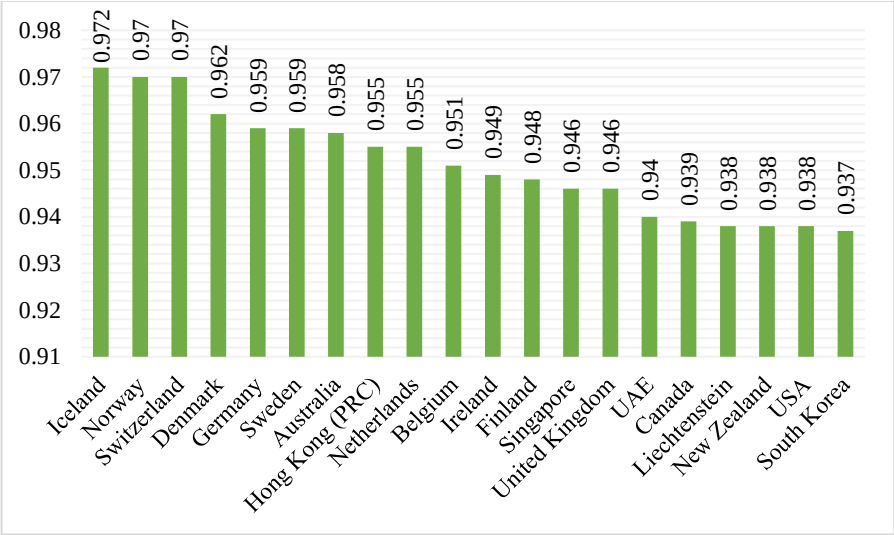


Diagram 3. Highest living standards among 20 countries on the UN Human Development Index

Source: *United Nations Development Programme (UNDP). Global Human Development Report, Human Development Index Database.*
<https://hdr.undp.org/content/human-development-report-2023-24>

As can be seen from the diagram, the majority of the countries ranking at the top of the UN Human Development Index—including Iceland, Norway, Denmark, and Sweden—represent Northern Europe (Scandinavia), while Switzerland and Germany represent Western Europe. Although the USA managed to enter the top 20 (ranking 17th), among Asian countries and regions, the living standard indices of the population in Hong Kong, Singapore, and South Korea surpass that of

the USA. European Union member states occupy an important place among countries with a high standard of living. Conversely, African countries predominate among the states with the lowest quality standard of living according to the UN Human Development Index. In this regard, the classification of the 20 countries with the lowest living standards according to the UN Human Development Index is reflected in diagram 4.

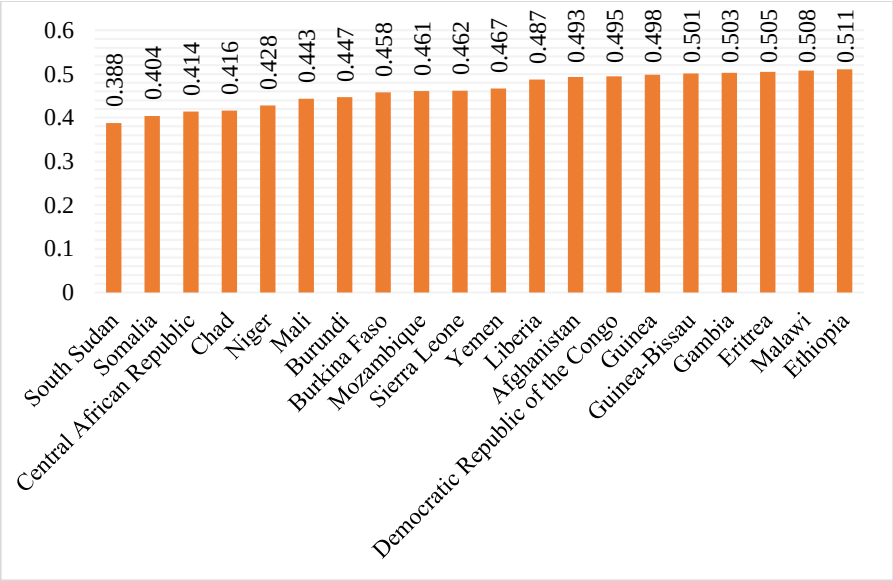


Diagram 4. The 20 countries with the lowest standard of living according to the UN Human Development Index.
Source: United Nations Development Programme (UNDP). Global Human Development Report, Human Development Index Database.
<https://hdr.undp.org/content/human-development-report-2023-24>

As can be seen from the diagram, the top ten countries facing the most dire situation among the 20 countries with the lowest standard of living are South Sudan, Somalia, Central African Republic, Chad, Niger, Mali, Burundi, Burkina Faso, Mozambique, and Sierra Leone. Out of the 20 countries in the ranking, 18 are located on the African continent, with the only exceptions being Asian countries experiencing

acute humanitarian and military crises–Yemen and Afghanistan. In all these aforementioned countries, indicator levels regarding education (literacy rate and duration of schooling), life expectancy at birth, and gross national income per capita are almost at the lowest ranks globally.

The following recommendations and suggestions of a scientific and practical nature are given in the conclusion section of the dissertation.

1. Since the end of the 20th century and the beginning of the 21st century, the impact of the globalization process on national economies has intensified. This impact has not only strengthened the mutual relations between the economies of countries, but also brought about the deepening of economic dependence and economic equality. The deepening of the globalization process has also led to the withdrawal of traditional sectors from the economic and social scene. All this has led to the emergence of crisis moments, especially in the traditional sectors of the economy of developing countries.

2. The impact of globalization processes on the national economy is manifested, especially against the background of the impact on markets. Sensitive sectors of the national economy and the national market are not able to respond sustainably and appropriately to globalization processes. All this is most evident in the food market segment of the national market. The harmful trends caused by the globalization process cause constant price fluctuations in the food market, which leads to problems in the field of food supply of the population. In the conditions of globalization, the sustainable nature of food supply, ensuring the country's food security and preserving food independence also make it urgent to solve problems such as

3. Globalization processes have had a significant impact on the food supply of the world's population, incomes of the population and the volume of consumption. Thus, while in the 90s of the last century, the low level of socio-economic inequality was observed more often in Northern Europe, Germany and Australia, and the high level was observed in the countries of Africa, South America and Southeast Asia, in 2021 the high level of income inequality has increased even more

in Malaysia, Brazil, India, and even some Northern European countries. Another trend in the globalizing world is the increase in the area of land suitable for agriculture, which is directed to the production of environmentally friendly products. Thus, this increase in 2023 compared to 2013 is 3 times.

4. Achieving sustainable food supply reflects the solution of quite complex and numerous problems. The formation of sustainable food supply reflects not only the increase in the production of food products, but also the meeting of the logistical needs of these products, the increase in the purchasing power of the population's incomes in connection with the acquisition of food products. Therefore, the achievement of sustainable food supply has risen to a level that can threaten the economic security of the country in a global competitive environment. It is no coincidence that, within the framework of the COVID-19 pandemic, we have witnessed the emergence of acute problems in food supply in a number of countries around the world - in various geographies such as Africa, Southeast Asia and Latin America. It is true that the emergence of these problems depends on the historical and geographical characteristics of the countries, the slowdown in economic development and other such factors, but the failure of logistics processes to meet modern requirements, the implementation of the "Stay at Home" campaign in terms of preventing the harmful effects of the pandemic, has led to the manifestation of these problems in an integrated form.

5. Since the early 2000s, significant steps have been taken in Azerbaijan to ensure food security, and in this regard, stimulating measures have been implemented for agricultural producers. Within the framework of these measures, a number of tax breaks have been applied for these producers. Thus, with the exception of land tax, agricultural producers have been exempted from other types of taxes. This approach is aimed at reducing the tax burden of entities operating in the agricultural sector and increasing their economic sustainability.

6. The role of the processing industry in food security is related to meeting the population's demand for food products. Increasing the competitiveness of the food industry is closely related to improving the quality of the produced product and ensuring price accessibility.

Despite the establishment of numerous food production enterprises in our country in recent years, dependence on import channels in this area still persists. At the same time, the slow establishment of numerous processing enterprises operating on the basis of free competition in the regions also limits the sales markets for agricultural products. The deepening of these trends also causes a decrease in the export volume of non-oil products.

7. The formation of sustainable food supply depends significantly on the solution of economic problems of commodity producers, as well as economic entities operating in various sectors and territorial segments of the economy. The economic financial activity and economic indicators of commodity producers in agriculture are significantly lower than in other sectors. The objective reasons for this situation are, first of all, the low profitability of the sector and the lower prices of manufactured products compared to other sectors. In such conditions, agriculture is subject to price imbalances compared to other sectors. Price uncertainty acts as a threat to the preservation of economic balance in both microeconomic and macroeconomics.

8. The dependence of agricultural commodity producers on natural climatic conditions, as well as the increase in the level of other economic risks, ultimately reduces the attractiveness of this sector. It is no coincidence that agriculture is weak in terms of investment and business attractiveness compared to other sectors of the economy. All this leads to problems with attracting foreign investment to agriculture. If foreign investment in agriculture were stimulated, this could create favorable conditions for both increasing the volume of product production and improving competitiveness. This could lead to an increase in the specific weight of food products in the structure of exports and the end of food imports in the structure of imports.

9. The creation of food security, as well as the expansion of non-oil exports, including the formation of an alternative export sector, directly depends on increasing the competitiveness of the food complex. In order to increase the competitiveness of the agro-food complex, it may be considered appropriate to implement the following measures:

- bringing the quality of agro-food products produced in the country

into line with international standards;

- ensuring the affordability of agro-food products;
- modernizing the agro-food complex;
- achieving an increase in the volume of foreign investments in the sector against the background of increasing the investment attractiveness of the agro-food complex;
- re-establishing cooperation and integration relations between agricultural producers and processing industrial enterprises on a parity basis in order to expand the sales markets for agro-food products.

10. Improving the food supply of the population directly depends on the development of agro-market infrastructure in terms of ensuring the physical, economic and social accessibility of food products. The assessment of the current realities of agrarian market infrastructures in terms of improving the food supply of the population gives rise to the following conclusions:

- development of agrarian market infrastructure in terms of the specific characteristics of the regions and specialization of production;
- improvement of the possibilities of delivering food products to consumers in terms of achieving sustainable development of logistics infrastructures;
- producers of fruit and vegetable products in the regions often face problems due to the inadequacy of existing technologies in refrigeration chambers and the unavailability of prices. It would be good to achieve the elimination of monopoly in this area, and at the same time, to subsidize tariff prices in refrigeration and storage chambers in certain proportions.

11. Improving food security also directly depends on the formation of reliable and sustainable integration relations between agricultural commodity producers, processing, supply and supply structures. In terms of improving food security, analyzing the issues of processing, supply and supply in the agro-food complex, the following conclusions can be drawn:

- eliminating the economic institutional dominance of processing enterprises, supply and service providers over commodity producers;
- for this purpose, increasing the number of both processing and supply and service institutions, especially in the regions;

- expanding the possibilities of applying digital technologies in the agro-food complex.

12. One of the most important factors characterizing the increase in price levels in the livestock products segment is that farmers operating in this field direct animals to the market without waiting for the optimal period. Animals are put on sale when they are 5-6 months old and their weight has increased by 7-8 kilograms. This trend, in turn, prevents the birth and growth of animals in the following years. In addition, the fact that consumers prefer small-horned animal products is also a threat. True, one of the objective reasons for this process is that farmers need more feed to keep large-horned cattle, and when they cannot meet this demand, they send these animals to slaughter or put them on the market. This trend plays the role of an indicator for price increases in the food market. There is a need to implement measures aimed at protecting the domestic market in the field of food supply, protecting the food market from unfavorable manifestations of foreign competition. In this regard, it would be appropriate to improve customs mechanisms and compensate them with incentives for local producers in order to protect the food market more.

13. It is believed that in the field of improving food supply, more emphasis should be placed on the principle of comparative advantages. This is due to the fact that the cultivation of a number of products, the process of redirecting more land area, and increasing the area should be stopped due to increasing productivity. In such conditions, it is possible to produce both export-oriented food products and to realize production with a more productive level in our country.

14. Due to the small size of the territory and land area of our country, certain problems arise in establishing the production of ecologically clean agricultural products. However, in this regard, it can be considered that the political will of Mr. President and the valor of the Azerbaijani army, as a result of the cleansing of the occupied territories from Armenian invaders for nearly 30 years, can ultimately create favorable conditions for further growth of economic potential. By activating the water resources of the IAEA, as well as biodiversity, it is possible to bring food security closer not only in the regions of the country, but also by implementing the process of effective

reintegration of these territories into the national economy, and also to increase the volume of food exports.

We believe that the implementation of the above-mentioned proposals can allow for the effective protection of food security from the harmful manifestations of the globalization process in the near future.

The main provisions of the dissertation are reflected in the following published articles and conference proceedings:

1. Gurbanzade, A.A. Issues of sustainable development of export potential in the system of international economic relations // Materials of the scientific-practical conference held on the topic “Cooperation: history and realities”. – Baku, 2008. – pp. 45-50.

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16. Gurbanzadeh, A.A. Functional purpose of the sustainable development of the agro-industrial complex // Scientific Works of the

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