



How to cite this paper: Panosyan I. (2025). The State of Food Self-Sufficiency in the Republic of Armenia and the Currently Implemented Agricultural State Support Programs. *Messenger of ASUE*, 3(81), 86-96. DOI: 10.52174/1829-0280_2025.3-86

Received: 30.11.2025. **Revision:** 07.12.2025. **Accepted:** 29.12.2025.

IRA PANOSYAN

Associate Professor of the Chair of Environment and Sustainable Development at the Armenian State University of Economics, PhD in Economics

 <https://orcid.org/0009-0003-4293-3650>

THE STATE OF FOOD SELF-SUFFICIENCY IN THE REPUBLIC OF ARMENIA AND THE CURRENTLY IMPLEMENTED AGRICULTURAL STATE SUPPORT PROGRAMS

Food security is an important component of economic security, as well as it is a fundamental human right and a global challenge. With a growing population, changing climate, and resource limitations, ensuring food security for all is more critical than ever. About one-third of the food produced globally for human consumption is lost or wasted each year. This represents a loss of natural resources consumed along the food supply chain, which can also have negative impacts on food security. The article analyzes the state of food security in the Republic of Armenia, the minimum consumer basket, and the poverty level. The agrarian policy in the sector is studied, and an econometric analysis of the production and consumption of poultry meat with a low self-sufficiency level is performed. Assessing the level of food self-sufficiency, the impact of existing support programs on self-sufficiency indicators is presented, and scientific and practical recommendations are made.

Keywords: *food security, policy, food safety, poverty, agricultural programs*

JEL:P25, Q11, Q18

DOI: 10.52174/1829-0280_2025.3-86

INTRODUCTION. Food security is a key component of economic security. Global climate change also makes food security more vulnerable. Besides, about one-third of the food produced globally for human consumption is lost or wasted each year. In 2023, the Food Security Strategy was approved in the Republic of Armenia, including about 50 measures, in which the implementation of measures to ensure food self-sufficiency is particularly important. The measures of the 2020-2030 Strategy for the Economic Development of Agriculture of the Republic of Armenia are also aimed at increasing the level of food self-sufficiency. The Government of the Republic of Armenia is implementing more than ten programs aimed at increasing the level of food self-sufficiency. Studies show that the role of the implemented programs in the production of food products and the management of natural and climatic risks is great. Effective management of natural and climatic risks due to global climate change is increasingly important in the context of ensuring the physical and economic accessibility of food products.

Taking into account the relevance of the topic, the article analyzes the programs implemented in the agricultural sector aimed at ensuring food self-sufficiency, conducts a comprehensive analysis, and presents scientific and practical recommendations.

LITERATURE REVIEW. Food security is a flexible concept as reflected by the many attempts to define it in research and policy usage. The concept of food security originated some 50 years ago, at a time of global food crises in the early 1970s (Peng, W., Berry, E.M., 2019).

In 1974, the term "Food Security" was first introduced by the FAO, which was defined as: "Maintaining the stability and availability of food products in markets for all countries of the world." (FAO, 2006):

The book 'Poverty and Famines' by Amartya Sen (1981) deeply contributed to enlarge the scope from food supply as well as to include food demand, highlighting the importance of food access: even if food is available, people are still in hunger if they are not entitled to access it because of low income, unemployment, lack of productive resources and, more generally, of rights (Sen 1981). On this basis, FAO (1983) defined food security as "ensuring that all people at all times have both physical and economic access to the basic food that they need", while the World Bank (1986) described it as "the access of all people at all times to enough food for an active, healthy life" (Donatella Saccone, Elena Vallino, 2025).

At the current stage of development, the perception of food security has expanded significantly. In 1996, the FAO defined food security in a new, expanded formulation: "Food security is a complex of legal, organizational, logistical and other measures aimed at providing a sufficient amount of food of the necessary quality and sufficient quantity, safe for health, acceptable in terms of the socio-cultural and historical characteristics of society, which is accessible

to every member of society and can be consumed by him at any time and in any situation (including during emergencies and martial law) for a healthy and prosperous life” (Food Security Strategy, 2023).

Food security is a stated objective of agricultural commodity policy in virtually all countries. Whether rich or poor, importing or exporting countries’ governments seem to state food security of their population as an objective for agricultural policy. The range of internal and border policies rationalized by food security objectives is equally impressive (Daniel Sumner, 2000).

For the first time at a global level, food production faces multiple limiting factors for key resources such as land, water, energy, and inputs. We must use this challenge to stimulate creative innovation (Daniele Giovannucci et al, 2012).

Among Armenian economists, the topic of food security has been addressed in the works by Samvel Avetisyan in “Urgent Problems of Food Security of the Republic of Armenia” and in other publications, as well as Tatevik Vardanyan, Suren Minasyan, and others have considered Food Security Issues of the Republic of Armenia in their works. T.Vardanyan and S.Minasyan have emphasized the importance of ensuring food self-sufficiency in the context of ensuring food security.

According to Samvel Avetisyan, the main problem of food security in Armenia is providing the population with bread and bread products in sufficient quantity and quality. This problem has always been urgent, since, for various reasons, Armenia did not have high self-sufficiency in grain (Samvel Avetisyan, 2023). I agree with Mr. Avetisyan that increasing the volume of wheat production is essential in ensuring food self-sufficiency. And that is the reason why state support programs are implemented from time to time in the Republic of Armenia to increase the volume of grain crop production. In recent years, several programs have been implemented, especially aiming to increase the volume of grain and leguminous crop production, both through direct support mechanisms and through the use of various mechanisms for subsidizing the price of seeds.

In their article, T.Vardanyan and S.Minasyan mentioned that the emergence and development of food banks in the world is very important for food security. Armenia should adopt this particular experience to solve the food security problem in the country (Tatevik Vardanyan, Suren Minasyan, 2022).

Summarizing the views of International and Armenian scientists on the importance of ensuring food security, we find that food self-sufficiency is a key part of ensuring food security. The main guarantee of ensuring food self-sufficiency is the development of agriculture. Considering the importance of food self-sufficiency in the context of ensuring the country’s economic security, in almost all countries, agriculture is considered a patronage sector, and special strategies are developed to face the challenges and ensure food security.

The basis of the Republic of Armenia's economic policy for ensuring food security is the right of citizens to full nutrition and freedom from hunger, in accordance with international law. The main objectives of the policy of the

Government of the Republic of Armenia (hereinafter referred to as the Government) in the field of ensuring food security are:

- a) ensuring the physical and economic accessibility of food,
- b) ensuring the security of food supplied for consumption by the population,
- c) creating, maintaining, and replenishing the state food reserve.

In 2023, the Government of the Republic of Armenia approved the Food Security Strategy and the Food Security Strategy Action Plan for 2023-2026, which includes about 50 measures. Moreover, when developing these 50 measures, the main pillars of food security have been taken into account, which are

- food availability
- food accessibility
- food utilization (availability)
- food security sustainability

Given that the Republic of Armenia is a landlocked country with limited access to the sea and external communication routes due to regional conflicts, the application of effective strategic approaches to ensuring food security is of great importance. Ensuring food self-sufficiency plays a major role in the context of food security. In this regard, there is a close connection between the development of agriculture and ensuring food self-sufficiency. Today, the demand for food products is increasing all over the world, and ensuring food security and reducing the number of hungry people is a serious challenge for all of us in the context of global climate change.

In this regard, we consider the study of the state of food security in the Republic of Armenia and the analysis of the policy implemented in the agricultural sector to be relevant. The goal of the research is to present mechanisms that will contribute to the mitigation of food insecurity risks in the sector as a result of a comprehensive study of the state of food security in the Republic of Armenia.

RESEARCH METHODOLOGY. During the research, the essence of food security, the views of foreign and domestic scientists on ensuring food security, and the policy conducted within its framework have been studied and analyzed. In particular, the strategic approaches to the policy being conducted and the measures being implemented were studied. Statistical, econometric, comparative, as well as induction and deduction methods have been used in the research. The results of a number of national and international studies characterizing food self-sufficiency were analyzed in detail. The poverty level was also analyzed in the work, since we find that food self-sufficiency and poverty levels are directly interconnected. The work has subjected to a comparative analysis of the investments made in the agricultural sector in recent years, and those programs that directly affect food self-sufficiency have been subjected to a more in-depth analysis. Considering that the level of poultry meat self-sufficiency is very low, and from the point of view of economic accessibility, increasing the volume of

chicken meat production is of significant importance, we also conducted a regression analysis to determine the impact of chicken meat production volumes on meat consumption trends. Considering that global climate change makes food security in the Republic of Armenia more vulnerable, state support programs aimed at climate risk management were also studied and analyzed.

Findings, results, discussion

Food insecurity in the Republic of Armenia is high: more than half of the population is at risk of food insecurity. The latest “Food Security and Vulnerability Assessment of the Republic of Armenia” conducted by the World Food Program (WFP) records that 23% of surveyed households are food insecure, and 56% are at the threshold of food security.¹

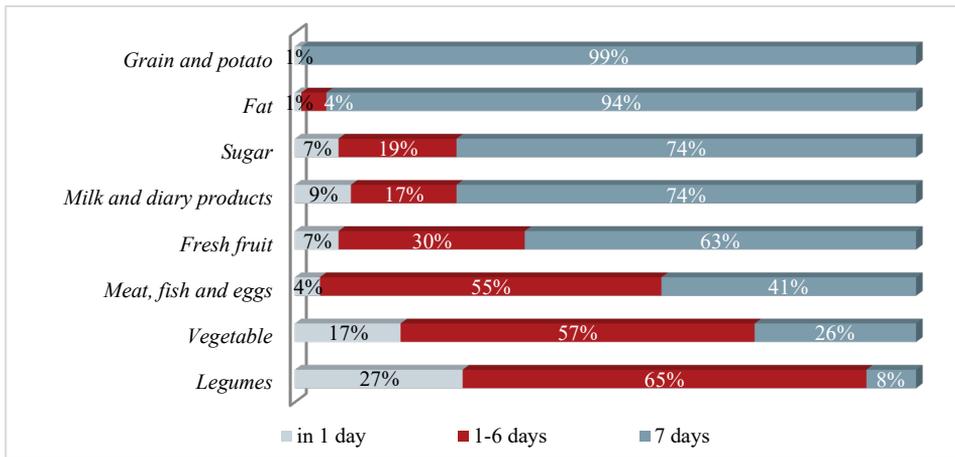


Figure 1. Consumption of food commodity groups during a week, %²

The studies indicate that the number of insecure people is mainly concentrated in Lori, Tavush, Shirak, and Gegharkunik. The level of food insecurity is considered to be the monthly expenditure on food below the threshold of the minimum food basket, or about 41.0 thousand drams per capita.

Studies show that 28% of the population still spends 24,000-48,000 drams on food, which indicates that about 28% are at a level of insecurity.

Studies show that the population consumes primary food products mostly, in particular cereals, potatoes, fatty foods, sugar, dairy products, and meat. However, it should be noted that the analysis of poverty indicators in the Republic of Armenia for 2021-2023 shows that the poverty rate in rural areas is gradually decreasing; in particular, in 2021-2023, the poverty rate decreased from 26.5% to 23.7% (see Figure 2).

¹ Sixth food security and vulnerability assessment in Armenia, wfp.org/countries/Armenia.

² Ibid.

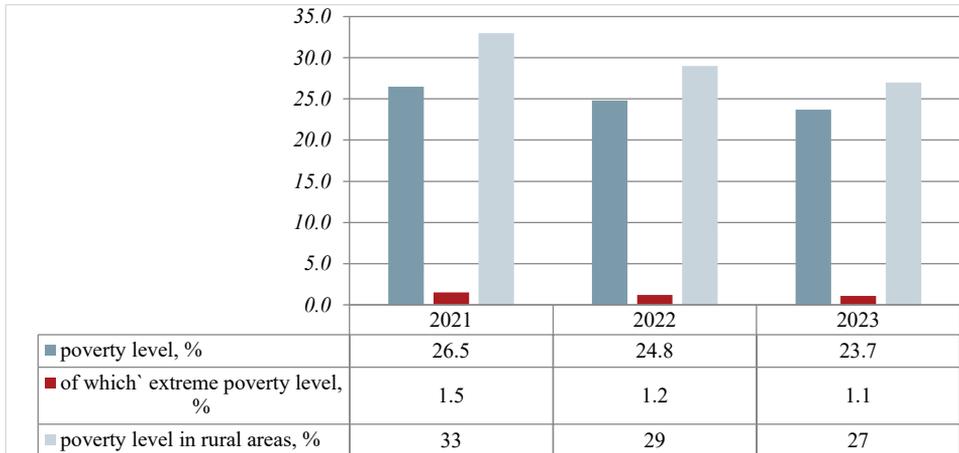


Figure 2. Poverty level in the RA (%), 2021-2023³

Poverty reduction in rural areas is directly related to income growth, as evidenced by the data in Figure 3.

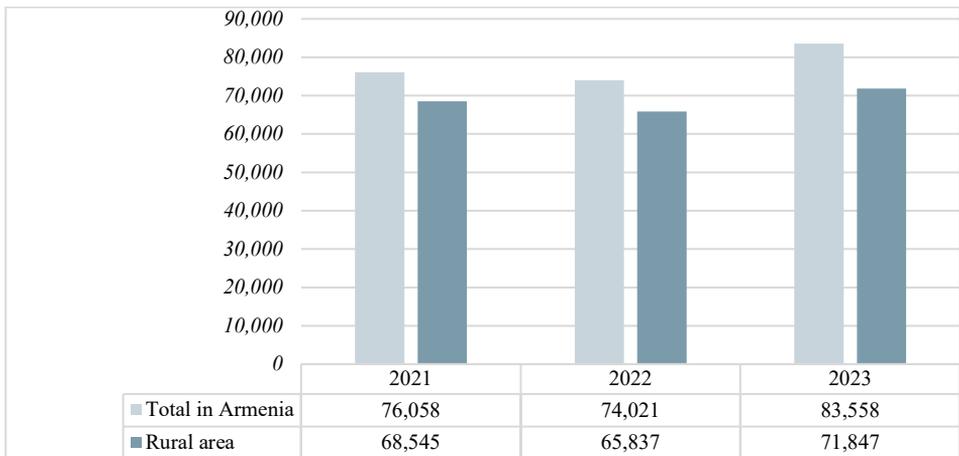


Figure 3. Average monthly household incomes in Armenia, per capita, AMD, 2021-2023⁴

Proper nutrition is very important for food security and reducing the number of hungry people, i.e., eating foods with adequate calorie content, which will contribute to a healthy lifestyle. Studies show that food consumption is significantly affected by the levels of self-sufficiency in individual products in a given country.

³ Official website of the Statistical Committee of the Republic of Armenia: www.armstat.am

⁴ Ibid.

Table 1

Level of food self-sufficiency, 2022-2024⁵

<i>FOOD</i>	<i>2022</i> <i>(%)</i>	<i>2023</i> <i>(%)</i>	<i>2024</i> <i>(%)</i>
Wheat	24.4	27.9	22.8
Corn	4.7	8.3	8.3
Barley	55.8	56.8	55.4
Potato	98.4	99.2	106.2
Vegetables and melons	102	97.4	99.6
Cucumber	93.6	95	95.3
Fruits and berries (except grapes)	102.0	103.1	100.5
Leguminous crops	26.0	35.2	38.4
Vegetable oil	0.1	0.0	0.0
Eggs	99.2	98.8	98.9
Milk	83.4	80.2	78.6
Beef	89.9	90.7	88.0
Pork	47.3	48	49.7
Lamb and goat meat	100.4	106.1	105.2
Poultry	22.3	25.4	26.0
Fish	148	136.8	118.8
Grape	106.6	106.6	103.7

The results of the analysis in Table N 1 indicate that self-sufficiency in the Republic of Armenia is high for a number of products, in particular grapes, fish, sheep and goat meat, beef, milk, eggs, fruits and berries, potatoes; However, some products still have a low level of self-sufficiency: poultry, pork, sugar, vegetable oil, corn, wheat, barley, grain.

The mentioned problems have been discussed in the Ministry of Economy of the RA, in the workshops of FAO, WFP, and other international and local meetings with the stockholders.

Taking into account the fact that the level of self-sufficiency is still low for some products, the government supports rural entrepreneurs with a number of tools. More than one state support programs are being implemented in the Republic of Armenia, which are aimed at increasing the level of food self-sufficiency, including the plant growing support program, intensive agriculture development, greenhouse farm support programs, and livestock development programs.

⁵ The table was compiled by the author based on data of the Statistical Committee.

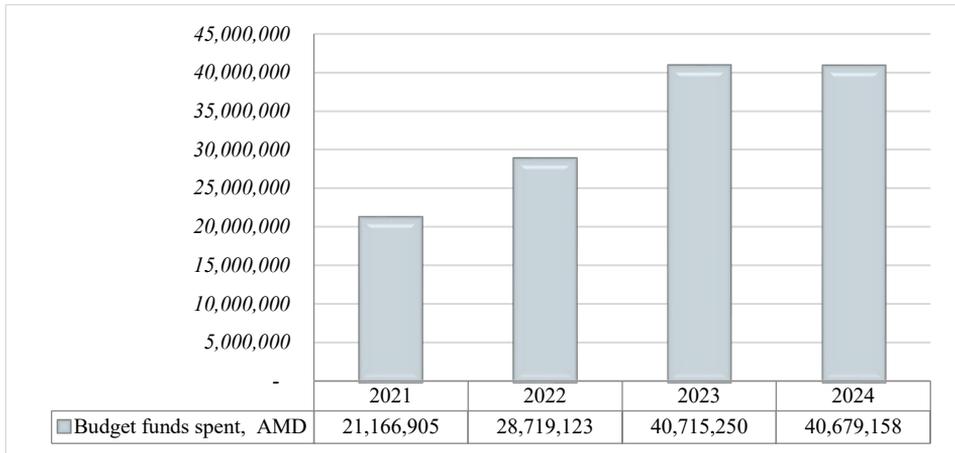


Figure 4. Budget performance of agricultural programs by year⁶

Particularly noteworthy from the perspective of increasing food self-sufficiency is the program to support large investment projects in the livestock sector, within the framework of which 11 contracts have been signed for investments of about 82 billion drams. Within the framework of this program, the government supports about 40% of the capital investments made.

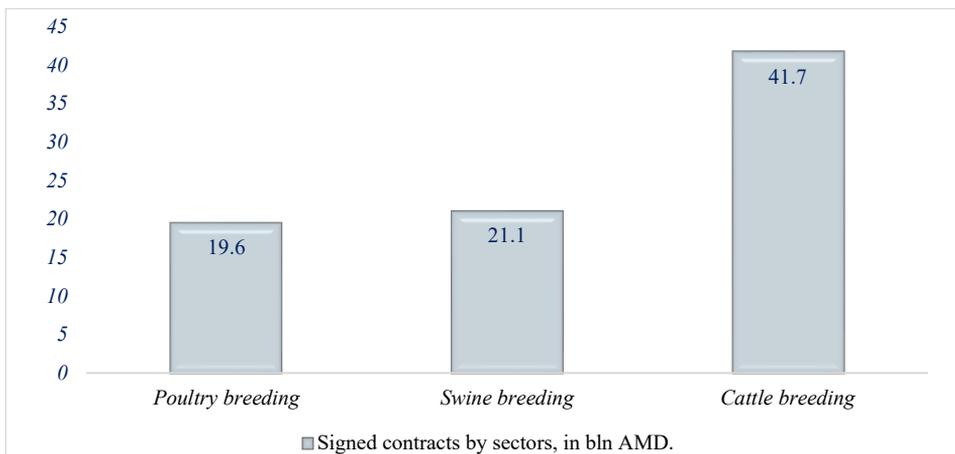


Figure 5. Projected investments within the framework of a large investment program in the livestock sector⁷

At the same time, the analysis of the signed contracts shows that the volume of investments in the poultry sector is about 19.6 billion drams, and in the pig sector, 21.1 billion drams. Our calculations show that, as a result of the investments made, the following will be produced by 2027:

Poultry meat - 17,300 tons, self-sufficiency will be 57.2%,

Pork meat - 6,400 tons, self-sufficiency will be 68.3%,

⁶ The chart was compiled by the author based on data from the Ministry of Economy of the Republic of Armenia.

⁷ Ibid.

Beef meat - 1,500 tons, self-sufficiency will be 92.9%,

Milk - 19,000 tons, self-sufficiency will be 82.8%,

The data show that as a result of the implementation of the contracts signed within the framework of the state support program, the level of self-sufficiency in poultry meat will increase to twice its current level.

Table 2

Poultry meat production and meat consumption volumes, 2014-2023

	<i>Poultry meat production, thousand tons /X/</i>	<i>Prices, kg/AMD/Y/</i>	<i>Meat consumption, per capita, kg /Z/</i>
2014	8,4	1651	23,2
2015	9,5	1590	23,2
2016	9,7	1490	23,8
2017	10,6	1499	23
2018	12,3	1454	24,2
2019	12,4	1595	24,8
2020	12,6	1428	27,8
2021	14,6	1654	30,9
2022	11,9	1737	27,7
2023	13,8	1750	28,4

In order to determine whether poultry meat production volumes affect meat consumption volumes, we conducted a regression analysis, according to which the relationship between the phenomena is direct and very strong.

SUMMARY OUTPUT							
<i>Regression Statistics</i>							
Multiple R		0.850198998					
R Square		0.722838336					
Adjusted R Square		0.688193128					
Standard Error		1.548369592					
Observations		10					
ANOVA							
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>		
Regression	1	50.02041284	50.02041	20.86402	0.00183127		
Residual	8	19.17958716	2.397448				
Total	9	69.2					
<i>Coefficients</i>							
	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	11.91850153	3.056625833	3.899235	0.00455	4.869909719	18.9670933	4.869909719
Production, 1000 tons,X	1.19011213	0.260548681	4.567715	0.001831	0.589285794	1.79093847	0.589285794

The coefficient of determination shows that 72.28% of the variation in meat consumption is due to the variation in poultry production, and the remaining 27.72% is due to other, random factors. The constructed regression model and the regression coefficient can be considered significant. According to the constructed regression model, an increase in poultry production in the Republic of Armenia by one thousand tons in 2014-2023 contributes to an annual increase in meat consumption per capita by 1.1 kg.

Taking into consideration the fact that poultry meat is cheaper than other types of meat, increasing production volumes will contribute to increasing poultry meat consumption and encouraging the population to consume high-calorie local products.

Considering that self-sufficiency in grain and legume products is also low, the government is also providing support in this direction. Within the framework of the Crop Production Support Program, more than 19,000 hectares were sown in 2024, which was aimed at increasing the level of food self-sufficiency in grain and legume crops. However, it should be noted that from the point of view of ensuring food self-sufficiency, climate risks are currently a big problem. In particular, the risk of hail is increasingly becoming a disaster for the RA agriculture. In this regard, the government is providing support both in subsidizing loan interest rates and in supporting the installation of hail protection networks, compensating investment costs by 50-75%.

But we should note that the investment in hail protection nets is economically effective only in the field of horticulture; with respect to other crops, the use of missile systems is important in the world. In recent years, the damage caused by hail in the agricultural sector of the Republic of Armenia has amounted to about 25 billion drams, which significantly reduces the level of self-sufficiency and increases the risk of attracting investments in the agricultural sector. In this regard, we highly value the implementation of investments in the field of risk management. Regarding the hail coverage risk, the government is in discussions with many countries to implement more suitable and acceptable technologies for Armenia.

CONCLUSIONS. Summarizing the above-mentioned facts, we find that a lot of work is being done to ensure food security in the Republic of Armenia, but self-sufficiency is still low in a number of areas. In recent years, the government has been implementing more than a dozen state support programs for the agricultural sector to increase self-sufficiency, the results of which will be fully visible in about 3 years. Taking into account that the agricultural sector provides basic food products, we can say that the creation of infrastructure aimed at managing risks in the agricultural sector will directly contribute to increasing the production volumes of food products, increasing the areas for organizing production, and stabilizing the incomes of rural residents.

In particular, the introduction of anti-hail systems is emphasized, based on international best practices to ensure the continuity of state support programs aimed at the introduction of advanced irrigation technologies, creation of irrigation infrastructure, and development of intensive crop production and pedigree livestock breeding.

It should be noted that the RA Agricultural Development Strategy also considers the path of intensification of agricultural development, and in this regard, support is currently provided through more than 20 instruments, which are mainly aimed at implementing capital investments, whose results will be witnessed in 2-3 years.

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