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Research Report

Fostering Resilience for Food Security in Uzbekistan

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Fostering Resilience for Food Security in Uzbekistan

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Executive summary

Since the 1990s and 2000s, Uzbekistan has made considerable progress in improving food security through prioritizing self-sufficiency, crop diversification, and, recently, administrative reforms in the agriculture sector to strengthen this strategic sector of the country. However, growing climate risks, rising food prices, and regional supply disruptions continue to expose the country's food system to new vulnerabilities. This report emphasizes the importance of both household and food system resilience in ensuring sustainable food security, focusing on balanced nutrition and affordable food, and provides practical policy directions and recommendations.

1. Food availability is strong, but access and affordability remain at risk.

Although undernourishment levels are low, many households struggle to afford diverse and nutritious diets. Limited access to healthy food options is the case for rural families and poor urban households, even though many rural families have access to small-scale agriculture. Economic shocks and price fluctuations pose ongoing threats to household food access.

2. Resilience is key to protecting food security during crises.

Households with better infrastructure, adaptive capacity, diverse income sources, and strong community networks are more likely to maintain diverse food access during droughts, price shocks, or supply disruptions. Resilience reduces the need for harmful coping strategies and supports recovery. Household resilience also ensures that sufficient and nutritious food is available to maintain food system resilience in the long term.

3. Policies should focus on building resilience across multiple areas.

Priority actions include investing in rural infrastructure, promoting climate-smart agriculture, expanding social protection systems, and tailoring support to different livelihoods, such as farmers and vulnerable groups.

4. Stronger government and international collaboration are essential.

The Government of Uzbekistan could embed resilience into its national food and climate strategies. International partners can support this by aligning funding, improving data systems, promoting innovation, and scaling up inclusive, community-based solutions.

1. Introduction

The strategic importance of obtaining reliable access to nutritious and affordable food has become a top priority for nations worldwide during this period of growing global volatility. The situation regarding global food insecurity has become highly critical in recent years. Acute food insecurity affected 282 million people across 59 countries as of 2023.¹ Yet, the Central Asian region maintains lower food insecurity, the region shows an estimated undernourishment rate of 3% in 2022, exceeding 2.3 million people.² Yet, the ability of people to afford nutritious diets continues to be a major issue throughout the region, households remain vulnerable to economic and climatic shocks that can undermine food security. In Uzbekistan, the most populous nation in Central Asia, less than 2.5% of Uzbekistan's population is undernourished. The country's child nutrition indicators (wasting and stunting) have improved markedly.³ Uzbekistan's pursuit of food security is a fundamental element of its strategy. Yet, despite its stable situation, Uzbekistan continues to experience food security risks. As the food system of Uzbekistan depends heavily on irrigation and favorable climate conditions, it faces long-term threats from water scarcity and environmental degradation, particularly in the Aral Sea basin.

This report analyses the critical role of food security for Uzbekistan, while discussing how to foster resilience to withstand shocks so that their adverse consequences do not affect food security conditions at the household and system levels. Based on the review, it delivers immediate policy-relevant findings which provide recommendations to strengthen food system resilience in the presence of shocks and stresses. The report consists of six sections. Sections 2 and 3 outline Uzbekistan's food security trends, challenges, and national strategies, and analyzes issues such as climate change and supply disruptions. Sections 4 and 5 examine national strategies, international support, and climate adaptation measures and discuss the concept of resilience and its role in sustaining food security, drawing on empirical findings. Finally, Section 6 provides conclusions and targeted recommendations to enhance long-term food system resilience.

¹ World Food Programme (WFP) (2024) *Global report on food crises 2024*. Rome: World Food Programme. Available at: <https://www.wfp.org/publications/global-report-food-crises-grfc> (Accessed: 30 April 2025)

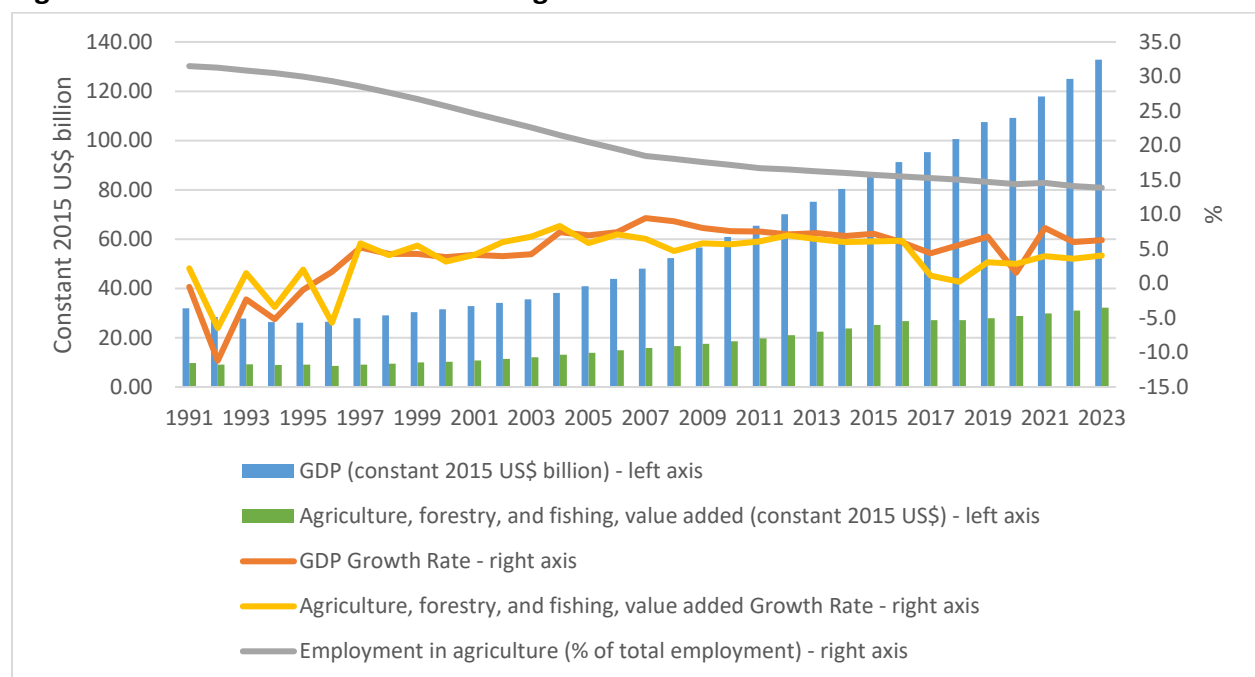
² FAO. (2025) *Europe and Central Asia: To feed the population, sustainable water management is essential, UN report says*. [online] Available at: <https://www.fao.org/newsroom/detail/to-feed-the-population-sustainable-water-management-is-essential/en> [Accessed 30 Apr. 2025].

³ Concern Worldwide, Welthungerhilfe & IFHV. (2024). *Uzbekistan – Global Hunger Index*. [online] Global Hunger Index. Available at: <https://www.globalhungerindex.org/uzbekistan.html> [Accessed 30 Apr. 2025].

2. Food Security in Uzbekistan: Key Indicators and Trends

The agricultural sector in Uzbekistan plays an important role in the national economy, contributing to GDP and employment. In 2023, agriculture accounted for 24.3 per cent of the GDP in Uzbekistan.⁴ In the early 1990s, 31.5 per cent of total employment was in the agriculture sector, while in 2023, this number declined to 13.9 per cent (Figure 1).⁵ Agricultural value-added activities, such as food processing, textile manufacturing from cotton, and horticulture packaging, have contributed to export diversification and have boosted rural incomes. The sector's growth reflects Uzbekistan's broader strategy of transitioning from raw commodity exports to more refined, market-ready goods, thereby increasing profitability across the agricultural value chain.

Figure 1. Macroeconomic indicators – agriculture



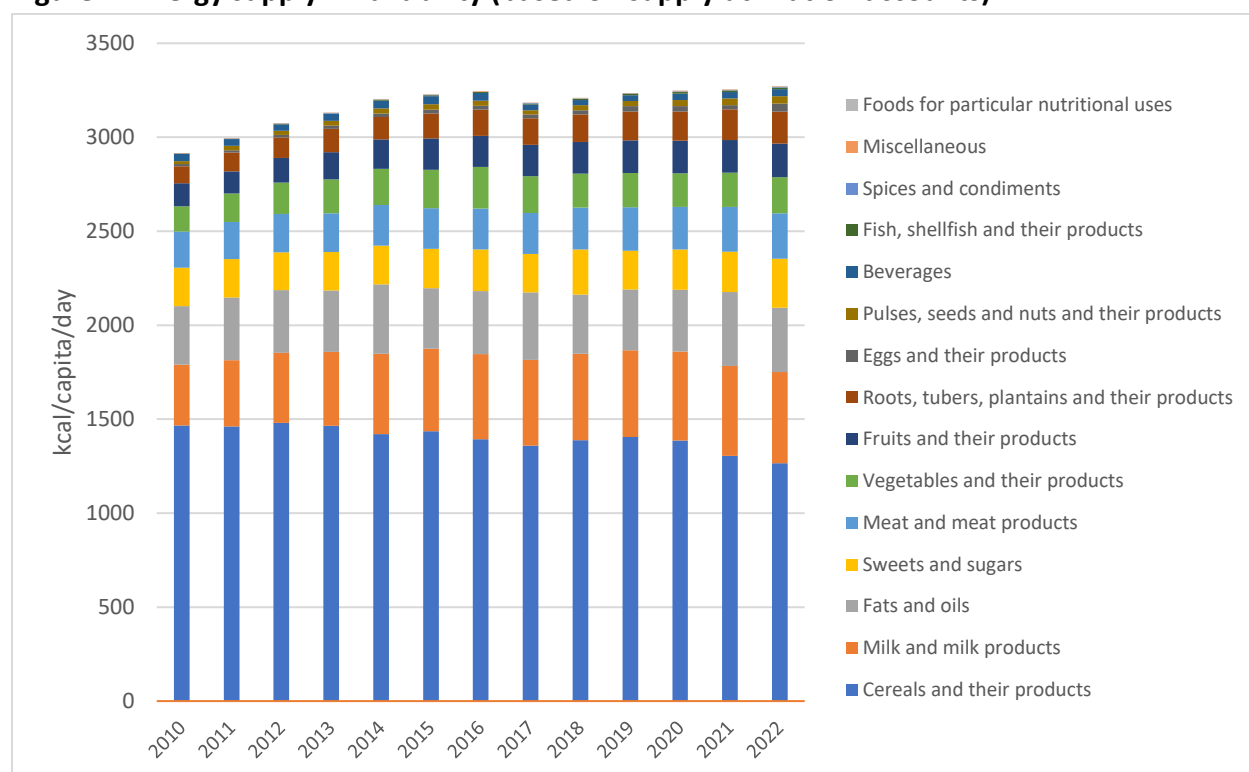
Source: World Bank Development Indicators

Below, we observe Uzbekistan's energy supply (kcal/capita/day) by different food and agricultural products (Figure 2). On average, people consume less cereals and have started consuming more milk products, roots and tubers, eggs, meat, fruits and vegetables. However, the consumption of sweets and sugars has also increased.

⁴ Statistics Agency under the President of the Republic of Uzbekistan. (2024). *Gross domestic product of the Republic of Uzbekistan: Socio-economic situation report 2023*. Tashkent: Statistics Agency.

⁵ World Bank. (2025). *Uzbekistan: World Bank Databank*. [online] Available at: <https://databank.worldbank.org/reports.aspx?source=2&country=UZB> [Accessed 30 Apr. 2025].

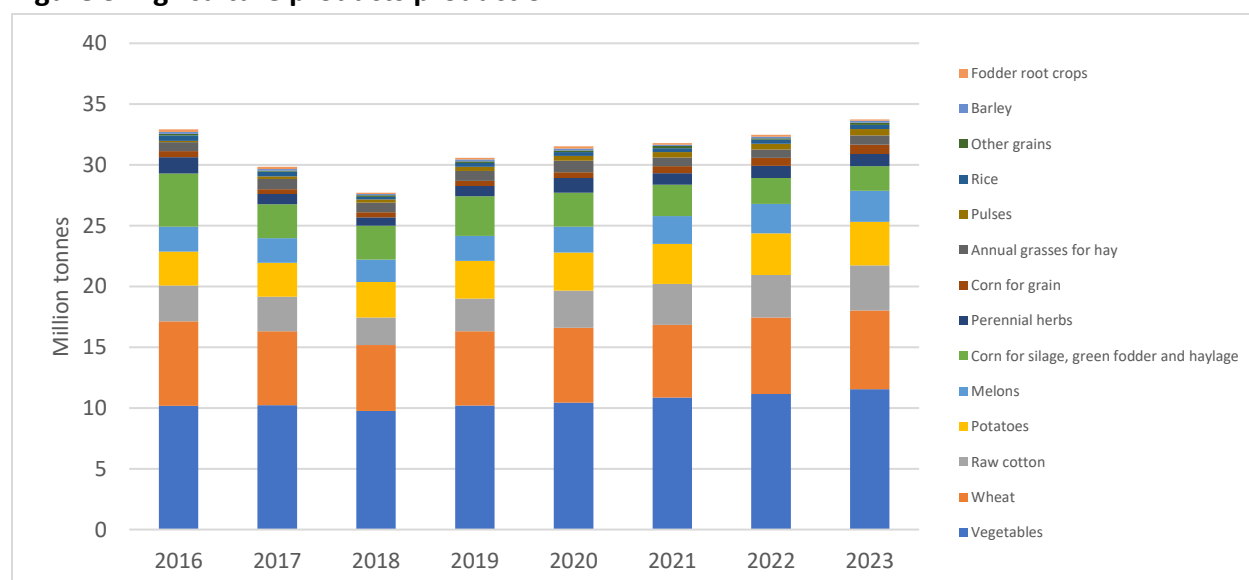
Figure 2. Energy supply. Availability (based on supply utilization accounts)



Source: FAOSTAT

Major agricultural production (measured in tonnes) has been observed for vegetables and wheat, followed by raw cotton, potatoes and melons (Figure 3).

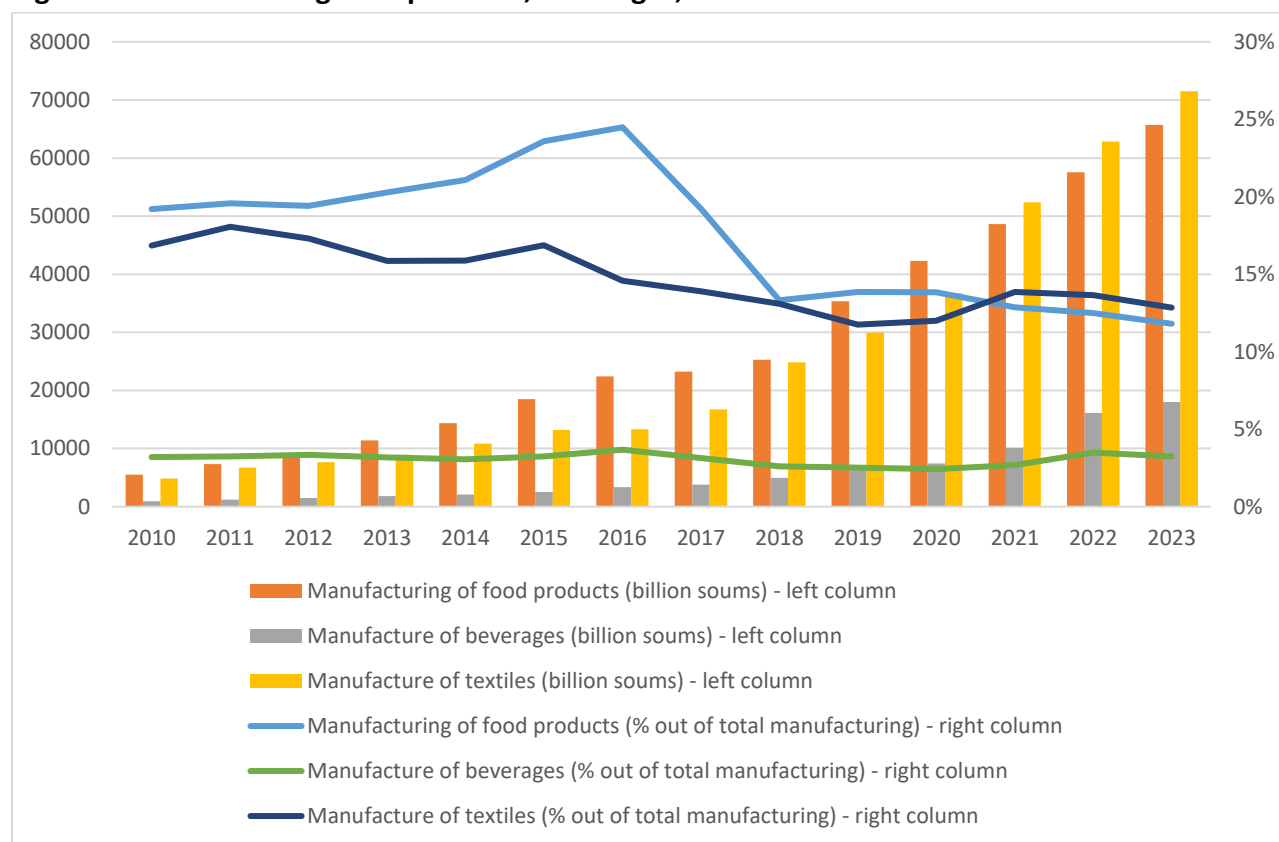
Figure 3. Agriculture products production



Source: Agriculture of Uzbekistan, Committee of the Republic of Uzbekistan on Statistics (2020 and 2024).

While fruit and vegetable consumption increased, we can also observe increased food manufacturing (Figure 4). Imports diversification could also explain fluctuations in food manufacturing. Local food manufacturing and imports of food manufacturing products could have direct implications for a non-healthy diet.

Figure 4. Manufacturing food products, beverages, and textiles

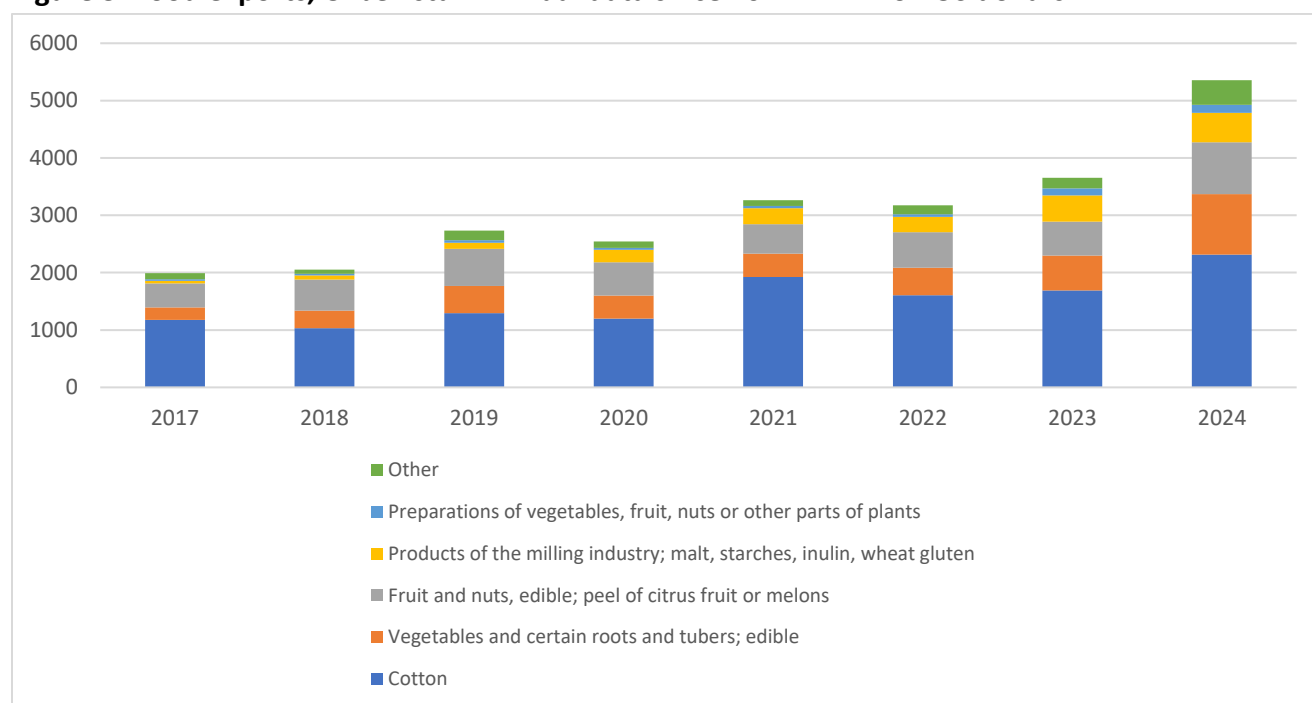


Source: Committee of the Republic of Uzbekistan on Statistics

We report annual and monthly data for food exports and imports to understand long-term and short-term trends of agricultural and food product dynamics. Agricultural and food exports from Uzbekistan demonstrate a robust upward trend, with strong seasonal peaks during summer and autumn⁶. Fruits and vegetables are the dominant export commodities (Figure 5).

⁶ Please refer to the Appendix to see monthly data on food exports and imports.

Figure 5. Food exports, Uzbekistan. Annual data since 2017 in million US dollars



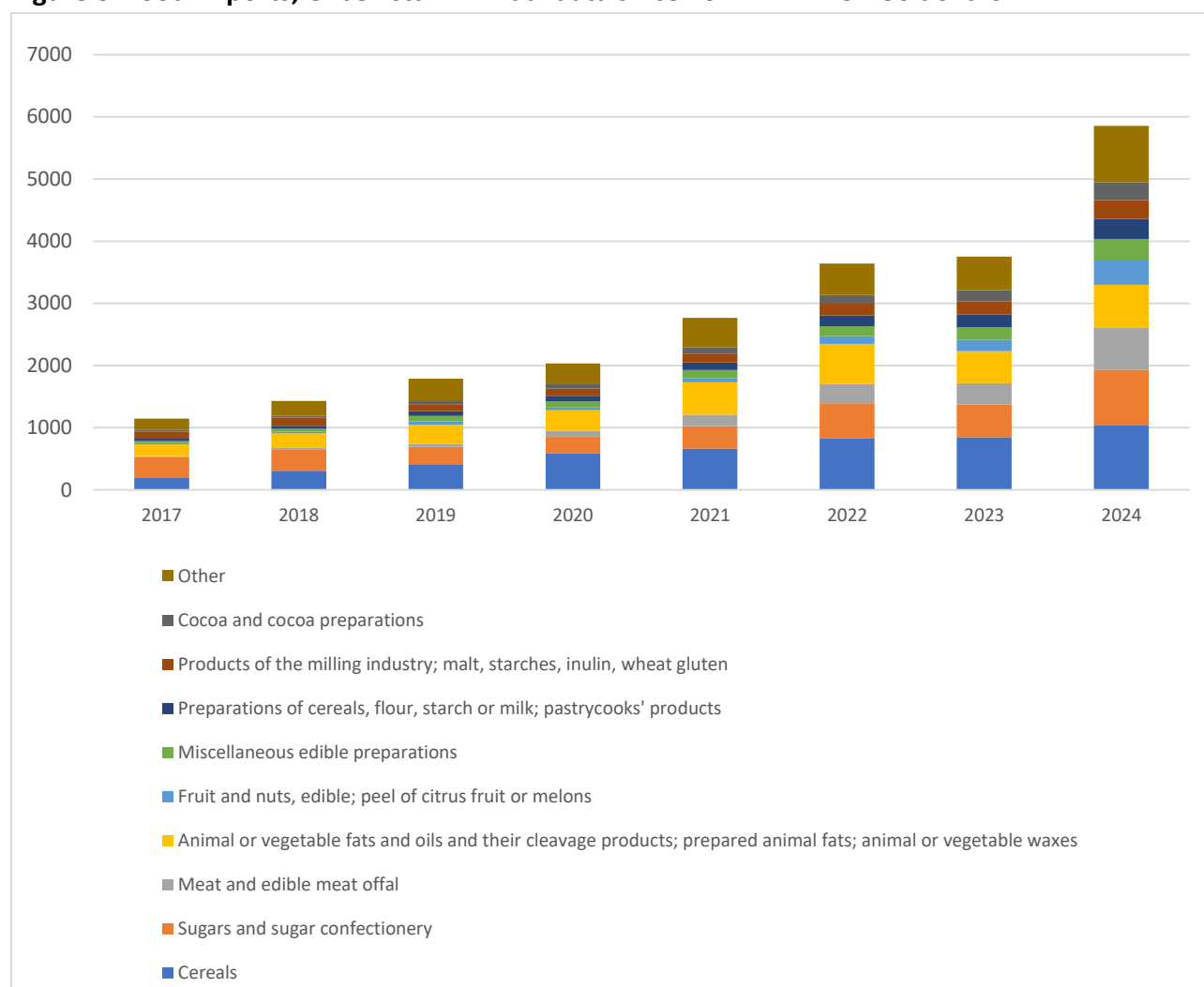
Source: UN Comtrade

We also include cotton exports to highlight Uzbekistan's agricultural dependence on this commodity. The emphasis on cotton production has implications for food security, with the region facing growing water shortages. For example, between 2023 and 2024, nearly half of Uzbekistan's harvested area was dedicated to cotton production⁷. Agricultural export growth offers foreign exchange earnings and rural employment benefits. However, seasonality exposes exporters to price volatility, affecting agricultural production and consumption. Investments in storage, processing, and market diversification can stabilize export revenues.

Food imports have steadily increased Figure 6, showing less seasonal fluctuation compared to exports (Figure A2 in the Appendix). This trend reflects efforts to diversify food supplies and support industrial food processing but also raises concerns over external supply dependency.

⁷ Bilal, M., Mirkasimov, B., Asfaw, E.B., Djanibekov, N., Useinov, A., Rashitova, N., Rajabova, S. & Abduvalieva, N. (2024). *Potential of crop diversification to address the hidden costs of major crop value chains in Central Asia – Background paper for The State of Food and Agriculture 2024*. Rome: Food and Agriculture Organization of the United Nations. Available at: <https://openknowledge.fao.org/server/api/core/bitstreams/aed944d-811c-44cf-9bdd-291a291d8340/content> [Accessed 30 Apr. 2025].

Figure 6. Food imports, Uzbekistan. Annual data since 2017 in million US dollars

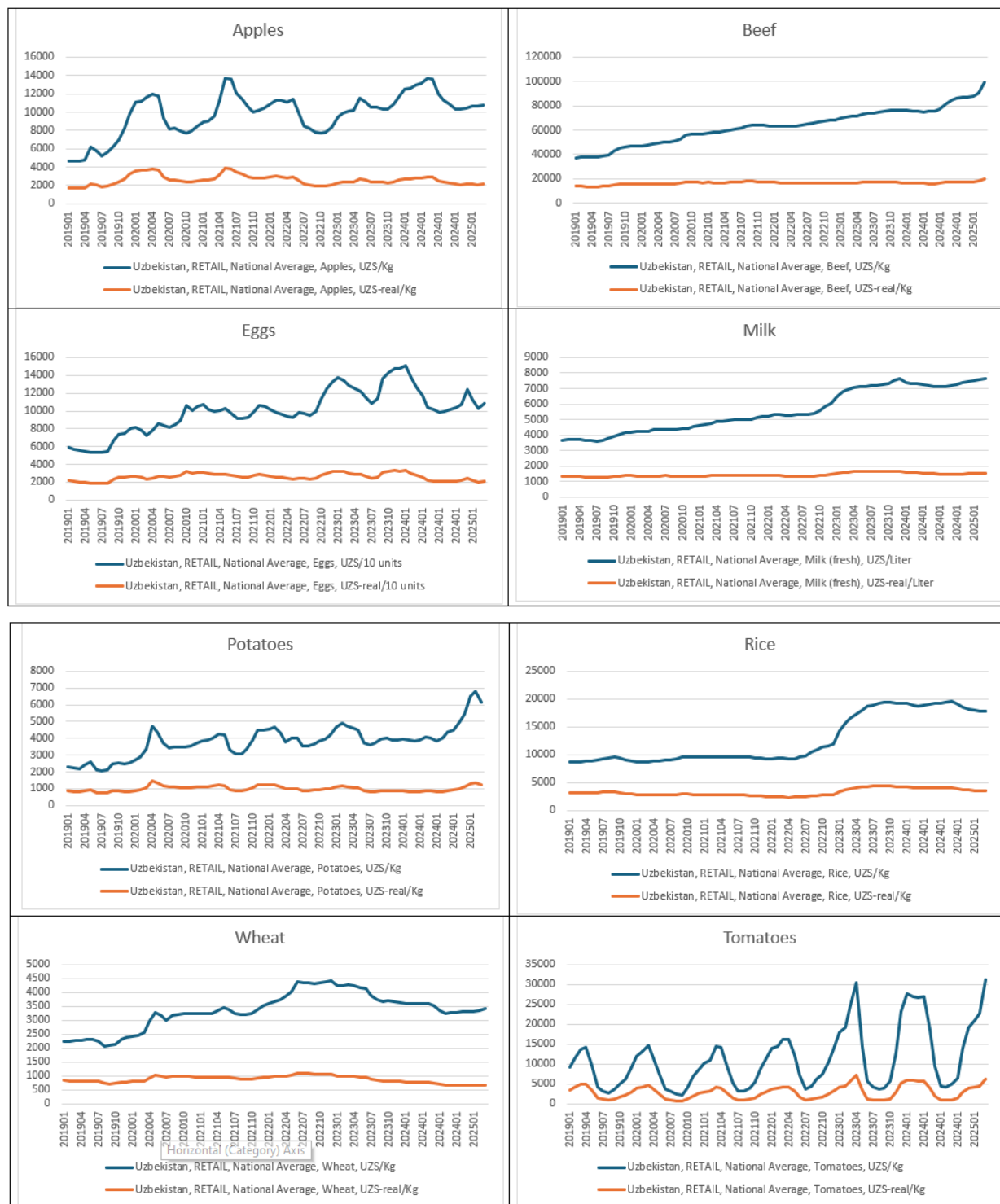


Source: UN Comtrade

Domestic price monitoring data from FAO's FPMA tool shows increases in the prices of most selected commodities (Figure 7). The price increases are mainly expressed in nominal value, while real prices are constant. Price increases could be explained by increasing prices for fuel and energy resources, exchange rate fluctuations, and rising prices for utilities; moreover, they could be exacerbated by global shocks (e.g., the COVID-19 pandemic and regional supply chain disruptions).

Uzbekistan has maintained a stable food energy supply and rapidly expanded its agricultural exports in recent years. Uzbekistan's food security is anchored in domestic agricultural production and dynamic agricultural trade growth. However, increasing price levels and rising import reliance expose the system to socio-economic and external vulnerabilities. Addressing affordability through inclusive policies and building resilient food supply systems is essential for sustainable food security.

Figure 7. Food prices of selected commodities in nominal and real UZS

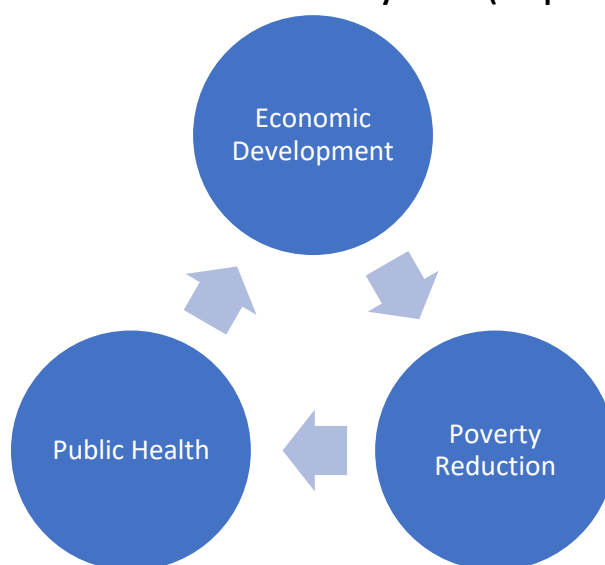


In short, Uzbekistan has made progress in strengthening food availability through growing domestic production and imports, yet challenges remain. Employment in agriculture has declined, and nearly half of the arable land remains dedicated to cotton, which limits diversification. Food imports are rising steadily, pointing to growing dependence on external markets, while domestic food prices are increasing, posing a risk to affordability for low-income households.

3. Food Security Challenges in Uzbekistan

Food security stands as a fundamental strategic policy matter. Among other dimensions, public health and socio-economic development depend on food security. It has a direct impact on poverty reduction, inequality, and rural development. For decades, food self-sufficiency and affordability have been recognized as top priorities of the country's agricultural policy. The government prioritized self-sufficiency in staples like wheat, invested in agriculture, and reformed food policies. Yet, there are several structural challenges for Uzbekistan's resilient food systems.

Figure 8. Socio-economic dimensions of food security nexus (simplified)



Source: Authors' depiction

Shocks and Structural Challenges

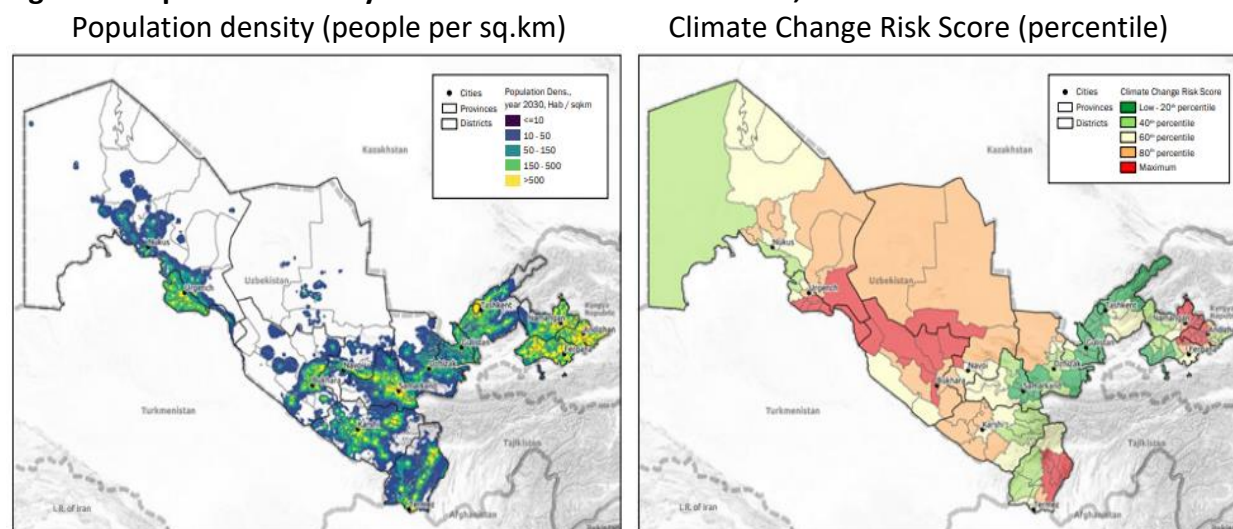
Like many countries, the resilient food system of Uzbekistan is vulnerable to shocks and risks that can disrupt production and access to food. The risks can be interconnected and include climate change, land degradation and disruptions in the supply chain, both globally and locally. Understanding these threats is crucial for building a resilient food system.

Climate change and water stress. The changing climate has already started affecting Uzbekistan through hotter summers, shifting precipitation patterns, and more frequent extreme droughts.⁸ The country faces severe water shortages. The population and agriculture of Uzbekistan depend heavily on two rivers, the Amu Darya and the Syr Darya, which have experienced a 20 per cent

⁸ United Nations Economic Commission for Europe (UNECE). (2024) *National State of the Environment Report: Uzbekistan*. Available at: <https://unece.org/sites/default/files/2024-02/uzbekistan-state-of-the-environment-en.pdf> (Accessed: 30 April 2025).

loss in volume in the past few decades.⁹ Around 80 percent of its water resources come from and cross through neighboring countries, which necessitates regional cooperation.¹⁰ Such transboundary water sharing creates vulnerabilities in the case of irresponsible and excessive use by different countries in the region.

Figure 9. Population density and climate risks in Uzbekistan, 2030



Source: World Bank, 2024¹¹.

The increasing temperatures cause water to evaporate faster while reducing snowpack levels, which puts pressure on irrigation system. According to the World Bank, by 2050, water resources are projected to decline in the Syr Darya (by 5 percent) and the Amu Darya (by 15 percent) as rivers recede.¹² Uzbekistan stands in 25th position among nations for water withdrawal stress, which shows its high level of water risk.¹³ The country dedicates 90% of its surface water

⁹ Stronski, P., 2025. *Water insecurity in Central Asia: The imperative for regional and international cooperation*. [online] Atlantic Council. Available at: <https://www.atlanticcouncil.org/wp-content/uploads/2025/02/Water-insecurity-in-Central-Asia.pdf> [Accessed 19 May 2025].

¹⁰ Pohl, B., Kramer, A., Hull, W., Blumstein, S., Abdullaev, I., Kazbekov, J., Reznikova, T., Strikeleva, E., Interwies, E. and Görlitz, S., 2017. *Rethinking water in Central Asia: The costs of inaction and benefits of water cooperation*. [online] adelphi and CAREC. Available at: <https://carececo.org/Rethinking%20Water%20in%20Central%20Asia.pdf> [Accessed 19 May 2025].

¹¹ World Bank, 2024. *Uzbekistan Climate Adaptation and Resilience Assessment*. [online] Green Policy Platform. Available at: <https://www.greenpolicyplatform.org/sites/default/files/downloads/resource/UZBEKISTAN%20CLIMATE%20ADAPTATION%20AND%20RESILIENCE%20ASSESSMENT.pdf> [Accessed 19 May 2025].

¹² World Bank, 2023. *Country Climate and Development Report: Uzbekistan*. Washington, DC: World Bank Group. Available at: <https://www.greenpolicyplatform.org/sites/default/files/downloads/resource/UZBEKISTAN%20CLIMATE%20ADAPTATION%20AND%20RESILIENCE%20ASSESSMENT.pdf> [Accessed 19 May 2025].

¹³ Ministry of Economic Development and Poverty Reduction of the Republic of Uzbekistan, World Bank, and Regional Environmental Center for Central Asia. (2022) *Green Growth and Climate Change in Uzbekistan: Policy Dialogue Series – A Compendium of Proceedings*. Washington, D.C.: World Bank. Available at: <https://documents1.worldbank.org/curated/en/099240007072223752/pdf/P1771080edd66408f0bcd9015de19bc66dc.pdf> (Accessed: 30 April 2025).

resources to agricultural purposes, making food production vulnerable to water availability changes.¹⁴ Most of Uzbekistan's agricultural output by volume originates from irrigated farming, which makes climate-related water shortages a major threat to food security.

Land degradation. The productivity of Uzbekistan's farms suffers from land degradation. The land degradation is strongly connected to climate conditions, previous farming practices and poor water management. According to the World Bank, around 30 percent (13.7 million ha) of land in the country is severely degraded.¹⁵ Large sections of Uzbekistan's lowlands have developed saline soils because of uncontrolled heavy irrigation without drainage systems. Half of Uzbekistan's area equipped for irrigation suffers from soil salinization resulting from human and natural causes.¹⁶ A map of land degradation hotspots displays the composite risk from climate change, land degradation, landslides (and their impact on infrastructure), and population growth, with red areas indicating the greatest risk (Figure 10). To some extent, this results in reduced crop production and field abandonment. Soil erosion and desertification threaten pasture regions and areas surrounding the Aral Sea. The reduction of arable land creates more strain on existing agricultural areas while making it difficult to increase food production to meet population growth. The available arable land per person amounts to 0.12 hectares (1,200 square meters) and continues to decrease because of population growth.¹⁷ The long-term food security depends on the gradual work of protecting and reclaiming arable land.

Food supply disruptions. During COVID-19 and supply chain disruptions due to the Russia-Ukraine conflict, the government observed that external shocks can easily affect the local food market. The country has imported different food products, such as wheat, vegetable oil, sugar, and various fruits during the off-season. Depending on the market conditions, the prices of products can increase in the local market, or there can be shortages in case of a global/regional price hike or a trading country export ban. This was demonstrated in the 2022 wheat crisis (later, the Black Sea Grain Initiative).¹⁸ In early 2022, the Russian export bans on sugar and grains led to panic buying and a sharp increase in prices in Uzbek markets, with sugar prices almost doubling.¹⁹

¹⁴ FAO. (n.d.) *Uzbekistan – SCALA Private Sector Engagement Facility*. Available at: <https://www.fao.org/in-action/scala/scala-private-sector-engagement-facility/uzbekistan/en> (Accessed: 30 April 2025).

¹⁵ World Bank, 2023. *Country Climate and Development Report: Uzbekistan*. Washington, DC: World Bank Group. Available at: <https://www.greenpolicyplatform.org/sites/default/files/downloads/resource/UZBEKISTAN%20CLIMATE%20ADAPTATION%20AND%20RESILIENCE%20ASSESSMENT.pdf> [Accessed 19 May 2025].

¹⁶ Jumaniyazov, I., Juliev, M., Khudaybergenov, Y., Jaksibaev, R., Orazbaev, A., & Amangeldieva, U. (2024) *Analysis of soil salinity monitoring in irrigated areas (in case of Shimbay district, Republic of Karakalpakstan)*. E3S Web of Conferences, 590, 01007.

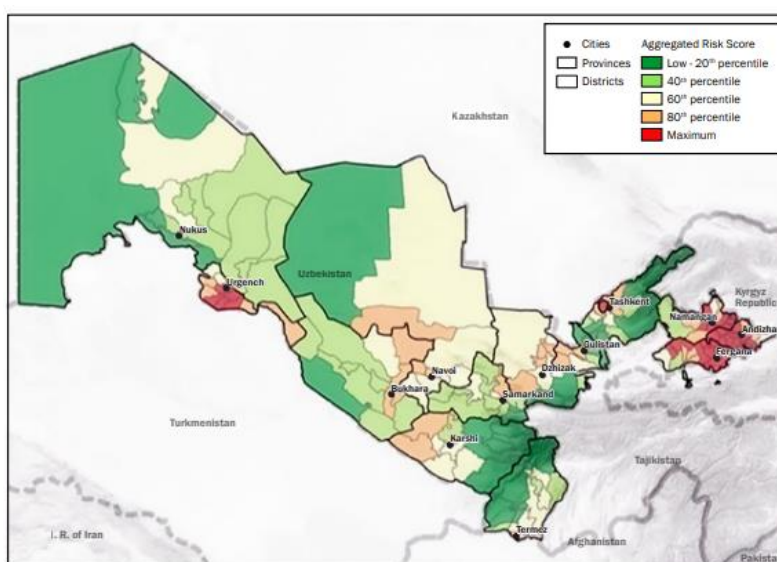
¹⁷ World Bank. (2025) *Arable land (hectares per person) – Uzbekistan*. [online] Available at: <https://data.worldbank.org/indicator/AG.LND.ARBL.HA.PC?locations=UZ> (Accessed: 30 April 2025).

¹⁸ Kuhla, K., Puma, M.J. & Otto, C. (2024) *International cooperation was key to stabilize wheat prices after the Russian Invasion of Ukraine*. Communications Earth & Environment, 5, Article 481. Available at: <https://www.nature.com/articles/s43247-024-01638-7> (Accessed: 30 April 2025).

¹⁹ CABAR.asia. (2022) *Uzbekistan: Food Security Under Strict Control During Crisis*. Available at: <https://cabar.asia/en/uzbekistan-food-security-under-strict-control-during-crisis> (Accessed: 30 April 2025).

The government reacted quickly by putting in place measures to ensure that food is accessible, and that inflation is controlled. These included creating strategic reserves such as 250,000 tons of sugar, reducing transport tariffs, and offering tax incentives to food importers. Although Uzbekistan produces most of its wheat, it still needed to import about 1.5 million tons that year and had to pay more for it because of the high world prices.

Figure 10. Land degradation hotspots: composite map of risk from climate change, land degradation, and population pressures, by district in Uzbekistan, 2041-2050



Source: World Bank, 2024

In addition to global supply chain disruption, the country can face disruptions in the supply of inputs from outside used in food production. The global supply of mineral fertilizer and price increase has been an issue in many countries across the world. For instance, global fertilizer prices surged by over 30% in 2022 due to supply disruptions and the energy crisis, significantly impacting farm profitability worldwide.²⁰ This has affected the productivity and profitability of farming around the world. Uzbekistan remains vulnerable to such external shocks due to its reliance on imported inputs and energy-intensive farming practices. Elevated fuel and electricity costs further threaten key agricultural operations, including irrigation, mechanization, and greenhouse activities, underscoring the need for resilient infrastructure and energy-efficient solutions.

²⁰ World Bank. (2023). *Fertilizer prices expected to remain higher for longer*. [online] World Bank Blogs. Available at: <https://blogs.worldbank.org/en/opendata/fertilizer-prices-expected-remain-higher-longer> [Accessed 12 May 2025].

4. National Strategies and International Support

Uzbekistan has established a robust policy and legal framework to develop the agriculture sector and secure its food supply. A cornerstone is the Agriculture Development Strategy 2020–2030, adopted in 2019, which lays out long-term reforms to modernize agriculture and ensure a stable food supply.²¹ This strategy phases out old state controls, especially the quota and procurement system for cotton and wheat, in favor of market-driven production and crop diversification. Additionally, the government implemented the Development Strategy of New Uzbekistan for 2022–2026. Within this strategy, the government has established a program to reach upper-middle-income status by 2030. The government continues to prioritize sustainable rural development through its goal of achieving at least 5% annual sector growth and doubling farmers' incomes.²² The following policies outline Uzbekistan's agricultural reforms from recent years, together with its present-day strategic plans for sector development and food security achievement.

Land and market reforms. Uzbekistan's top priorities in agriculture policy have been to ensure secure land tenure and liberalizing agricultural markets. Until 2020, Uzbekistan operated a state procurement system where farmers were required to produce fixed quotas of cotton and wheat for the state at set prices.²³ From 2020 to 2021, the state procurement quotas for wheat and cotton production were eliminated. As a result, farmers could make planting decisions based on market demand. Through this reform, the government aimed to transition from raw cotton exports to high-value textile exports and expand its cotton export markets. During this reform, the government transformed cotton-textile supply chains into clusters that operated as vertically integrated cotton-textile enterprises.²⁴ Early evidence indicates that cotton-textile clusters increased the yields, but the reform did not significantly affect the position of the individual farms.²⁵ The market reforms of Uzbekistan now actively include family-based smallholders, *dekhqan* farms, which operate on only 20% of arable land yet generate more than 70% of

²¹ UzDaily. (2019) *The Strategy for the Development of Agriculture for 2020–2030 was approved*. Available at: <https://www.uzdaily.uz/en/the-strategy-for-the-development-of-agriculture-for-2020-2030-was-approved/> (Accessed: 30 April 2025).

²² President of the Republic of Uzbekistan. (2022) *Shavkat Mirziyoyev: 'We Shall Realize All Reforms and Actions Together with Society'*. Available at: <https://www.president.uz/en/lists/view/4942> (Accessed: 30 April 2025).

²³ World Bank. (2022). *Uzbekistan: Review of Agriculture Strategy Implementation in 2020 and 2021*. Washington, D.C.: World Bank. Available at: <https://documents1.worldbank.org/curated/en/099235005262218526/pdf/P1777350ef54ee03f0abb302afebb4015e9.pdf> [Accessed 12 May 2025].

²⁴ Babadjanov, J. and Petrick, M. (2025) *Uzbekistan's cotton clusters in the context of the industrial policy debate*. EconStor Open Access Articles and Book Chapters, 66(3), pp. 354–383.

²⁵ Asian Development Bank. (2024) *Accelerating Private Sector and Green Transformation in Uzbekistan*. Available at: <https://www.adb.org/sites/default/files/publication/1027176/private-sector-green-transformation-uzbekistan.pdf> (Accessed: 30 April 2025).

agricultural production.²⁶ The remaining irrigated arable land is primarily managed by larger individual farms and agricultural enterprises. *Dekhqan* farms maintained their focus on livestock and horticulture but received less state support than larger farms. The government has implemented new policies which aim to enhance land availability, market participation, and credit services for these groups.²⁷ The 2021-2022 legislative period brought forth new leasing regulations, which enabled *dekhqans* to rent up to 10 hectares of land from larger farms, and vulnerable rural families could obtain 1-2-hectare plots from underutilized land that was previously used for cotton and wheat production by larger farms. The online land auction system provided clear distribution methods that made 100,000 hectares available for leasing, and an additional 20,000 hectares became available for lease at the end of 2022.²⁸

Sustainable agriculture for climate change. Due to environmental issues, the agricultural sector in Uzbekistan implements environmental sustainability as its core strategy. The government recognizes that conventional irrigation methods and crop selection patterns have become unsustainable because agriculture requires more than 90% of the nation's freshwater supply.²⁹ Uzbekistan's Green Economy Strategy to 2030 integrates agriculture into its framework to achieve both productivity targets and environmental protection. A comprehensive policy framework exists to decrease environmental emissions while boosting resource utilization and strengthening agricultural system resilience against climate change impacts. The government aims to invest \$118.5 million in the mechanization and modernization of its agricultural sector by 2026.³⁰

²⁶ Asfaw, E. (2020) *Dehqan Farms: Uzbekistan's Underserved 70 Percent*. CPRO Policy Brief 2020-08. Tashkent: Center for Policy Research and Outreach, Westminster International University in Tashkent. Available at: <https://cpro.wiut.uz/cpro-policy-brief-2020-08-2> (Accessed: 30 April 2025).

²⁷ UNDP. (2025) *Landmark public-private insurance scheme for Smallholder Horticulture Farmers launched in Uzbekistan*. Available at: <https://www.undp.org/geneva/press-releases/landmark-public-private-insurance-scheme-smallholder-horticulture-farmers-launched-uzbekistan> (Accessed: 30 April 2025).

²⁸ Qalampir.uz. (2022) *Land for farming will be leased to residents for 30 years*. Available at: <https://qalampir.uz/en/news/de%D2%B3k-onchilik-uchun-yerlar-a%D2%B3oliga-30-yilga-izharaga-beriladi-68376> (Accessed: 30 April 2025).

²⁹ Daryo.uz. (2023) *Uzbekistan uses 90% of drinkable water for agricultural purposes amid concerns about water shortages in CA*. Available at: <https://daryo.uz/en/2023/08/04/uzbekistan-uses-90-of-drinkable-water-for-agricultural-purposes-amid-concerns-about-water-shortages-in-ca> (Accessed: 30 April 2025).

³⁰ Ten, A., 2024. *Uzbekistan to allocate \$118.5 million for agricultural mechanisation*. Kursiv Media, 16 December. Available at: <https://uz.kursiv.media/en/2024-12-16/uzbekistan-to-allocate-118-5-million-for-agricultural-mechanisation/> [Accessed 19 May 2025].

Table 1. Objective indicators of the Agriculture Development Strategy

No.	Result indicators	Baseline (2018)	Target in 2021	Target in 2025	Target in 2030
1. Ensuring food security of the population					
1.1	Increase in average wheat yield, tons/ha	4.1	6.0	7.0	7.5
1.2	Increase in average milk yield, kg/cow/year	2,320	2,700	3,100	3,500
1.3	Increase in share of feed crops in arable land, %	7.0	10.0	12.0	15.0
2. Creating an enabling environment for agribusiness and value chain development					
2.1	Increase in share of agri-food export generated by farm cooperation and clusters, %	2.0	15.0	23.0	30.0
2.2	Creation of promotion of Uzbek brands, number of products	0	5.0	20.0	40.0
2.3	Improved position of Uzbekistan in World Bank's Global Logistics Performance Index, place	99.0	96.0	89.0	79.0
2.4	Increase in share of processed products in agri-food export, % of total	25.0	30.0	35.0	40.0
2.5	Increase in share of labor force in food processing and light industries, % of labor force	6.0	10.0	15.0	20.
3. Decreasing the role of state in agriculture and increasing investment opportunity					
3.1	Improved position in the WB's Enabling the Business of Agriculture	No rating	Established	Improved by 5 points	Improved by 10 points
3.2	Increase in investments for agri-food sector, US\$ million	650	20% increase	40% increase	80% increase
4. Effective use of natural resources and environmental protection					
4.1	Decrease in land assigned for state quota production, million ha	2.5	0.9	0	0
4.2	Increase in share of farmers using Good Agricultural and Environment Practices and/or other international management practices, % of total	2.0	5.0	10.0	20.0
4.3	Increase in agricultural land under water-efficient	1.7	10.0	20.0	32.0

	technologies, % of agricultural land				
4.4	Decrease in share of land with high salinity, % of agricultural land	45	43	41	37
4.5	Increase in share of land with forest cover, million ha	3.2	3.8	4.0	4.2
4.6	Increase in land share under nut trees, ha	11.634	12.797	13.379	13.728

Source: Presidential Decree on “Agriculture Development Strategy of Uzbekistan for 2020-2030”

The priority focuses on irrigation efficiency, stemming from 70% of irrigated water is lost through outdated canal systems and evaporation.³¹ The government plans to expand drip irrigation coverage across 1 million hectares throughout the next decade. For this, the government provides financial incentives for drip irrigation, which will help preserve 7 billion cubic meters of water. Implementing this single measure will conserve 7 billion cubic meters of water per year while boosting crop production by 20–40%. The water conservation efforts support a crop diversification plan which moves away from cotton and wheat cultivation toward horticulture that thrives in arid climates and promotes soil health. These efforts are highlighted in the new national program designed to adapt agriculture to climate change.³²

Crop diversification, export and subsidies. As mentioned earlier, the agricultural sector of Uzbekistan has moved away from its historical concentration on cotton and wheat production. The 2016–2020 reform plan reduced 170,500 hectares (13%) in cotton and wheat cultivation areas, enabling the development of high-value crops. The agricultural transformation also enables livestock farming development. For this, the government launched subsidized credit programs through state banks and a special fund for Agricultural Development to encourage diversification by offering 7% interest loans, lower than market rates.³³ The efforts receive financial backing from ADB, World Bank, and IFAD credit lines. Along with loans, the government also provides grants for agricultural modernization projects that include buying equipment, installing drip irrigation systems, and importing high-yield livestock breeds. The main outcome of these efforts has been the rapid increase in horticultural export volumes. The total value of

³¹ Daryo, (2023). *Shavkat Mirziyoyev calls for urgent action on inefficient water use in agriculture*. Daryo News, 21 October. Available at: <https://daryo.uz/en/2023/10/21/shavkat-mirziyoyev-calls-for-urgent-action-on-inefficient-water-use-in-agriculture> (Accessed 19 May 2025).

³² Daryo.uz. (2024) *Uzbekistan to attract \$294mn for adapting agriculture to climate change*. Available at: <https://daryo.uz/en/2024/05/10/uzbekistan-to-attract-294-mn-forprogram-adapting-agriculture-to-climate-change> (Accessed: 30 April 2025).

³³ World Bank. (2021) *Uzbekistan: Second Agricultural Public Expenditure Review*. Washington, D.C.: World Bank. Available at: <https://documents1.worldbank.org/curated/en/381251635752865696/pdf/Uzbekistan-Second-Agricultural-Public-Expenditure-Review.pdf> (Accessed: 30 April 2025).

Uzbekistan's fruit and vegetable exports was \$2.3 billion during 2018.³⁴ Uzbekistan exported 1.4 million tons of fruits and vegetables worth \$1 billion between January and September 2024, representing a 7.6% annual volume increase.

In summary, recent legal changes and strategies down to on-the-ground programs in agriculture underpin Uzbekistan's drive toward national food security. Through the multifaceted framework of market reforms and investment in agriculture in collaboration with international organizations, the government seeks to achieve self-sufficiency in key foods and keep prices affordable. Continuous monitoring of food security indicators and periodic strategy updates are institutionalized so policies can be adjusted to address emerging challenges, such as climate threats or global price shocks.

Table 2. Work of international organizations on food security in Uzbekistan, 2020-2023³⁵

Organization	Key Activities	Focus Areas
FAO	Supported food policy design, modernized food safety laws, improved irrigation, seed variety, pest control, technical assistance and training.	Food safety, sustainable agriculture, resilience, capacity building
WFP	Expanded national school meals program, advised on nutrition standards, supported supply chains, emergency preparedness, and food fortification.	Nutrition, school feeding, crisis response, supply chains
World Bank	Financed Agriculture Modernization Project (\$500M), horticulture/livestock projects, policy support (subsidies, crop insurance, irrigation).	Agricultural modernization, value chains, rural livelihoods, analytical support
IFAD	Invested \$167M in rural development, promoted climate-smart agriculture, linked smallholders to markets, and built dairy/horticulture value chains.	Smallholder support, climate-smart farming, rural incomes, market access
UNDP	Mainstreamed climate adaptation, influenced policy and legislation, and piloted projects on climate-smart irrigation, renewable energy, and women's livelihoods.	Climate resilience, green agriculture, gender, and sustainable food systems

³⁴ World Bank. (2022) *Uzbekistan: Review of Agriculture Strategy Implementation in 2020 and 2021*. Washington, D.C.: World Bank. Available at: <https://documents1.worldbank.org/curated/en/0992335005262218526/pdf/P1777350ef54ee03f0abb302afebb4015e9.pdf> (Accessed: 30 April 2025).

³⁵ The projects mentioned above may not fully capture all the activities undertaken by these organizations in Uzbekistan.

5. Resilience and Food Security: Key Findings

Food security is not only about having enough food, but also about maintaining consistent access to it, especially during times of crisis. With the changing climate, economic uncertainty, and political instability, the modern world needs more than a food supply to achieve food security. Systems and households need to demonstrate resilience when disruptions occur. The UN Sustainable Development Goals (SDGs) and other global agendas now recognize resilience as a fundamental element of food security discourse because it stands at the core of sustainable development.

The Nexus of Resilience and Food Security

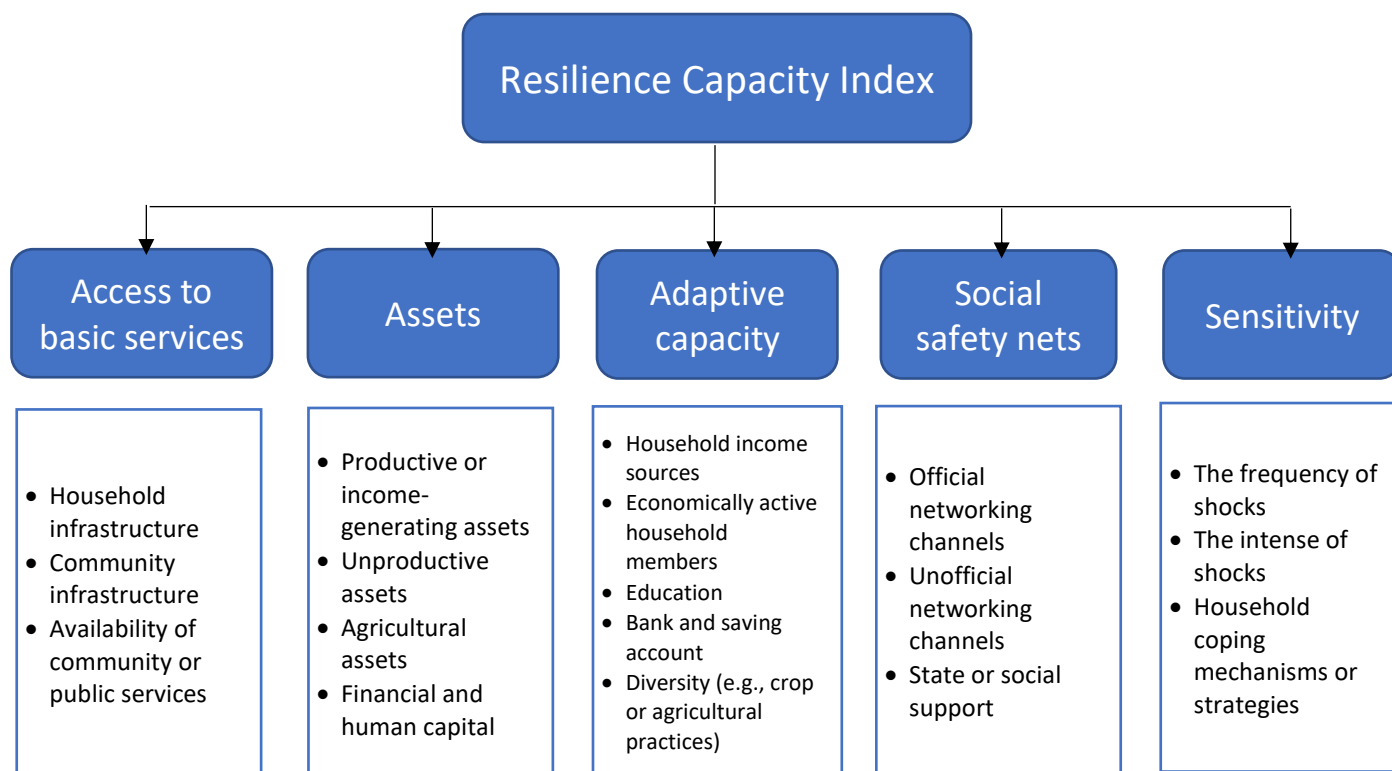
Resilience refers to the ability of people and households to predict, absorb, adjust to, and recover from shocks without jeopardizing their food security.³⁶ The United Nations Sustainable Development Goals (SDGs) establish resilience as an essential development priority beyond its role as an important coping strategy. In simple terms, resilience is about how well households can “bounce back” after a crisis. For example, a resilient household is more likely to maintain stable food consumption or quickly return to a secure state during a drought or market shock. Although the importance of resilience is widely agreed upon, its measurement remains difficult. For this reason, the FAO developed a method, called Resilience Index Measurement and Analysis (RIMA). FAO’ RIMA framework demonstrates resilience as a multi-dimensional capacity, which includes several pillars as a measure of resilience. In the RIMA approach, the following pillars are measured:

- **Access to basic services (ABS):** This pillar represents a household’s access to basic infrastructure and livelihood facilities (e.g., health services, education, clean water and hygiene) available in the community.
- **Assets (AST):** This pillar represents productive and unproductive assets available in the household. This pillar is one of the alternative ways to define household well-being and poverty.
- **Adaptive capacity (AC):** This pillar represents the ability to adapt to the changing environments in which the household maintains its livelihood.
- **Social safety nets (SSN):** This pillar is one of the main components of resilience, defining formal and informal transfers in the household. In this case, social networking and different state safety nets also strengthen household safety nets.
- **Sensitivity (S):** This pillar is mainly related to the risks and shocks that occur in the household and community.

³⁶ FAO. (2016) *Resilience Index Measurement and Analysis II (RIMA-II): Analyzing Resilience for Better Targeting and Action*. Rome: FAO.

The RIMA framework helps us measure resilience in a structured and consistent way. Using the various dimensions above, governments and organizations can identify which households or communities are most vulnerable, and design targeted policies and programs that improve their long-term ability to cope. In short, RIMA provides a practical tool to support evidence-based policymaking in food security and development planning.

Figure 11. RIMA framework



Source: FAO, 2016

When shocks occur, households often resort to coping strategies, short-term actions taken to deal with immediate food shortages or income loss. These can include skipping meals, borrowing food or money, selling livestock, or seeking temporary work. While useful in the short term, these strategies can have damaging long-term consequences, such as asset depletion or increased debt, ultimately undermining the household's ability to recover. In contrast, resilience serves to reduce the reliance on such coping mechanisms. A household with strong resilience can maintain consumption levels and avoid harmful trade-offs, leading to more stable and sustainable food security outcomes.

Research shows that resilience has direct positive effects on food security. The RIMA framework and statistical models show that households with better resilience levels through service access, asset ownership, and social network connections achieve superior food security through diverse

diets and stable consumption.³⁷ The state of resilience transforms throughout time, particularly when prices rise, or severe weather events occur. The Resilience Capacity Index (RCI) serves as a tool to monitor how resilience evolves throughout different periods. Research indicates that repeated droughts and market disruptions lead to resilience deterioration but adopting new farming methods and obtaining credit improves resilience.³⁸

Empirical Findings in Central Asia

Across Central Asia, a growing body of evidence confirms that household resilience is a critical factor in securing food access during times of crisis. Studies applying the RIMA framework have shown that when households score higher in key pillars, such as adaptive capacity, access to assets, and basic services, they are more likely to avoid food insecurity and recover quickly from shocks.

The connection between climate shocks and resilience in the Samarkand region, Uzbekistan, is demonstrated through a “resilience paradox”, which shows that households with higher resilience use fewer short-term coping strategies when climate shocks occur.³⁹ The implementation of long-term solutions through improved infrastructure and stable income sources minimizes the need for reactive responses, which results in sustainable food systems. The finding shows that investments in resilience through better infrastructure and secure finance access decrease emergency response needs and create stable food systems.

Households in Tajikistan with higher resilience capacities demonstrated better food expenditure and dietary diversity when facing multiple climate shocks.⁴⁰ The research revealed that households maintained regular food access and sufficient consumption of fruits and vegetables when their resilience score reached higher levels. The research demonstrated that resilience acts as a protective factor because it reduces the adverse effects of external shocks, including price increases and droughts. A research study in Kyrgyzstan identified social capital components, trust and group membership, as essential elements that enhance resilience.⁴¹ The research showed that households with strong social connections achieved higher resilience scores, which helped them absorb shocks while keeping food access available. These findings highlight the importance

³⁷ Ciani, F. and Romano, D., 2014. Testing for household resilience to food insecurity: Evidence from Nicaragua., Haile, D., Seyoum, A. and Azmeraw, A., 2022. Food and nutrition security impacts of resilience capacity: Evidence from rural Ethiopia. *Journal of Agriculture and Food Research*, 8, p.100305.

³⁸ Myeki, V.A. and Bahta, Y.T., 2021. Determinants of smallholder livestock farmers’ household resilience to food insecurity in South Africa. *Climate*, 9(7), p.117.

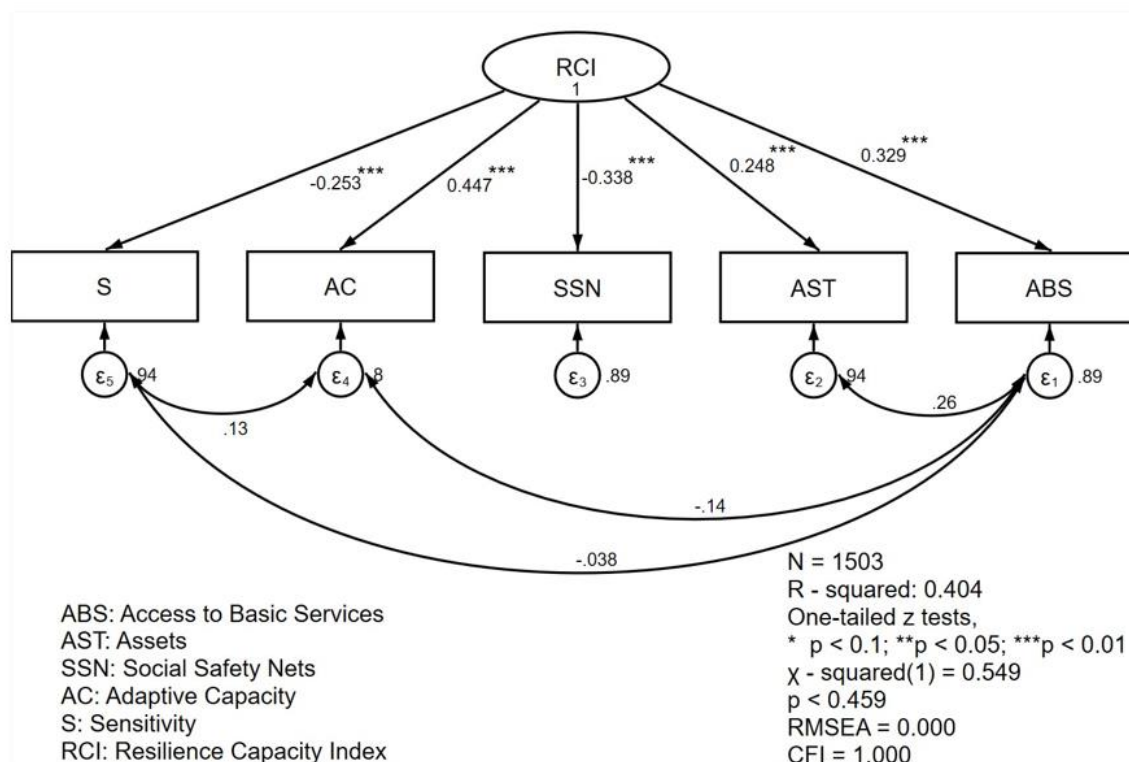
³⁹ Egamberdiev, B., Primov, A. and Babakholov, S., 2025. The Resilience Paradox: A Climate Change Coping Mechanism in the Farm Households from Samarkand Region of Uzbekistan.

⁴⁰ Rajiv, S. and Aliev, J., 2025. *Household resilience and coping strategies to food insecurity: An empirical analysis from Tajikistan*. IFPRI.

⁴¹ Egamberdiev, B., 2024. Social capital effects on resilience to food insecurity: Evidence from Kyrgyzstan. *Journal of International Development*, 36(1), pp.435-450.

of community ties, informal support systems, and collective action in building household-level resilience.

Figure 12. Pillars and resilience capacity index (Central Asia)



Source: Egamberdiev, 2025

Policy Implications: Turning Evidence into Action

Research in Uzbekistan, Tajikistan and Kyrgyzstan shows that resilience is a key driver of household food security, especially in rural and vulnerable communities. Resilient households are more likely to withstand climate and economic shocks, avoid harmful coping mechanisms, and maintain access to nutritious food. These findings provide a few policy recommendations regarding resilience as a long-term strategy for stability:

1. **Invest in long-term resilience.** Policymakers should direct their efforts toward building long-term resilience through investments in infrastructure, diversified income streams, and adaptive agricultural practices that minimize future risks.
2. **Improve rural infrastructure.** The governments need to invest in clean water supply and energy infrastructure using solar power, road construction, and internet access to enable rural households to survive and bounce back from crises.
3. **Encourage income diversification.** The governments need to support the development of off-farm employment opportunities together with small businesses and skills training initiatives to decrease agricultural and remittance dependence.

4. **Target resilience-building in climate adaptation strategies.** The governments should integrate resilience thinking into their agriculture, water management, and food security programs instead of only responding to shocks.
5. **Strengthen social protection and community support.** The government needs to increase its safety net programs while supporting community networks which provide assistance to families during challenging periods.
6. **Tailor policies to different livelihoods.** The governments need to create adaptable programs which address the specific requirements of farmers, herders, and low-income population groups.
7. **Engage regional dialogues.** Regional dialogue serving as a platform for knowledge sharing and an action mechanism enables the researcher, communities, and regional authorities to coordinate efforts to ensure that solutions are grounded in the implementation.
8. **Use data to guide action.** Policymakers should implement RIMA tools to monitor resilience gaps so they can direct resources toward the most critical areas.
9. **Focus on equity.** The government needs to guarantee that support programs reach vulnerable populations including women and land-poor households and remote communities.

6. Conclusion and Recommendations

Food security is fundamental to socio-economic development. A secure and resilient food system enables the health and well-being of the population while driving economic growth and reducing poverty. The report shows that Uzbekistan has achieved notable progress in achieving food security. Yet, resilience towards food security remains at risk because of increasing climate threats, economic disturbances and worldwide supply chain disruptions. The report also shows that such shocks and risks towards food security require household, community, and national resilience to ensure food systems stability. In the case of such shocks, households, especially in rural areas with low adaptation ability, and poor urban households, are those that suffer more from the adverse consequences.

The empirical findings show that households in Central Asian countries, including Uzbekistan, demonstrate stability for food access during crises because they possess better basic services, diversified income streams, adaptive farming practices and strong social networks. This demonstrates that the national food policy needs to adopt a resilience-based framework for its future development. The successful implementation of this approach demands tight cooperation between government institutions and international partners who will perform essential roles.

Recommendation for the Government of Uzbekistan

Based on the findings, we recommend the following actions for the government:

- **Strengthen national food strategy with a resilience lens:** The government's strategy on the Development of Agriculture for 2020 – 2023 needs to integrate resilience as a central pillar. The strategy should be aligned with the country's climate adaptation, poverty reduction, and rural development priorities.
- **Localize resilience building with rural infrastructure and services:** The government needs to prioritize clean water, renewable energy (e.g., solar panels), roads, storage facilities, and digital connectivity in underserved rural areas. Such investments can lead to better access to markets, information, and essential services that enhance household resilience to shocks.
- **Strengthen rural livelihoods and leverage remittances for development:** Rural development should focus on off-farm jobs, youth and women's entrepreneurship, and better financial access. Remittances can be leveraged through co-investment schemes, tax incentives, and savings programs to support local ventures, while financial literacy and microcredit can boost household resilience.
- **Foster inclusive governance and design interventions:** The government should design policies to meet the unique requirements of farmers, pastoralists, and *dekhqan* households. Participatory planning processes can be used to involve local voices and adapt interventions to match specific livelihoods and regional contexts.

- **Expand social safety nets and local institutions:** The government should design measures to strengthen both formal social protection schemes and informal community networks to help households absorb shocks. Support needs to be provided to cooperatives, mutual assistance groups, and rural women's organizations.

For International Organizations and Donors

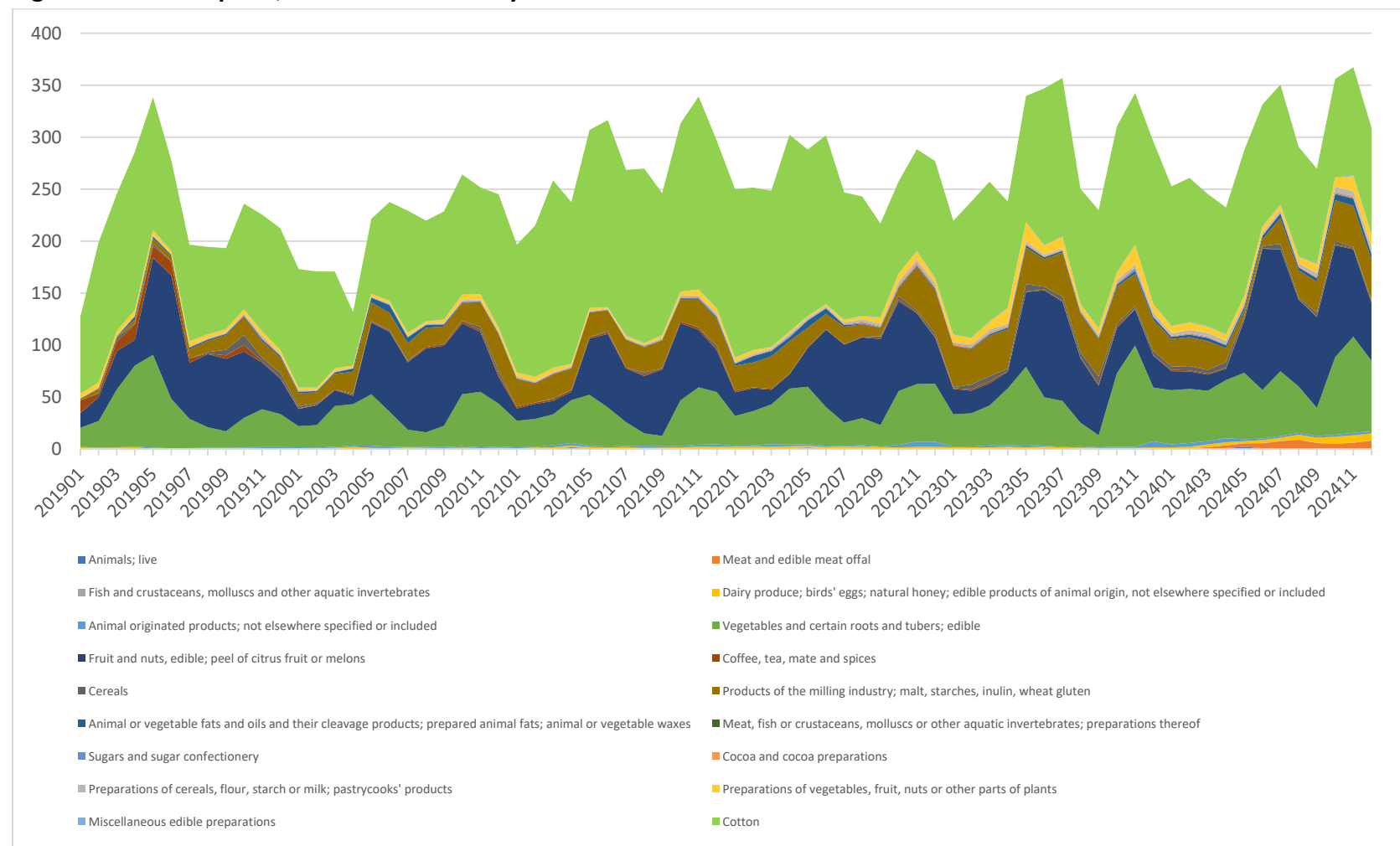
Based on the findings, we recommend the following actions for international organizations and donors acting in cooperation with the government:

- Financing needs to be directed toward Uzbekistan's national priorities for agriculture modernization, food security and climate adaptation strategies. The program should focus on building long-term resilience instead of providing short-term emergency assistance.
- The projects need to invest in developing data systems and early warning mechanisms by using tools such as the FAO's RIMA and Resilience Capacity Index (RCI) for food security monitoring, climate forecasting, and household vulnerability assessments. This will help target interventions more effectively.
- The programs need to promote integrated approaches by linking food security with health, education, and social protection programs. The program should maintain its support for school feeding and nutrition awareness and women's empowerment initiatives as part of its overall resilience-building efforts.

By acting on these recommendations, the Government of Uzbekistan, its international partners, communities and the private sector can create food systems that are not only productive and inclusive but also resilient in the face of future shocks. Building resilience today is the foundation for sustainable food security systems and economic development.

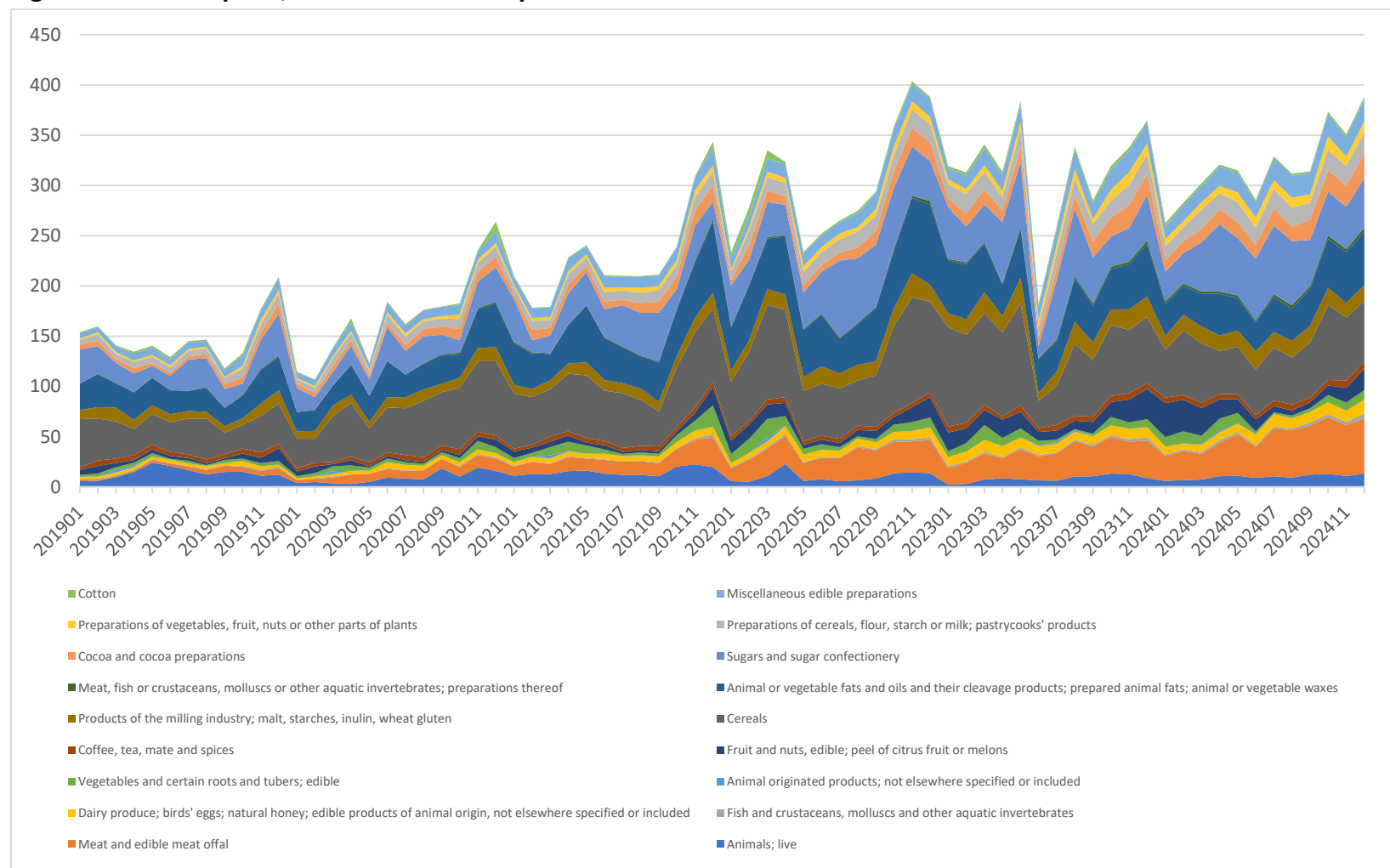
Appendix.

Figure A1. Food exports, Uzbekistan. Monthly data since 2019 in million US dollars



Source: UN Comtrade

Figure A2. Food imports, Uzbekistan. Monthly data since 2019 in million US dollars



Source: UN Comtrade