



FOOD SECURITY IN UZBEKISTAN

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Abstract

Uzbekistan has the highest population among Central Asian countries which makes achieving food security to meet the demand for adequate food for its fast-growing population the main issue of concern for Uzbekistan. The purpose of the article is to make recommendations on the existing problems by analyzing the food security of Uzbekistan over the past 20 years. As a method, a conceptual framework of food systems for diets and nutrition of the High-Level Panel of Experts on Food Security and Nutrition (HLPE) which studies the state of food security by food systems was chosen to analyze the current state of food security of Uzbekistan. In illuminating the conceptual framework, the results of research by several national and foreign scientists engaged in the analysis of global food security and supply problems and published by international organizations were studied using observational and comparative methods. The article first tried to provide information on the concept of food security as well as the conceptual framework of food systems. The study identified generally accepted food safety criteria. Based on the criteria, the indicators related to the current state of food security in Uzbekistan were analyzed and the main factors influencing the changes were identified. The study discussed the analysis of food systems in Uzbekistan by assessing three key components of the food system: food supply chains, the food environment, and consumer behavior. At the end of the study, a summary of important conclusions and recommendations on food security was presented.

Keywords: Food security · Food supply · Food environment · Food systems · Food drivers · Uzbekistan · Central Asia





Introduction

Today, various forms of global economic crises, climate change, and drought, as well as various diseases, epidemics, and pandemics are becoming more common around the world. For example, while the Covid-19 pandemic, which began in 2019, led to an economic crisis around the world, the pandemic has killed millions of people around the world. The pandemic, which has spread around the world, has shown that many countries around the world are not only economically unprepared for such situations but also for food security and safety. Disruptions in the food supply chain, instability and chaos in the system, and the lack of food stocks became apparent. During the pandemic, poor food security for the poor led to an increase in hunger among them. This posed a particular risk, especially for countries that do not have alternative sources of food supply. It is precise because of the Covid-19 pandemic that the importance of preparing for such crises around the world, as well as ensuring the security of millions of people, especially food security, has been confirmed. Therefore, the production of food products, the expansion of their diversity, and the creation and increase of available resources are becoming the most important issues of today's governments.

Currently, Uzbekistan is a fast-growing demographic country with an average annual population growth of 1.92%. Uzbekistan has the highest population of any other Central Asian country, with a population of 34.2 million [27]. For this reason, to meet the growing demand of the population for adequate food, achieving food security is a key issue in Uzbekistan. According to the Committee on World Food Security of the United Nations (FAO) "Every human being has the right to adequate food" [10; 11; 13]. This is one of the main tasks of the new government of the new Uzbekistan. Therefore, on October 23, 2019, the President of the Republic of Uzbekistan issued a resolution No. PF-5853 [21], aimed at further development of agriculture, which is the main area of food security. The Strategy for Further Development of Agriculture of the Republic of Uzbekistan" and the main tasks to be implemented:

- Development and implementation of state food safety policy, including food security and improvement of consumer rations, production of the required amount of food products;
- Convenient agribusiness involves the widespread introduction of market principles in the purchase and sale of agricultural products, the development of quality control infrastructure, export promotion, the production of competitive, high value-added agricultural and food products in target international markets to create an environment and a value chain;





- Introduce mechanisms to reduce government involvement and increase investment attractiveness in the area of modernization, diversification, and sustainable growth of the agricultural and food sectors, as well as increasing the inflow of private investment capital;
- Including monitoring of food safety assessments based on internationally recognized and applied methodologies and best practices.

The article analyzes the issues of strengthening food security through the sustainable development of agriculture.

The theoretical and methodological foundations of food security and its sustainable development have been reflected in the scientific research of several worlds and local scientists. As J. Sachs points out in his research, the Millennium Development Goals (MDGs) are a historic and effective way of global mobilization to achieve a set of important social priorities around the world. They express broad public concern about poverty, hunger, disease, underserved school education, gender inequality, and environmental degradation [17].

Research, conducted by Griggs D. and scientists group shows, that “further human pressure risks causing widespread, abrupt and possibly irreversible changes to basic Earth-system processes. Water shortages, extreme weather, deteriorating conditions for food production, ecosystem loss, ocean acidification, and sea-level rise are real dangers that could threaten development and trigger humanitarian crises across the globe. Growing affluence and the right to development among the world’s poor demand that people of all nations make the transition to sustainable lifestyles” [9].

According to a group of Russian scientists led by Ushachev I., “food security” is a complex concept that includes food independence and access to food, physically and economically. “Food independence” is a concept determined by the country’s self-sufficiency in food products, based on the level of normative and actual consumption, that is, the ratio of production in the country to total domestic consumption of all types [30].

As noted in the research of Russian scientists A. Tatarkin and S. Polbitsyn, the doctrine of food security of the countries reflects the level of quality and minimum provision of the population with the food they can buy. Thus, food security can be considered as the physical, economic, and social provision of food products that meet the needs and preferences of consumers [18].





2 Materials and Methods

The purpose of the study is to identify the main problems of food security in the country and to develop independent proposals and recommendations to address them. The following tasks have been set to achieve this goal:

- To study the scientific articles and researches of several international scientists and the recommendations of international organizations as a theoretical and methodological basis of the research and to identify criteria related to food safety;
- Identify problems in food security and study their factors, as well as find and analyze solutions to problems identified based on our observations.

In covering the article, various aspects of food safety issues were methodologically analyzed. The results obtained from them were studied and analyzed using analysis and synthesis. The study identified several issues related to food security in the world and Uzbekistan. The concept of “food security” and its definitions was analyzed and criteria for food security were developed. Materials and statistics from the United Nations (UN), the Food and Agriculture Organization of the United Nations (FAO), the World Bank, the Statistics Committee of the Republic of Uzbekistan, and the Ministry of Agriculture were widely used to develop the criteria. In addition, in the preparation of the article, we analyze them, collect and study food safety data from different sources, compare them, work with tables in the analysis of results, different methods and techniques in the analysis of graphs, including abstract and analytical observation, synthesis and analysis, normative and positive analysis, comparative analysis, economic-statistical and other methods were used.

3 Results

Concepts and definitions of “food security” have evolved since it was first introduced in the early 1940s. The original concept of food security was “freedom from hunger”. It was planned to achieve food security gradually, starting from meeting the basic demand for cereals and other foods that contain a minimum level of dietary energy, following the increase in the production of foods containing protein and other nutrients essential to maintain good health. In the 1970s, the definition of developed food security-focused more on food supply, production, and agricultural activities that all people have a sufficient amount of food to eat.

Nowadays, the most widely used definition of food security was again refined in The State of Food Insecurity 2001: “Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active healthy life” [4]. In this definition,



the multidimensionality of food security is reinforced and the dimensions of food security were determined as follows: availability, access, stability, and utilization.

Presently, the terms “food security and nutrition” and “food and nutrition security” are both used either to make a distinction between food security and nutrition or nutrition security; and sometimes they are used interchangeably as well as to emphasize the idea that they are related. The term “food security” is more frequently used since it reflects the conceptual relation of both security concepts as a single development goal of policy [14]. To sum up, food and nutrition security was defined as “Food and nutrition security exists when all people at all times have physical, social and economic access to food, which is safe and consumed in sufficient quantity and quality to meet their dietary needs and food preferences and is supported by an environment of adequate sanitation, health services and care, allowing for a healthy and active life” [12].

The High-Level Panel of Experts on Food Security and Nutrition (HLPE) of the Committee on World Food Security assesses and studies the state of Food and Nutrition Security by food systems which involve all actors and activities that relate from production to consumption of food, and the output of these activities. The HLPE highlights that the drivers, actors, and elements of the food system do not exist in isolation but they are interlinked and interact with each other as well as with health, energy, and transportation systems.

The conceptual framework determines five major categories of drivers of food system changes which are biophysical and environmental; innovation, technology, and infrastructure; political and economic; socio-cultural; and demographic drivers. In addition, the conceptual framework has three main elements of food systems: **food supply chains, food environments, and consumer behavior**. These elements “shape diets and determine the final nutrition, health, economic and social outcomes of food systems”. (Figure 1)

The food supply chains include activities and actors from food production to its consumption where there are the following steps: production; storage and distribution; processing and packaging; retail and markets. The elements of the supply chain impact the four dimensions of food and nutrition security namely availability, access (physical and economic), utilization, and stability.

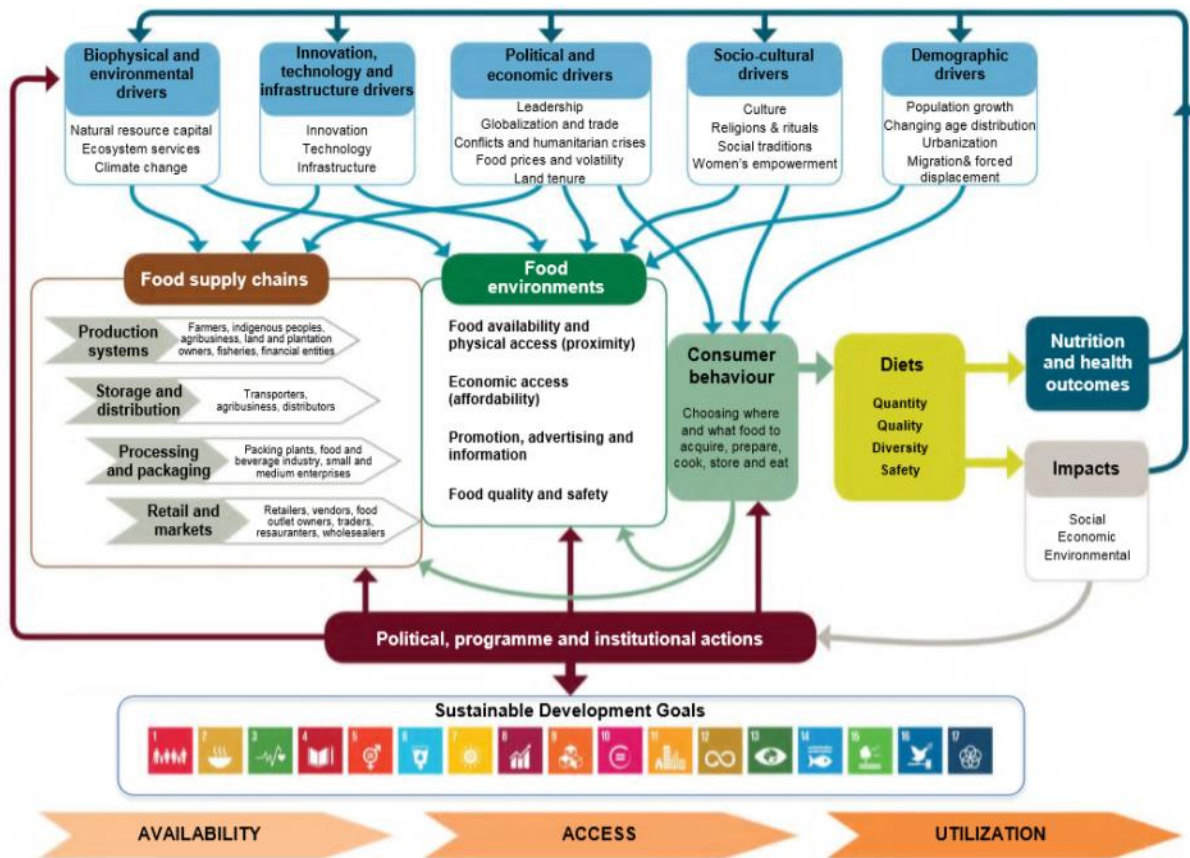


Fig. 1. Conceptual framework of food systems for diets and nutrition. Source: [10].

The HLPE defines the food environment as “the physical, economic, political and socio-cultural context in which consumers engage with the food system to make their decisions about acquiring, preparing and consuming food” [10]. The underline elements of the food environment that affect consumer food choices, food acceptability, and diets are physical access (proximity) and economic access (affordability) promotion, advertising and information; and food quality and safety [2].

Consumer behavior indicates the choices of consumers on where and what food to buy, and how to prepare, cook, store, and eat. It is important to mention that consumer behavior is largely influenced and shaped by food environments of people’s food choices.

Some conditions in the country are associated with a specific mentality, such as malnutrition (micronutrient deficiencies), poor nutrition, overweight, and obesity can cause [7, 1]. Malnutrition not only affects people’s health but also has long-term negative consequences for the country’s socio-economic development due to its



impact on learning ability and productivity with a significant decrease in working capacity.

The HLPE framework determines three constituent elements of the food systems (food supply chains, food environments, and consumer behavior), which shape diets and determine the final nutrition, health, economic and social outcomes of food [10]. They will be used to analyze and assess the food security of Uzbekistan.

It should also be noted that the production of enough food for the population of the country does not mean that food security has been ensured. In the 1996 Rome Declaration of the United Nations, the “Concept of Food Security” [29] set out its basic principles. Food security means not only self-sufficiency in food but also if a country has comparative advantages, it must produce enough food for its own needs; the government should be able to import as much food as it needs to meet the needs of its citizens, if necessary; the state must ensure that food is safe for its citizens, both physically and economically; it should also be borne in mind that food security must take into account the changing and ever-growing individual needs of the population; governments must be able to ensure the country’s food independence, regardless of any external factors, while the food supply must be resistant to both seasonal and climatic factors.

After the collapse of the Soviet Union, governments that declared independence began to define their own independent policies to ensure the food security of their countries, realizing that their demand for food would increase rapidly, and the main focus was on providing the population with wheat and cultivating it. Since the early years of independence, many national programs and policies have been introduced in the country. Firstly, household plots in rural areas were enlarged and plots were given to those families that had not had them previously. This reform resulted in reducing food scarcity at household levels, which also were able to sell surpluses in local markets. The second major step was the reform of cropping patterns, which was underlining reform in the policy of achieving food security in the country. It was decided to decrease cotton yields and increase the yields of wheat, vegetables, fodder crops, orchards, and vineyards. Moreover, a special program was established by the state to achieve grain security and stop imports of it. After this step, the state’s target moved to deepening the economic reforms in agriculture, diversifying the types of owners, and expanding their rights [32].

The Uzbek government is currently implementing further reforms to reduce food insecurity. According to the economic factors of changing food and food security in Uzbekistan, the growth of GDP per capita, food prices, and price volatility are





considered important factors, increasing incomes, reducing inflation, as well as employment of the population.



Fig. 2. Growth rates of GDP in 1991-2020, (annual %) – Uzbekistan. Source: The World Bank. National accounts [26].

Figure 2 shows the trend of the growth rates of GDP over the independence years, it can be seen that in the early independence year of the country, its economy faced dramatic challenges; by contrast, since 2004 GDP has been increasing rapidly. In addition, food prices and the share of household expenditures for food products are decreasing as well.

Agriculture, an important sector of the Uzbek economy, is the mainstay of food security and security, accounting for about 26.07% of GDP, [32] and the share of agricultural products in the country's total exports in 2020 will be 8.8% formed. This requires not only the creation of a food security system, but also the development of the food security sector, given that a large part of the population is employed in this field, and about one-third of the population's income comes from agriculture.

Agricultural management is implemented by the Ministry of Agriculture. Food production and supply are represented by various actors and stakeholders: dekhkan (private) farms; farm enterprises (or private farms); and organizations engaged in agricultural activities (in some literature they are called agricultural enterprises). Dekhan farms are small-scale farms that produce agricultural products based on the



personal and family members' labor on the land given by the state to the head of the family (note: the land is state property in Uzbekistan).

The main contributors to the food supply are dekhkan farms, therefore, they are considered the main actor in the food production system of the country. According to national statistics on the distribution of gross agricultural output by types of farms in 2021, the highest share on this indicator belonged to dekhkan (private) farms with 65.9 %, while farm enterprises' share was 29.2 %; and only 4.9 % belonged to organizations engaged in the agricultural activities (Figure 3). In addition, dekhkan (private) farms and farm enterprises have access to a sufficient range of national financing programs which reflects the support of the state for private farms, which shows the importance of the agricultural sector in the economy of the country.

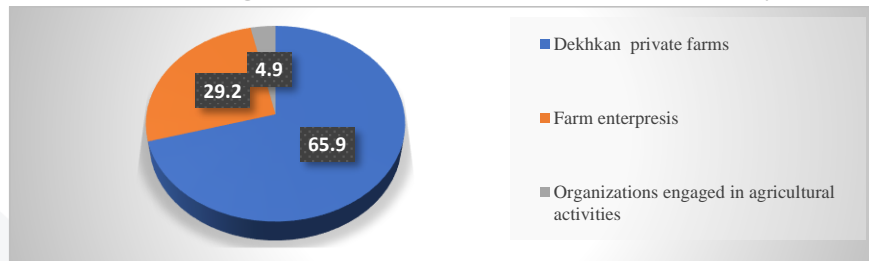
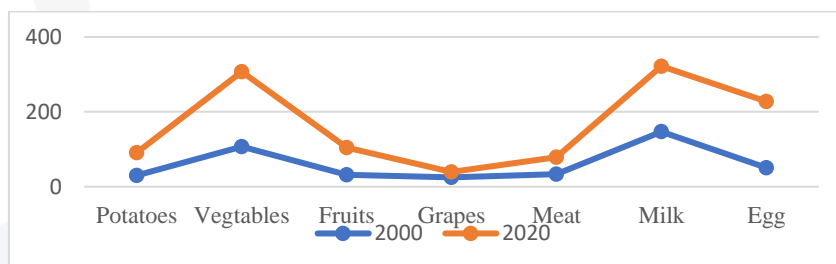


Fig. 3 Distribution of the gross agricultural output of types of farms in 2021. Source: Compiled by the authors based on [23].



ig. 4. Production of main agricultural products per capita in 2000-2020 (kilograms, eggs – pieces). Source: Compiled by the authors based on [23].

Figure 4 shows the production of main agricultural products. It can be seen that the highest figures for agricultural products have belonged to vegetables, milk, and eggs. However, the diversity of crops of vegetables and fruits produced in Uzbekistan is limited. For example, out of 1,200 vegetable species existing in the world, just 30 crops are cultivated in Uzbekistan, where 85% of total national vegetable production belongs to just five crops [3]. In addition, the crop sector is mainly constituted of cotton and wheat [1].

Storage and distribution are other main elements of food supply chains. This stage of the food supply chain has an important impact on food safety and food quality, food



losses, and waste [8]. According to the qualitative assessment of the presence of sufficient crop storage facilities based on the size of the agricultural sector and population, there are sufficient crop storage facilities [19]. However, this figure is still high, and more agricultural infrastructure needs to be improved to reduce food losses. Farmers with the highest share in the total volume of agriculture sell their products mainly in local markets, and sometimes take them to Tashkent (the capital) for sale at high prices. Because farms are small and based on family labor, they transport food to large markets usually in old trucks (not refrigerated machines, for example) that are not specifically equipped to transport food. At the stage associated with this logistics, much of the crop is qualitatively spoiled and lost. For example, according to a 2020 survey, 15.3% of all food produced globally is wasted at the farm stage with a total value of \$370 billion. This suggests that substantially more than a third of food produced is being wasted - possibly as much as 40%, or 2.5 billion tonnes [31]. The main reasons for the loss and waste of food are poor infrastructure from harvesting to transportation, storage, and delivery to consumers and far behind world standards, as well as pest and insect damage, freezing, and fermentation in bad climates [3].

In the structure of both retail trade turnover and wholesale trade turnover in 2019, it can be seen that the shares of food and non-food products in retail turnover are almost the same, while there is a significant difference in the figure for wholesale trade turnover, where approximately only one-fifth of the total wholesale belongs to food products (Figure 5).

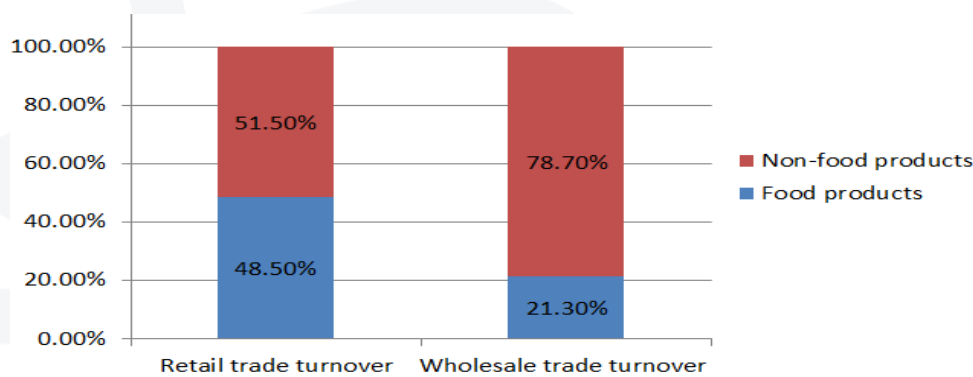


Fig. 5 Structure of retail and wholesale trade turnover in 2019.

Source: Compiled by the authors based on [22].

Each year, various organizations around the world and the United Nations Food and Agriculture Organization (FAO) examine issues related to food security in the world and issues related to finding solutions to these problems. and through this the country's food security results and future prospects are announced. One of such



indicators is the Global Hunger Index, and in 2021 we can see that Uzbekistan has returned to the top of the index, recording good results among the countries of the world. Food insecurity is a key indicator for international hunger targets, which measure food insecurity.

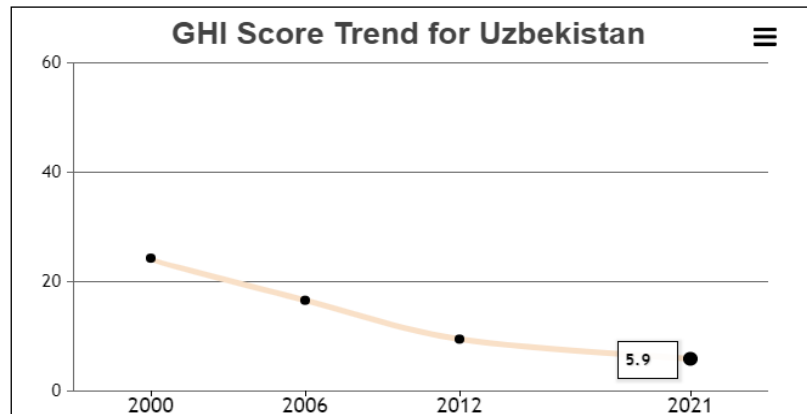


Fig. 6. Global Hunger Index score Trend for Uzbekistan. Source: [7].

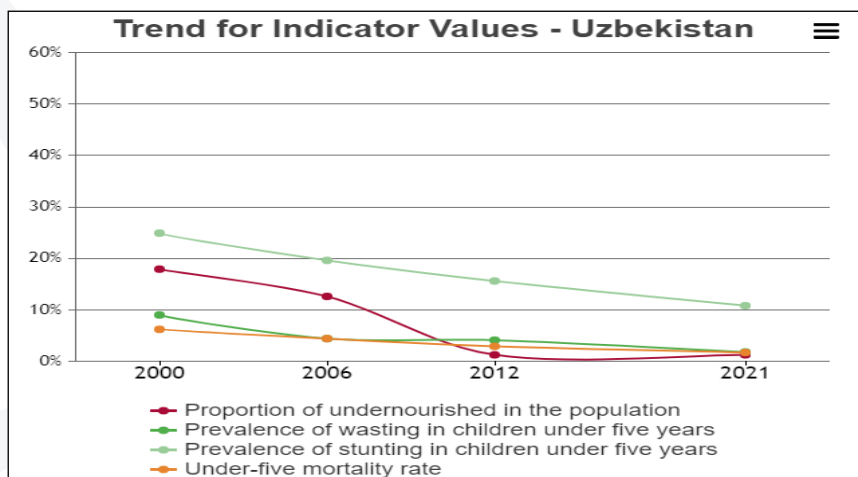


Fig. 7. GHI Score Trend for Indicator Values. Source: [7].

Figures 6 and 7 provide information about the overall trend of GHI score and trend of GHI according to each indicator (figure 5). As can be seen from the first figure, the overall trend of the Global Hunger Index is gradually decreasing (2000- 23.7%, 2021- 5.9 %). In the 2021 Global Hunger Index, Uzbekistan ranks **21st** out of the 116 countries with sufficient data to calculate 2021 GHI scores. With a score of **5.9**, Uzbekistan has a level of hunger that is low [7]. A similar decreasing trend can be observed in each indicator of GHI. Indicators such as stunting and undernourishment are sensitive to poverty.



They might be caused by long-term insufficient nutrition consumption and/or poor diets [5; 6]. Based upon the article Alpas on the regional overview of food security and nutrition in 2021, the “prevalence of stunted children was higher in the poorest groups”. The poorest people consume a diet dominated by cereals [1, 54].

Discussion

The state plays an important role in changes in the country's food and food security. Although food is produced and supplied by private producers, it is important that the state supports food producers through subsidies, various subsidies and financial programs, and sometimes maintains government intervention in the production and selection of strategic food products. will be. Recognizing that food security and supply depend primarily on agricultural potential, governments need to focus on how well they can develop the country's agriculture and agricultural infrastructure and address the problems in a systematic way, the level of food security of the population of this country will be so high.

It is known that one of the main tasks in ensuring food security is to analyze the income and purchasing power of the population. Based on our observations and analysis, we determined the following results. According to the World Bank, Uzbekistan is a low-income country, and while the country's economy is growing steadily, the number of poor people in the country remains relatively high. According to INGRAM, 11.4% of Uzbekistan's population lives below the national poverty line. This means that almost one in nine people in the country is poor, and he or she is struggling with food and malnutrition problems. In addition, Uzbeks spent an average of 55.4 percent of their income on food in 2020 [25] and given that half of their income is spent on food alone, two conclusions can be drawn. 1- The income of the population is very low. 2- The fact that food prices are very high. In addition, there is a sharp imbalance between rural and urban incomes and living standards. This leads to the conclusion that the disparities in economic development of the regions are high, there are few jobs in rural areas, as well as low wages in rural areas. These figures are, of course, analyzed globally, and analysis of the 2021 World Social Report and statistics show that about 67 percent of the world's population is from low-income countries. The income of the population is below average. It is estimated that 60% of the respondents live in rural areas. In addition, about 80 percent of those living below the poverty line live in rural areas, and one-fifth of the rural population lives in poverty four times higher than the urban population. Given that half of Uzbekistan's population lives in rural areas, this poverty is widespread throughout the country, which undermines their purchasing power and, as a result, they face many food





insecurity problems. According to our observations, in 2020, the growth rate of food prices will be 15.3%. Overall, in January-December 2020, food prices rose by 15.3%, non-food prices by 8.8%, and services by 7.1% [5]. These changes, in turn, have a negative impact on people's consumption behavior, limiting the population's ability to consume high amounts of nutrients and healthy foods. Inability to consume enough food on a regular basis can lead to varying degrees of satiety and micronutrient deficiencies. This, of course, has a negative impact on human health. At the same time, the positive results of the public and state initiatives to protect the poor from various food-related difficulties and shocks, which can be called food security network programs in our country, are positive. There is also information that various programs and projects are being implemented by the government [20]. In addition, the issue of clean drinking water, which is one of the priorities of food security, is one of the most important issues facing the Government of Uzbekistan. Given the country's relatively arid climate, providing clean drinking water remains a major challenge. Meanwhile, the country's clean water supply is below world standards, with almost one in ten people in the country still unable to access clean drinking water services, indicating serious water problems among the country's nearly 3.5 million people.

Global food security and safety issues have always been in the focus of the world community. In particular, the historic summit of the UN General Assembly in September 2015 adopted 17 global goals and 169 different tasks in the Sustainable Development Goals (SDGs), which are to be implemented by 195 countries by 19530. While sustainable development is the main goal, it is one of the main tasks of today's countries to choose the path of development that meets the interests of today's people without compromising the needs of future generations. The SDG's first goal is to "eradicate all forms of poverty" worldwide by 2030. It is estimated that more than 780 million people on the planet still live in extreme poverty, and more than 70% of them earn less than \$ 1.9 a day. Even in the richest countries in the world, more than 30% of children are forced to live in poverty. Nearly 80 percent of the world's extremely poor live in agriculturally dependent villages [28]. Therefore, food security is not a problem of one country, but a problem of countries all over the world from time immemorial. The results will be much better if each country tries to solve the problems together. but one thing should not be forgotten, for this will require laws enacted by each country with sufficient hack and political will. Today, the government of Uzbekistan is more actively involved in such initiatives at the international level. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan No. 841 of October 20, 2018 "On measures to implement national goals and objectives in the framework of sustainable development" has approved and is actively implementing





the “National Goals and Objectives and the Roadmap for their Implementation” until 2030. [15] The roadmap sets several targets for 2030, including ending extreme poverty and halving all forms of poverty. As well as strengthening the targeting and efficiency of the social protection system; ensuring high quality and balance of nutrition in the required amount and eliminating all forms of malnutrition; ensuring the stability and efficiency of food production; key areas such as rural infrastructure development, agricultural research, and the improvement of innovative technologies have been identified [16].

To consistently implement the UN “Sustainable Development Goals” in Uzbekistan by the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan dated October 20, 2018 No-841 “On measures to implement national goals and objectives within the framework of Sustainable Development until 2030” was approved “National goals and objectives and a roadmap for their implementation” [15]. In this roadmap until the period up to 2030 are set several tasks for implementation, such as the elimination of extreme poverty and the halving of all forms of poverty; strengthening the targeting and effectiveness of the social protection system; ensuring high quality and balance of nutrition in the required amount and eliminating all forms of malnutrition; ensuring the sustainability and efficiency of food production; development rural infrastructure, agricultural research, and innovative technologies [16].

To achieve the goal of strengthening food security, the government will need to pay special attention to:

- Improvement of mechanisms for adequate food supply;
- Integration of agricultural producers with social facilities;
- Gradual abandonment of the mechanism of state regulation of prices for agricultural and food products and the introduction of a mechanism for the purchase of grain at market prices on the basis of quotas for government needs;
- Development of a long-term program to promote a culture of healthy consumption;
- Introduce and continuously monitor food safety assessment systems based on internationally recognized methodologies and best practices;
- Development of sectoral programs to stimulate the production of socially important products;
- To conduct research aimed at increasing productivity in animal husbandry, sustainable intensification of fish and poultry, as well as milk production [16].



Table 1. Main indicators of the agriculture sector's GDP in Uzbekistan.

Indicators	2000	2005	2010	2015	2019
The share of agriculture in GDP, in %	34.4	29.5	32.9	34.1	28.1
Annul growth rates of gross agricultural output, in % compared to the previos year	103.1	105.4	106.3	106.1	103.1
The share of agriculture in fixed capital invesments, in %	5.7.	4.4	3.5	3.3	6.2
The share of agriculture in the population employed in all sectors of the economy, in %	34.4	29.1	26.8	27.6	26.2

Source: Compiled by the authors based on [23].

From the above discussions and Table 1 we can conclude that in 2000-2019 the share of agricultural products in the GDP of Uzbekistan decreased from 34.4% to 28.1%, while the share of agriculture in the population employed in all sectors of the economy Although its share has shrunk from 34.4 per cent to 26.2 per cent, agriculture still remains a priority. This is due to the relative low income of the population, as well as the fact that their incomes remain highly dependent on seasonal weather and climate change and increase the level of risk. It is recommended that the government focus on industries or services to ensure employment.

Table 2. Agricultural products produced 2000-2019 in Uzbekistan

Indicators	2000	2005	2010	2015	2019	2019 to 2000, in%
Wheat	159.4	231.5	236.1	222.5	221.5	139.0
Vegetables	107.3	134.4	222.2	320.8	304.2	283.5
Potato	29.7	35.3	59.3	85.4	92.0	309.8
Melon crops	18.3	23.5	41.4	58.7	61.6	336.6
Fruits	32.1	36.3	59.9	87.0	82.0	255.5
Grapes	25.3	24.5	34.6	50.0	47.7	188.5
Meat (live weight)	34.1	40.6	51.3	61.4	73.7	216.1
Milk	147.4	174.1	216.0	288.4	319.1	216.5
Information for comprasion:						
Permanent population, in thousand people	24 908.2	26 312.7	29 123.4	31 575.3	34 558.9	138.7
Total crop area, in thousand hactares	3 778.	3 647.5	3 708.4	3 694.2	3 309.4	87.6

Source: Compiled by the authors based on [23].



Table 2 shows that despite the reduction of agricultural land in the Republic of Uzbekistan from 2000 to 2019 from 3778.3 hectares to 3309.4 hectares, high levels of food production were achieved and almost all types of products were increased. However, in 20 years, production has only increased significantly compared to the base year. Potatoes and melons, as well as melons and watermelons, grew by about 310 percent. The lowest growth rates were observed in wheat and grape cultivation, at 139% and 188%, respectively.

Uzbekistan is a fast-growing country with a population of more than 34 million, growing at an annual rate of about 1.92 % [24]. Demographic indicators such as population growth, longevity and age distribution, urbanization and migration have led to significant changes in the food system and increased demand for food.

Trends in the reduction or expansion of food security in Central Asia also depend on the situation of migrants and migrants. Due to low incomes, labor migration in Uzbekistan remains high. However, in recent years, the level of migration has created new jobs in the country

decreased as a result. According to the International Organization for Migration (IOM), the main destinations for labor migrants in Uzbekistan are Russia, Kazakhstan, the United Arab Emirates, Turkey and the Republic of Korea.

In Uzbekistan, where the risk of famine was high in the early years of independence almost 30 years ago, our analysis shows that in recent years the level of hunger has been much lower and continues to decline, and in recent years among the countries of the world approached the twenties with the best result. It should also be noted that Uzbeks have a good knowledge of healthy eating. They mainly consume fatty foods, breads and pastries based on their traditional diets [32]. One of the main factors for this is the low income of the population, on the other hand, it is due to the mentality and traditions of the population. which of course limits the use of nutritious and varied foods that ensure a healthy diet.

Conclusion

In the early years of Uzbekistan's independence, food security was a major challenge, but for 28 years it has achieved significant results in food security. Uzbekistan has become not only a self-sufficient country, but also an exporter of wheat, vegetables, and fruits to other neighboring countries. Uzbekistan Food Security Self-sufficiency:

- **First**, the diversification of food production and consumption has recently become a matter of concern, requiring an increase in food production, which requires adequate solutions to the food supply problem.





- **Second**, there are problems with food security due to the low incomes of the population and the high cost of food that people need due to the high cost of food.
- **Third**, there are challenges in ensuring food security, as well as in ensuring that food-producing farms, enterprises, and companies meet international quality standards (ISO 9000).
- **Fourth**, there are many serious problems in improving the infrastructure of agricultural enterprises and farms, especially in the harvesting, transportation, storage, processing, and delivery of fresh produce to consumers.
- **Fifth**, there are problems with proper nutrition, knowledge, and skills in using the right foods.

In recent years, the new government has been working hard to ensure food security and prevent food shortages in the country. Agricultural machinery and enterprises are being radically modernized and new equipment and technologies are being used. In order to increase the efficiency of management in agriculture, clusters are being formed to systematize the organization of production processes. As a result, agricultural production is rising sharply. Drainage systems and ditches are being dug to improve the mineralization and fertility of irrigated lands in the country and to prevent soil salinization. In particular, over the past five years, the development of agriculture in our country, which is a key sector in ensuring food security and attracting large investments, is developing rapidly. Given that political, economic, and demographic factors play an important role in changing the country's food and food security, fruits, and vegetables) and not only select the policy of supply but also completely modernize and develop all the infrastructure related to agriculture, logistics, production, storage, and processing. 1. scientific research institutes will need to accelerate the development of new industries, such as genetic engineering, by improving and radically changing their activities to increase crop yields and resilience and create new varieties. As a result, it is recommended that the government conduct more in-depth research to analyze food and food safety. 2. The country should take important political and economic decisions to accelerate the development of the economy, improve inflation and improve the purchasing power of the population, as well as reduce poverty in the country. 3. With an annual population growth of 1.92% and a population approaching 40 million, this will place additional stress on the production and supply of food to the population, so that the government can increase productivity using limited land resources and areas. to achieve high productivity through the use of high technology and innovation. And let's not forget that. it can also be modified to further activate production by reducing food waste and losses.





Based on the analysis of available materials and data, it can be said that Uzbekistan has raised food security to a moderate level, but the issue of achieving food security at the domestic and national levels requires constant attention. It is recommended that the policy be changed from food security to full food security throughout the country.

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