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Agrifood trade and food security in Central Asia: Possible implications of the war in Ukraine

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Contents

Executive Summary[1]

The countries in Central Asia are highly dependent on imported food products and key agricultural inputs. More than half of the wheat consumed in Tajikistan and over one third of the wheat consumed in Kyrgyzstan is sourced mainly from Kazakhstan and Russia. People's diets in these countries depend critically upon wheat and wheat products, as they provide over a third of all calories consumed in Kyrgyzstan and nearly one half in Tajikistan. Trade with Russia and intra-regional agrifood trade are critical for meeting the food needs of the populations of Central Asian countries. Dependence on fertilizer imports in the region is also high: a quarter of 2021 fertilizer imports in Uzbekistan (also a major fertilizer exporter to Tajikistan), more than one third in Kyrgyzstan and close to three-quarters in Kazakhstan was imported from Russia.

The disruptions to trade in grain, oilseeds and sugar and high food and agricultural input prices, driven by the economic fallout from the COVID-19 pandemic and exacerbated by the economic consequences of the war in Ukraine, have led to a worsening food security situation in the Central Asian region and uncertain future prospects. The region is already highly exposed to any disruptions to food and agricultural inputs trade with Russia and within the region, and any additional shocks from droughts or other adverse events could result in a decline in domestic food production, further trade flow disruptions, and a fast deterioration of food security in the region. For countries with relatively high levels of undernourishment and dependency on food imports, such as Kyrgyzstan and Tajikistan, any reduction in supplies due to production shortfalls or export restrictions will pose a significant threat to food security.

Food insecurity is a significant concern across the region. The *Listening to Central Asia* rapid surveys have revealed that a significant share of the region's population is worried about food price inflation and jobs; concerns about food security are higher than any other subjective measures of poverty used in the rapid surveys (World Bank, 2021-2022 survey data).[2] The monitoring data on undernourishment and other indicators of food insecurity are patchy in the region.

Depending on the severity of the continuing impacts of the war and the trade sanctions against Russia and rising fertilizer prices, undernourishment rates may significantly increase. To demonstrate the magnitude of possible impacts on undernourishment in a range of global grain trade and fertilizer price scenarios, this paper reports the results of a simulation analysis using the Aglink-Cosimo model at the height of the food price increases in the summer of 2022. Under the scenario of moderate adverse developments in grain and fertilizer markets, the total number of undernourished people in Central Asia is expected to increase due to lower availability and higher food prices. Short-term impacts on the number of undernourished are expected to be even stronger in the severe scenario: a 7 percent increase in the number of undernourished would bring the region's undernourishment rate to 4 percent of the region's population. Vulnerable populations, especially women and children, will bear the brunt of the impacts, although the full extent of the deteriorating food security situation is not yet clear from the scarce available data. As of October 2022, the worst expectations of the impact of rising commodity prices and trade disruptions on food security in the Central Asian region have yet not materialized.

Food prices were already on the rise in Central Asia prior to the war. Governments have been taking steps to stabilize prices and protect consumers from further price increases and food supply disruptions. In March-June 2022, domestic prices on selected food products in Central Asia generally followed trends in international prices, particularly reflecting the price spikes for commodities exported by Russia (wheat flour, sugar and sunflower oil), and the effect of export restrictions by Russia and Kazakhstan on price growth. Central Asian governments have implemented steps to temper food price increases. In April 2022, with the goal of ensuring food security, the government of Kazakhstan also introduced an export quota for wheat and wheat flour. The quota was subsequently lifted as of 14 September 2022.

Grain import-dependent countries – Kyrgyzstan, Tajikistan and Uzbekistan – have taken other steps to stabilize consumer food prices, resulting in lower food price increases than what could have occurred in the absence of such measures. In Kyrgyzstan, the government allocated approximately $97 million to the Emergencies Ministry for the purchase of food products. In Tajikistan, the Agency for State Material Reserves responded to the crisis by establishing mobile sales outlets and selling a fixed amount of food to the public at relatively low prices in the face of rising retail prices for wheat-based products, vegetable oil and sugar. Uzbekistan passed a decree "On additional measures to ensure food security and price stability in the domestic market" and allocated funds to facilitate additional wheat imports and negotiate wheat import contracts with Kazakhstan. In parallel, subsidies for fertilizer and other key production inputs and agricultural credit increased in Kazakhstan and the rest of Central Asia to prevent a potential decline in domestic production and a shortfall in the next harvest due to rising input prices.

Central Asian countries are also vulnerable to economic developments in Russia due to their high dependence on Russia as an export market for their agrifood products. Agrifood export earnings, in particular in Kazakhstan, Kyrgyzstan and Uzbekistan, where the share of Russia in total agrifood exports is roughly one third, will depend on the evolution of Russian demand and the continued functioning of supply chains. At the regional level, fruits and vegetables are by far the largest category in agrifood exports to Russia, with Uzbekistan being the largest supplier.

The vulnerability of Central Asian countries through the export channel is likely to be somewhat lower than through the agrifood import channel. According to historical trade data, over the last decade the share of Central Asian exports to Russia was gradually declining for various reasons, including strong competition from domestically produced products in Russia, perishability of exported food products and underdeveloped supply chains marked by high trade costs. Macroeconomic shocks were also among the factors affecting the stability of Central Asian agrifood exports to the Russian market. In light of this, Central Asian countries have been working to diversify their export markets, with a strong interest in increasing their agrifood exports to China and other countries.

In conclusion, in the current context, agri-food markets and food security are subject to much greater uncertainty than in the past few decades. As the world enters an era of uncertainty, driven by climate change and amplified by natural and man-made events, some of the conventional policy advice needs to be reconsidered. Open trade, for which this policy note advocates, should still be pursued but with more caution and additional instruments

to mitigate the impact of more frequent trade restrictions, for example by boosting public stocks to promote food security. Other policy advice from the time preceding the current crisis remains unchanged. Addressing the long-term risks to food security and agri-food systems productivity by mitigating climate risks, promoting adaptation and a broader set of investments, and policy reforms to shift the food system to a more climate-resilient and climate-smart trajectory are all needed. They are a critical pathway to address current vulnerabilities while also managing future risks and keeping sight of longer-term priorities.

In the current context, agri-food markets and food security are subject to much greater risks than in prior decades. This technical paper summarizes the results of a rapid assessment of the key dimensions of regional food trade and provides an initial analysis of food security trends in the Central Asian region. To the extent that information is available, the paper also considers regional inter-dependencies on fertilizers – a critical agricultural input that is key for production in the next season. The paper identifies a set of initial policy recommendations based on the available evidence and proposes areas for in-depth analysis in order to develop a more comprehensive assessment of food security issues through the agri-food trade lens in the Central Asian region.

The paper is organized around the following questions:

- What is the exposure of the Central Asian countries in terms of the magnitude of agrifood trade with Russia and Ukraine as well as intra-regional trade and what implications does that have for food security in the Central Asian region?
- How has domestic food production performed and what challenges and opportunities do these trends present to food security in the region?
- How have Central Asian countries responded to rising food prices in an effort to maintain domestic price stability and access to food?
- What are the expectations for longer-term food price trends and food security trends in the region in a range of scenarios?
- What are the key risks to food security in the Central Asian region?

The paper concludes with policy recommendations to mitigate food security risks stemming from the region's high dependence on food trade and imports.

I. Introduction

1. **Russia and Ukraine are key players in global agricultural markets.** Both countries are major producers and net exporters of agrifood products, with a dominant role in key commodities that are important for global food security, such as wheat, maize and sunflower oil. Russia, together with Belarus, is also a key supplier of fertilizers. In 2021, wheat exports by Russia and Ukraine accounted for about 30 percent of the global market. Russia's global maize export market share is comparatively limited, standing at 3 percent between 2016/17 and 2020/21. Ukraine's maize export share over the same period was more significant, averaging 15 percent to make it the world's fourth largest maize exporter. Combined, sunflower oil exports from both countries represented 55 percent of global supply (FAO, 2022).

2. **Many countries that are highly dependent on imported food products and fertilizers rely on Ukrainian and Russian food supplies to meet the needs of their populations.** The war in Ukraine raised concerns that supplies would be disrupted given that the harvesting and marketing of crops have been severely constrained. Ukraine's seaports have been blocked as a result of the war, adding to difficulties brought by the suspension of oilseed crushing operations and damages to in-land infrastructure. Much uncertainty also surrounds Russian export prospects as transactions are affected by economic sanctions imposed on the country. Ultimately, the conflict has the potential to exacerbate already rising international food prices, by disrupting global grain and oilseeds supplies in the months ahead.

3. **The Central Asian countries are highly dependent on Russia as their key trading partner.** Given the significant and interlinked risks of high and volatile food prices, growing input costs, disruptions in regional and global food supplies, export restrictions and macroeconomic uncertainty, the Central Asian countries' agriculture sectors are facing important challenges in the short to medium term. This note highlights the vulnerabilities and potential impacts of the war in Ukraine on Central Asia's agrifood trade, from the perspective of its dependency on trade with Russia, Ukraine and Belarus.

4. **Given the importance of agri-food trade for the region, this paper closely examines the trade flows of key agricultural products that are most critical for food security.** The paper assesses regional inter-dependencies and takes stock of trade policies and other measures that the Central Asian countries have recently put in place. The paper identifies issues for future analysis from the agri-food trade perspective, as well as issues for policy dialogue at the regional level in order to build food system resilience in the region.

II. Exposure of the Central Asian countries to growing risks in global food markets

5. Among the five Central Asian countries, Tajikistan is most dependent on imports to meet the caloric intake needs of its population. The import dependency ratio, which captures the share of imports in total calories that are available domestically, was 40 percent in the 2017-2019 period (Annex Table 1). Uzbekistan, Turkmenistan and Kyrgyzstan show smaller

aggregate import dependency ratios for calories: 23 percent, 18 percent and 15 percent, respectively. Finally, as indicated by a negative import dependency ratio of -53 percent, Kazakhstan is a net exporter of calories. Given the high reliance on wheat and wheat products as a source of calories, especially in people's diets in Tajikistan which is also highly dependent on wheat imports, several Central Asian countries face very high food security risks stemming from trade disruptions with Russia and intra-regional grain trade.

Table 1. Import dependency, contribution to food supply and net imports per capita for key commodities.

	(a) Wheat and wheat products			(b) Sunflower oil			(b) Cereals and products, excluding wheat		
	Import Dependency Ratio (weights)	Net-imports per capita/ year (kg)	Share of product in food supply (kcals, %)	Import Dependency Ratio (weights)	Net-imports per capita/ year (kg)	Share of product in food supply (kcals, %)	Import Dependency Ratio (weights)	Net-imports per capita/ year (kg)	Share of product in food supply (kcals, %)
Kazakhstan	-1.45	-420	25%	0.1	2	11%	-0.38	-88	5%
Kyrgyzstan	0.36	54	37%	1.0	6	3%	0.02	4	10%
Tajikistan	0.58	127	45%	0.88	7	4%	0.08	5	9%
Turkmenistan	0.15	38	51%	1.0	3	2%	0.13	5	5%
Uzbekistan	0.26	65	42%	0.79	5	3%	0.18	6	4%

Note: Based on FAOStat (2022), using 2017-2019 averages.
Import Dependency Ratio = (Imports - Exports) / (Domestic Production + Imports - Exports) per product group, in weights.
Net-imports per capita/year = (Imports - Exports)/Population Size.
Share of product in food supply = Amount of a product group available as food for human consumption, expressed as share in aggregate domestic food supply (in calories). "Food" corresponds to the product and its direct derivates available for human consumption after subtracting non-food uses of the product (e.g., feed, losses, use as seed or further processing from the total domestic supply quantity (Domestic Production + Imports - Exports +/- Stock Variation).[3]
Source: Authors' calculations.

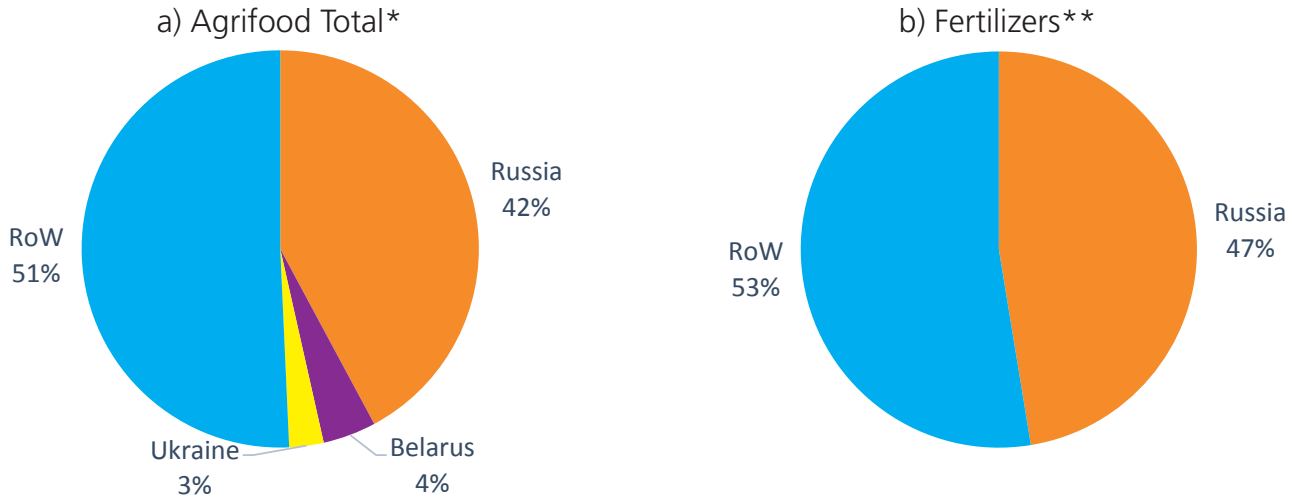
6. **Thus, Central Asian countries obtain a significant share of their food supply through wheat and derivative products, ranging from about 25 percent in Kazakhstan to more than 50 percent in Turkmenistan.** At the same time, three of these countries (Kyrgyzstan, Tajikistan and Uzbekistan) show relatively high import dependency ratios for this product group (in weights), with Tajikistan revealing an import dependency ratio of almost 60 percent as well as high net imports per capita (Table 1, Column a). Sunflower oil makes up less than 5 percent of the food supply in any of the Central Asian countries (except for Kazakhstan), but besides Kazakhstan all countries show extremely high import dependency ratios for this product (Table 1, Column b).[4] With respect to other cereals and products (excluding wheat and wheat products), import dependency ratios as well as net imports per capita are small, and these products contribute relatively little to the domestic food supply in Central Asian countries, although they will contribute indirectly when used as feed.

III. An in-depth look by country: Central Asia's dependence on imports of key agrifood products and fertilizers from Russia

7. **Central Asian countries are heavily dependent on imports of agrifood products from Russia.** Kazakhstan and Kyrgyzstan, which are also members of the Eurasian Economic Union (EAEU) together with Russia, are most reliant on Russian supplies. Russia is the primary supplier of agrifood commodities, with its share in the total value of imports

of these products reaching 42 percent in 2021. Central Asia's imports of agrifood products from Ukraine and Belarus were much lower, with only 3 percent and 4 percent of the total value, respectively, in 2021 (Figure 1).

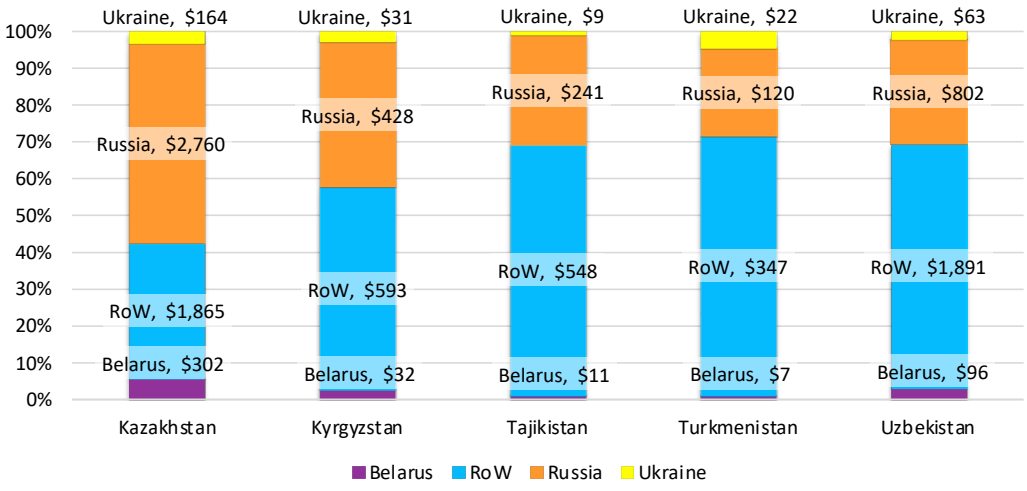
Figure 1: Shares of Belarus, Russia and Ukraine in the total value of CA5 imports in 2021



Note: *List of agricultural products as defined in the World Trade Organization Agreement on Agriculture and Fish (HS03); **N (HS3102), P(HS3103), K(HS3104).
Source: FAO Market and Trade (FAO-EST) based on Trade Data Monitor (TDM) data.

8. **At the country level, the shares of agrifood supplies from Ukraine to countries in Central Asia ranged from 1 percent (Tajikistan) to 5 percent (Turkmenistan).** In nominal terms, the largest value of agrifood imports from Ukraine was recorded in Kazakhstan, at $164 million in 2021. Similarly, the share of Belarus in total agrifood imports of Central Asian countries was low, with the highest share – 5 percent – in Kazakhstan. In contrast, Russia's share in each of the Central Asian countries' agrifood imports is high. In 2021 it was 54 percent in Kazakhstan ($2.8 billion), 40 percent in Kyrgyzstan ($428 million), 30 percent in Tajikistan ($241 million), 28 percent in Uzbekistan ($802 million) and 24 percent in Turkmenistan ($120 million). These shares have remained stable over the last five years (2016-2020) (Figure 2).

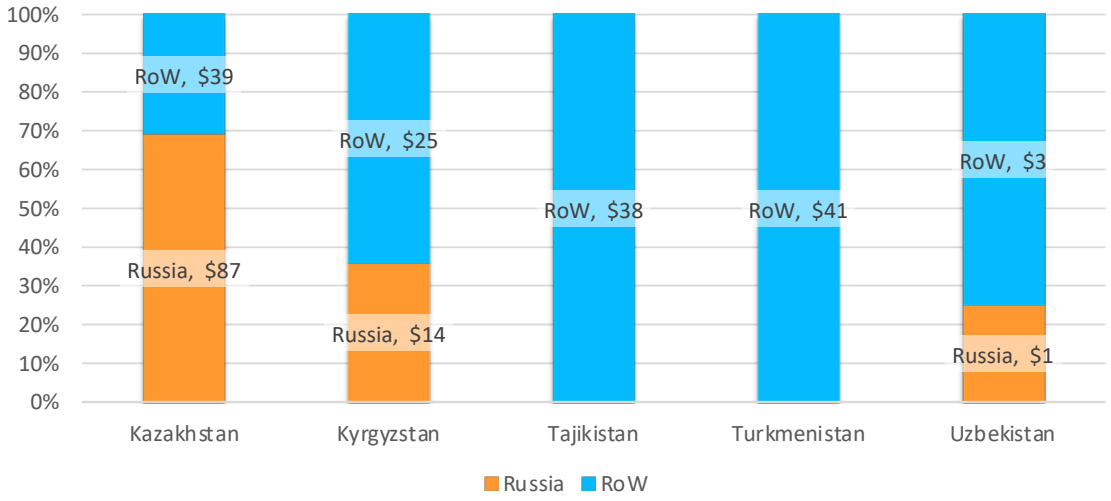
Figure 2: Agrifood imports from Belarus, Russia and Ukraine in Central Asia, country level (percent and $ million), 2021



Source: FAO-EST based on TDM data

9. **Some Central Asian countries are also highly dependent on imports of fertilizers from Russia and from other Central Asian countries.** For example, 70 percent ($87 million) of imported fertilizers in Kazakhstan were of Russian origin in 2021. In Kyrgyzstan, the share of fertilizers from Russia was 35 percent ($14 million). It should be noted that Uzbekistan is a net exporter of fertilizers, with most exports destined to other Central Asian countries. For example, Tajikistan imported 100 percent of its fertilizers from Uzbekistan in 2021. Similarly, 98 percent of Turkmenistan's imports of fertilizers were from Uzbekistan in 2021, with no records of supply from Russia (Figure 3).

Figure 3: Imports of fertilizers from Russia in Central Asia, by country (percent and $ million)



Note: Fertilizers are N(HS3102), P(HS3103) and K(HS3104).
Source: FAO-EST based on TDM data.

Key agri-food import and exports of Kazakhstan, Kyrgyzstan and Uzbekistan

The countries of Central Asia are dependent on Russia for a handful of product groups in particular: sugar and confectionary, and fats and oils (including sunflower seeds and sunflower oil). Central Asian countries import a wide range of agrifood products from Russia, but there is a noticeable dependency of the region on sunflower-seed oil with a 10 percent share in the region's aggregate imports of this product, reaching 300 000 tonnes, with only 95 000 imported from other countries in 2021. Exports from Ukraine to Central Asia are relatively small, taking 3 percent of total agrifood imports in the region, with malt extract ($47 million), and chicken cuts and edible offal ($46 million) accounting for the largest share of the region's agrifood imports from Ukraine in 2021.

There is a notable dependence of Kazakhstan on sugar and sugar confectionary from Belarus, Russia and Ukraine (71 percent). Similarly, 75 percent of dairy and eggs are imported from these three countries. Kazakhstan is also heavily dependent on imports of processed products from cereals, including bread, pastry, malt extract, cookies, pasta and other goods, with nearly 86 percent of this commodity group received from Belarus, Russia and Ukraine in 2021. Kazakhstan is a net exporter of cereals (primarily wheat) and is the main supplier of this product to its neighbouring Central Asian countries.

Kyrgyzstan is a net importer of meat, 90 percent of which is imported from Belarus, Russia and Ukraine. It is also highly dependent on imports of fats and oil, mainly sunflower seeds, 94 percent of which were sourced from Russia in 2021. There is also a strong dependency on imports of cereals and sugar and confectionary from these three countries, of which Russia supplied 48 percent and 38 percent, respectively.

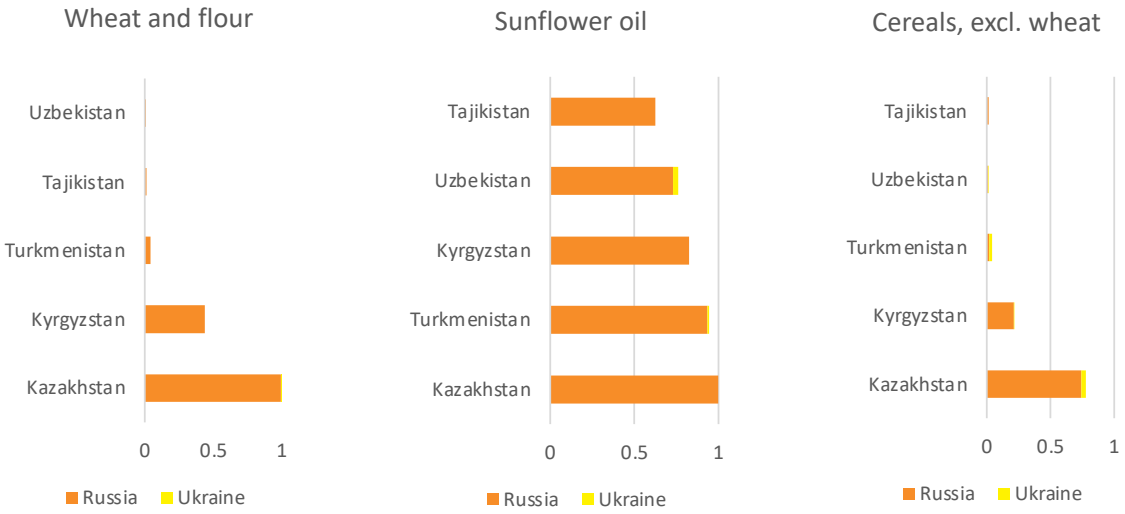
Uzbekistan is a net importer of meat, live animals, sugar and confectionary, fats and oils, and cereals. There is a strong dependence on imports of live animals from Belarus (as of 2020), with nearly 50 percent coming from this country, whereas 62 percent and 68 percent of sugar and confectionary and fats and oils, respectively, were imported from Russia. Uzbekistan is a net importer of cereals, most of which are received from Kazakhstan. Uzbekistan is a net exporter of fertilizers and fruits and vegetables.

Note: For details, see Annex Figure 1.

10. **Strong trade dependencies exist among the Central Asian countries. In particular, exports of wheat and oilseeds from Kazakhstan are important for the other countries.** Almost 100 percent of all cereals imported by Tajikistan were from Kazakhstan (1 million tonnes worth $261 million in 2021) and almost half of the total volumes of cereal imported by Uzbekistan were from Kazakhstan (9 million tonnes out of a total of 20 million tonnes, worth $572 million in 2020). More than half of Uzbekistan's imports of oilseeds in nominal terms ($36 million in 2020) were also shipped from Kazakhstan.

11. **As an exporter of key commodities, Russia plays a particularly prominent role in Central Asia's imports of sunflower oil.** Russia is a major source of wheat for Kyrgyzstan and Kazakhstan, however Kazakhstan is a net exporter of this commodity (Table 1). Sunflower oil – a product for which all countries, except for Kazakhstan, reveal a high import dependency ratio – is almost entirely sourced from Russia. With respect to cereals (excluding wheat), a sizeable share of Kyrgyzstan's and Kazakhstan's imports originate from Russia. Again, Kazakhstan is a net exporter of this item group, exporting roughly ten times its import volume.[5]

Figure 4: Key food products affected by supply disruptions: Share of imports directly sourced from Russia and Ukraine (2021 values)



Note: Data for Tajikistan and Turkmenistan are constructed using exports as reported by trading partners.
Source: FAO-EST based on TDM data.

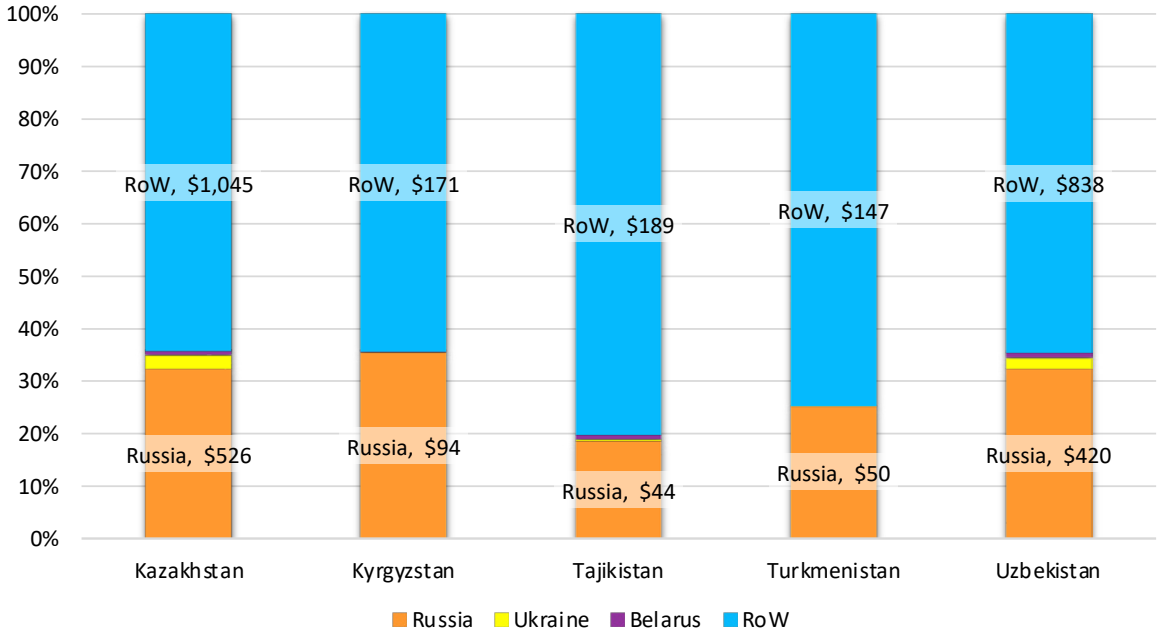
IV. Agrifood exports to Russia from Central Asia

12. **Central Asian exporters depend on Russia as a key market.** Agrifood export earnings, in particular in Kazakhstan, Kyrgyzstan and Uzbekistan, where the share of Russia in total agrifood exports is roughly one third, will depend on the evolution of Russian demand. At the regional level, the fruits and vegetables category is by far the largest category in agrifood exports to Russia, with Uzbekistan as the main supplier (Figure 5).

13. **Russia is also a major destination for Central Asia's agrifood exports.** In 2021, its shares varied between 18 percent of total agrifood exports from Tajikistan to 33 percent of agrifood exports from Kyrgyzstan. The share of exports to Belarus and Ukraine is relatively low, with only $40 million worth of exports sent from Kazakhstan to Ukraine (cereals and

milling industry products as the major product group), and $25 million from Uzbekistan in 2021 (predominantly fruits and vegetables). The same year, exports to Belarus were only recorded in Kazakhstan and Uzbekistan, totalling $16 million from each country. The key product groups exported from Central Asia to Russia are fruits, cereals, dairy and meat products.

Figure 5: Agrifood exports from Central Asia to Russia, Ukraine and Belarus, by country (percent and $ million), 2021



Source: FAO-EST based on TDM data.

14. **Exports from Central Asia to Russia might be affected by both falling incomes and high inflation in Russia.** All such products seem to have relatively high income and own-price elasticities of import demand, and therefore with the probable decline in household incomes in Russia one could expect lower demand for most agrifood imports from Central Asia.

15. **Preliminary estimates of the changes in agrifood exports to Russia show that these could vary from -3.6 percent in Kazakhstan to -1.7 percent in Uzbekistan and 0.3 percent in Kyrgyzstan**, which is within the error margin for such uncertain situations.[6]

16. **According to historical trade data, over the last decade the share of exports to Russia from Central Asia was gradually declining, for various reasons, including high trade costs, strong competition from domestically produced products, perishability of exported food products and underdeveloped supply chains.** Macroeconomic shocks, including the volatility of the Russian rouble since 2014, were also among the factors affecting the stability of Central Asian agrifood exports to the Russian market. In light of this, countries were working to diversify their export markets, with a strong interest in increasing their agrifood exports to China.

Central Asian Countries' Agrifood Exports to Russia

In 2021, Kazakhstan's exports to Russia included pasta and bread, rape or colza seeds, poultry meat, prepared fish and caviar. It should be noted that over the last decade there were some shifts in exports of raw commodities, such as wheat and meslin, that accounted for 50 percent (or $295 million) of exports in 2013 to 5 percent of this commodity in total agrifood exports to Russia in 2021. In the same period, exports of prepared products from cereals, such as pasta, bread and pastry, increased from 4 percent to 10 percent of the total value of agrifood exports.

Kyrgyzstan's agrifood exports to Russia declined until 2013 and then increased since the country's accession to the Eurasian Economic Union. In the early part of the 2010s, the key agrifood export to Russia was kidney beans, taking 90 percent of total agrifood exports, whereas in 2021, the country's export structure was more diversified, with exports of legumes accounting for only 20 percent. Other commodity groups exported to Russia were Butter and cheese (28 percent, or $26 million), fish (10 percent of total agrifood exports to this destination, or $10 million), bovine meat (6 percent or $6 million) and bread and pastry (5 percent or $5 million).

Tajikistan's exports to Russia in 2021 were limited to cotton (54 percent of all agrifood exports, or $24 million) and dried and fresh fruits and grapes. The share and volumes of exports of all fruits grew from 5 percent in 2013 to 45 percent, or $15 million, in 2021.

Turkmenistan's exports to Russia have been declining over the years, and as of 2021 were limited to a few commodities, such as tomatoes (91 percent of all exports to this destination, or $45 million), and wool and cotton waste.

Uzbekistan's major products exported to Russia were fruits and vegetables, constituting 55 percent of total agrifood exports to this destination in 2021. These refer particularly to grapes, apricots, cherries and peaches, as well as tomatoes.

Note: For details, see Annex Figure 2.

V. Domestic demand and availability for key products

17. **In the 2021/2022 marketing year (July/June), Central Asian countries produced less wheat compared to previous years, due to the combined effects of the drought, increasing input costs, and the impact of COVID-19 on agricultural and marketing activities.** The largest decline was estimated in Kyrgyzstan, with 2021/2022 wheat production that was 80 percent below the average levels recorded in the previous five years. Kyrgyzstan is highly dependent on imported wheat to satisfy its domestic consumption requirement, particularly from Russia and Kazakhstan (Annex Table 2).

18. **In Kazakhstan, the main supplier of wheat to the Central Asian countries, production in 2021/2022 was estimated to be 11.8 million tonnes – 17 percent lower than the average during the previous five years.** As of April 2022, the Ministry of Agriculture of Kazakhstan has organized an inspection of 80 percent of the domestic wheat reserves and reported the availability of 6.4 million tonnes of wheat stocks and 118 000 tonnes of wheat flour. According to the Food and Agriculture Organization's Crop Prospects and Food Situation (FAO CPFS) report, as of September 2022 the outlook for wheat production in 2022/2023 in Kazakhstan is 13.2 million tonnes due to favourable precipitation, which is slightly below the average of the last five years.[7]

19. **The early outlook by FAO's Global Information and Early Warning System (GIEWS) for 2021/2022 import requirements (prior to the unfolding of the war in Ukraine and recent bans imposed by Russia on grain exports to EAEU countries) already showed higher than usual imports.** In Kazakhstan, despite its position as a net exporter of wheat, the import requirements were forecast to increase four times relative to the five-year average import volume, at a level of 2 million tonnes of wheat for 2021/2022. The

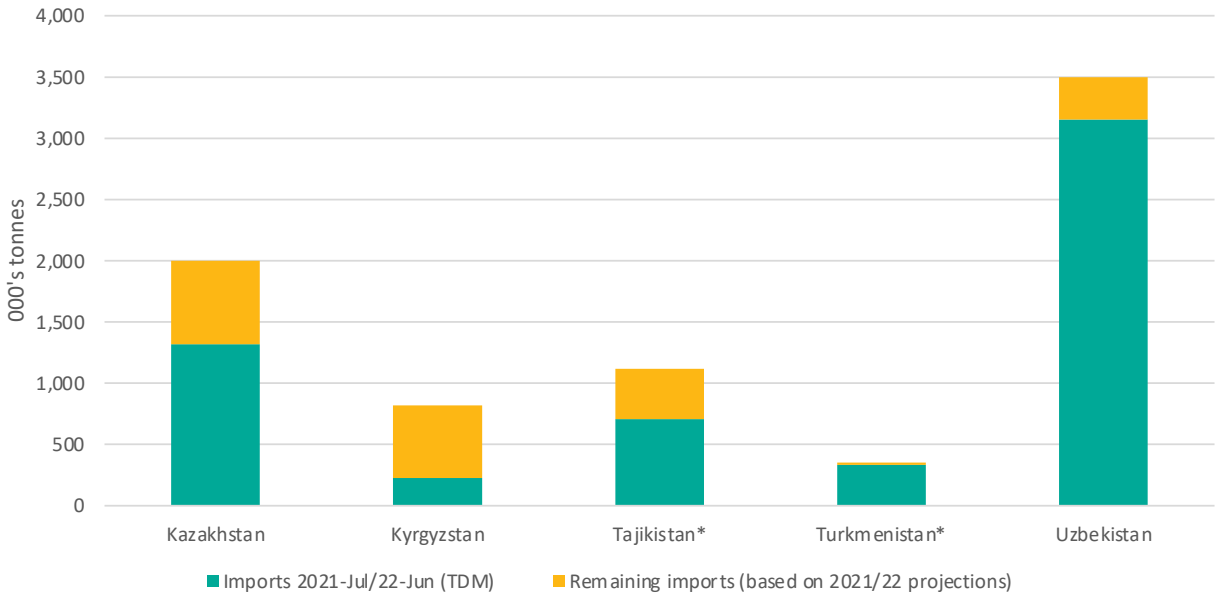
country has imported 1.3 million tonnes, slightly below the projected volume between July 2021 and June 2022.

20. **In 2021/2022 Kyrgyzstan was forecast to import 33 percent more than its five-year average wheat volumes.** However, between July 2021 and June 2022 only 24 percent of the projected wheat quantity was imported, or 228 000 tonnes, which is slightly higher than the amount imported during the same period in the previous year.

21. **Uzbekistan has imported nearly 3.2 million tonnes of wheat and wheat flour between July 2021 and June 2022 out of a projected 3.5 million tonnes for the 2021/2022 marketing year.**

22. **Turkmenistan is the only country in the region where actual imports have reached projected levels for the 2021/2022 marketing year between July 2021 and February 2022.** Notably, that country's imports from Kazakhstan during this period increased nearly nine times as compared to previous years' levels.

Figure 6: Wheat import projections for 2021/2022 and actual imports for July 2021 to June 2022, thousand tonnes



Note: * For Tajikistan and Turkmenistan, actual imports are for July 2021 to February 2022, as no later data was available for these countries in TDM.
Source: TDM for actual imports and FAO-GIEWS for projections.

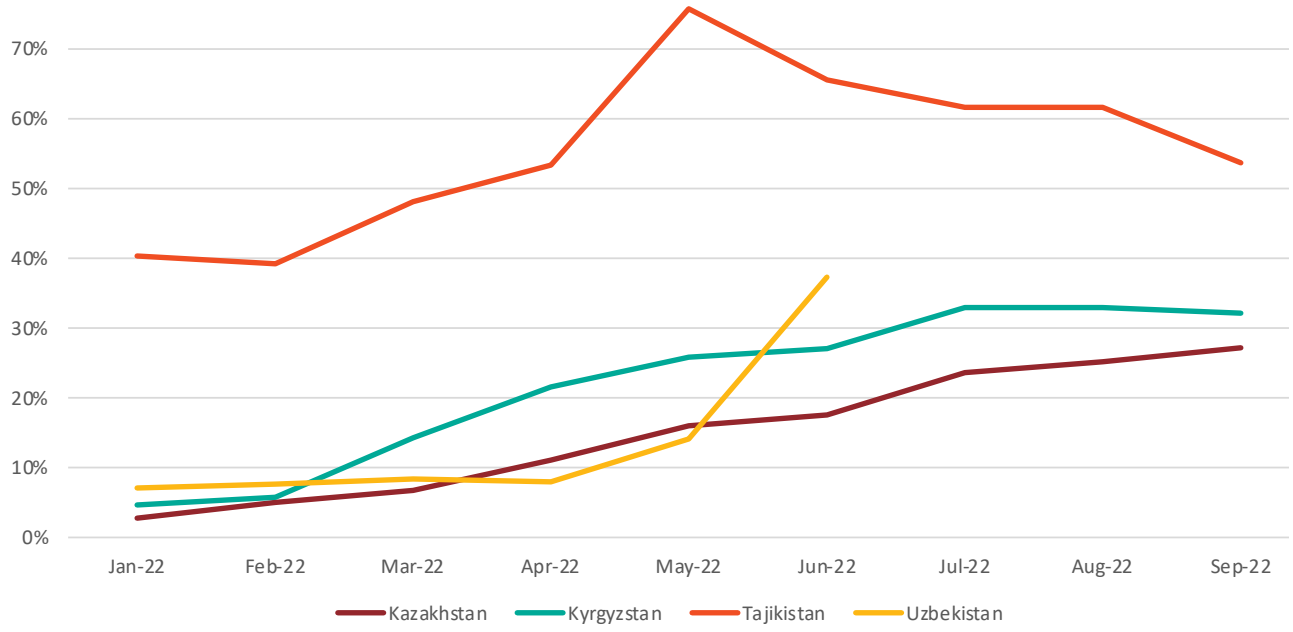
23. **Based on United States Department of Agriculture data, the total sunflower seed and oil supply (production and import) in Kazakhstan is estimated to be 12 percent and 25 percent higher year-on-year, respectively, in 2021/2022. In Uzbekistan, sunflower seed and oil total supply estimates were 22 percent and 45 percent below the previous year's levels.** The same trend was projected on the demand side, with growing domestic consumption projected in Kazakhstan, and lower domestic consumption levels of sunflower seed and oil estimated for Uzbekistan.

VI. Current price situation and policy responses

24. Prior to the war in Ukraine, food prices were already on the rise in Central Asia. Governments are taking steps to stabilize prices and protect consumers from further price increases and food supply disruptions.

25. Since the beginning of the war in Ukraine, food prices have been rising in Central Asian countries. As of September 2022, wheat prices were 27 percent, 32 percent and 54 percent higher year-on-year in Kazakhstan, Kyrgyzstan and Tajikistan, respectively. The highest spike was registered in Tajikistan in May 2022, when prices were 76 percent higher year-on-year. Notably, unlike in other countries of the region, in Uzbekistan wheat prices increased only marginally during the first months of the war in Ukraine, but picked up in June 2022, after the government switched to market prices starting from 1 June 2022 for the purchase and sale of grains.[8] It should be noted that price increases varied significantly at the sub-national level within countries (oblast, districts), with historically high prices registered in some local markets. The extent to which government policies have contributed to slowing down food price inflation is not clear without further research to examine food price transmission mechanism from global to the local food markets.

Figure 7: Change in retail wheat prices (first grade), January-September 2022 year-on-year, percent



Note: For Uzbekistan data is up to June 2022.
Sources: Agency for Strategic Planning and Reforms of the Republic of Kazakhstan Bureau of National Statistics; National Statistical Committee of the Kyrgyz Republic; Agency on Statistics Under the President of the Republic of Tajikistan (Food Price Monitoring and Analysis Tool); and The State Committee of The Republic of Uzbekistan on Statistics.

26. Driven by expectations of shortages and price increases, there have been reports by grain market players of panic buying of wheat flour, sugar and sunflower oil, leading to retail price increases in Kazakhstan. Similarly, there were incidents of overnight price spikes on these same products in Kyrgyzstan, and panic buying of sugar, sunflower oils and other products.

27. Central Asian governments have taken steps to temper food price increases through the following measures:

- **In Kazakhstan**, amid rapidly rising prices on some food products, the government is tightening the monitoring of price growth to enforce the mandated 15 percent mark-up on retail prices for "socially important goods." In October 2022 the Prime Minister of Kazakhstan instructed regional commissions to accelerate reforms to investigate price chains, and instructed the akims (city mayors) of Astana, Zhambyl, Almaty and Kyzylorda regions to take personal control of signing memoranda to reduce the trade markup from 15 percent to 10 percent. An export quota for wheat was implemented in the amount of 1 million tonnes and wheat flour in the amount of 300 000 tonnes between 15 April and 15 June 2022. These have since been lifted as of 14 September 2022.
- **Kyrgyzstan's** response (as of 24 March 2022) was to allocate 8 billion soms (equal to approximately $97 million as of 1 April 2022) to the Emergencies Ministry for the purchase of food products.
- Since March 2022 food prices in **Tajikistan** were reported to be on the rise. It was reported that producers and wholesalers in some markets suspended the supply of goods to retailers. In order to stabilize prices, the Agency for State Material Reserves has established mobile sales outlets in the market and has been selling a fixed amount of staple food to the public at relatively low prices.
- On 31 March 2022, the government of **Uzbekistan** approved a decree "On additional measures to ensure food security and price stability in the domestic market." According to the decree, the State Reserves Management Committee should negotiate and sign import contracts with Kazakhstan's JSC Food Contract Corporation, for the supply of 100 000 tonnes of Class 3 wheat (part flour) at affordable prices from April to July 2022. Additional funds are allocated to possibly import another 500 000 tonnes of wheat depending on the situation in domestic and foreign markets. In addition, from 1 April, the State Reserves Management Committee will be able to transport imported wheat (flour) and vegetable oil by rail with a 50 percent discount. Fees for importers of all types of flour for demurrage when unloading goods from wagons in the first three days are reduced by 40 percent. As of 1 June 2022, all grain is sold on grain exchanges at market prices, following the Resolution of the President of the Republic of Uzbekistan on additional measures to continue reforms leading to agricultural sector liberalization.

VII. Possible longer-term effects of disruptions in supplies from Russia and Ukraine on domestic food prices

The key impact of the reduction in shipments of grain and sunflower oil from Ukraine and the uncertainty of trade with Russia as a result of sanctions is further pressure on already high food prices. The disruption of global supply chains caused by the war in Ukraine led to a steep increase in global food prices.

28. **To explore the possible impacts of a significantly reduced participation of Russia and Ukraine in the global markets for agrifood products, simulations were conducted using the FAO-OECD Aglink-Cosimo model.** Simulations of the potential impact of reduced Ukrainian and Russian exports on individual commodity prices and aggregate food prices as well as undernourishment numbers in different countries were conducted for two scenarios:

    - **"Moderate shock" scenario.** Under this scenario it was assumed that wheat and maize exports from Russia and Ukraine combined would be reduced by 10 million metric tonnes each per year, while their exports of barley, oats, rye and sorghum would be reduced by 2.5 million tonnes, and their exports of oilseeds would be reduced by 1.5 million tonnes per year.

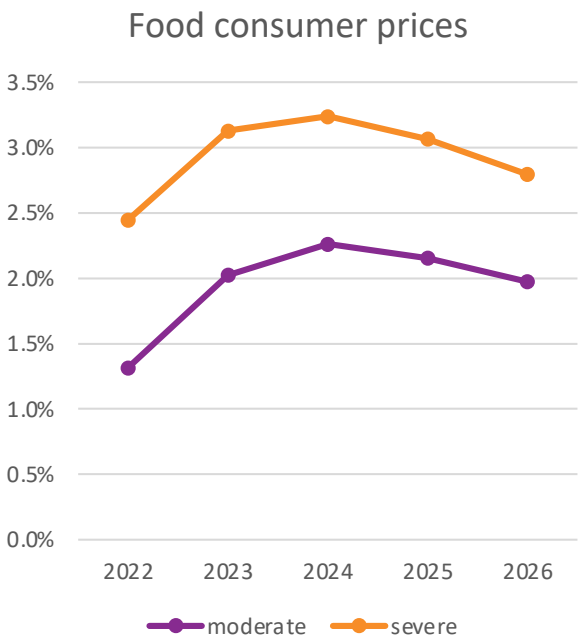
    - **"Severe shock" scenario.** Under this scenario it was assumed that combined Russian and Ukrainian exports of wheat and maize would be reduced by 25 million tonnes per year, exports of other grains would be reduced by 5 million tonnes per year and oilseed exports would be reduced by 3 million tonnes.[9]

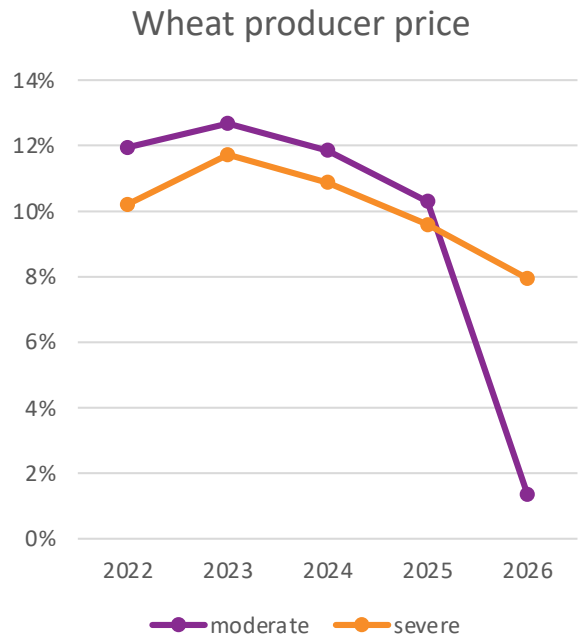
29. **Driven by the global food supply shortfall due to reduced exports of wheat, other cereals and oilseeds from Russia and Ukraine**, the Aglink-Cosimo simulation results, based on an analysis conducted at the peak of food price increases during the summer of 2022, suggested a sharp 24 percent increase in wheat producer prices under the severe shock scenario in Central Asia, and a 12 percent increase in wheat producer prices in Kazakhstan. Under the moderate scenario, price increases in Kazakhstan and other Central Asian countries were estimated at around 10 percent.

30. **The overall food price increase in Kazakhstan was estimated as relatively modest under the severe shock scenario, with a 3 percent increase compared to the baseline scenario.** Similarly, in other Central Asian countries, there was an estimated minor increase in overall food prices in the short-term – with prices 3.5 percent higher than at the baseline.

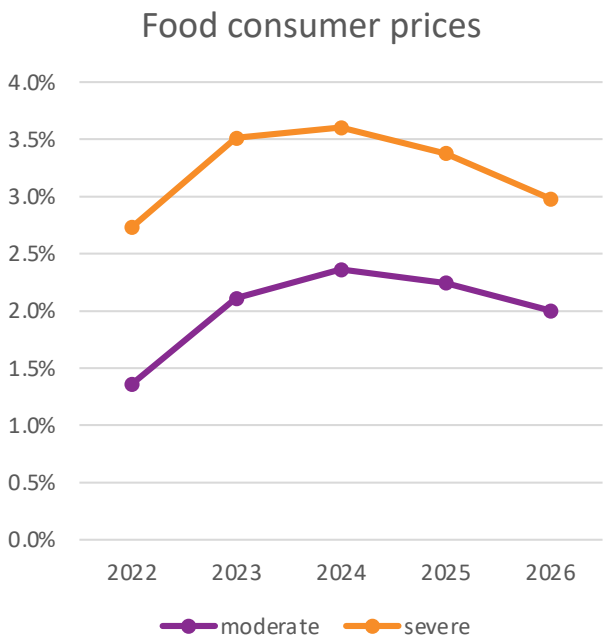
Figure 8: Price response to 'moderate' and 'severe' scenarios in Kazakhstan and Central Asia

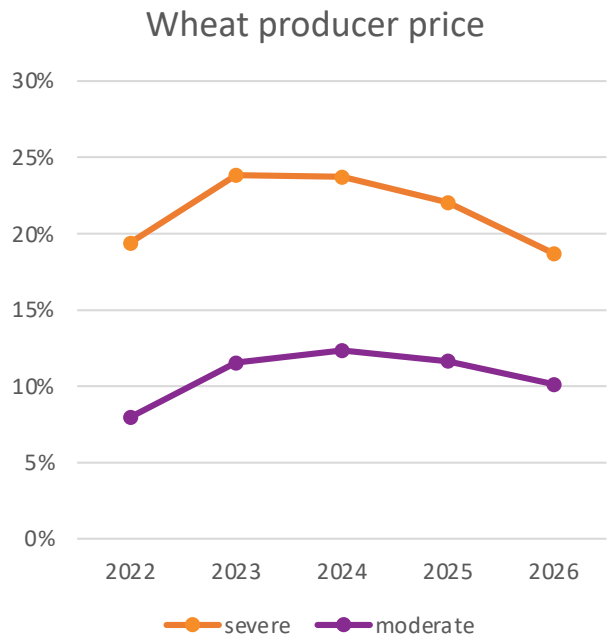
a) Kazakhstan





b) Central Asia





Source: FAO AGLINK-COSIMO simulation results.

31. **The ability of Central Asian farmers and traders to take advantage of rising prices will depend on several factors, most notably the evolution in production costs.** With soaring fertilizer and energy prices, margins to farmers are likely to remain slim. Furthermore, exports of fruits and vegetables, from Uzbekistan in particular, will be negatively affected by the fall in purchasing power of Russian consumers.

32. **In principle, exporters of agrifood products from Central Asia could take advantage of record-high prices to increase earnings (for products such as wheat)** and at the same time gain a greater market share in Russia (for products such as fruits) in the context of reduced shipments from other regions due to a halt in container transport.[10]

33. **However, the capacity of many exporting countries to boost output and shipments may be limited by high production and input costs.** Farmers in countries where the government provides support to agricultural producers (e.g., via subsidized input prices) would be in a better position to increase production, although it will take time to scale up supplies.

34. **For example, in Kazakhstan payments based on input use increased substantively between 2018 and 2020.** Approximately two thirds of these payments are based on variable input use, and the 2021 State Programme foresees an increase in input subsidies including for seed, fertilizers and pesticides. This gives the farmers in Kazakhstan some leeway in coping with higher prices of inputs but risks introducing distortions to farmers' incentives. According to reports, the area harvested to spring wheat in 2022/23 has been estimated at 12.75 million hectares, which is essentially unchanged from last year. In general, subsidization of variable inputs is not an effective way to provide support to agriculture and should be viewed as a short term coping measure. In the longer term, a favourable agricultural policy framework would need to entail a shift to supporting public goods, such as agricultural research and investment in innovation and building resilience to climate change.

35. **Farmers in other Central Asian countries receive much lower state support** and would therefore be in a less favourable position to take advantage of higher prices if the growth in input prices outpaces the price increase.

36. **In Kyrgyzstan and Tajikistan, subsidized loans are provided to agricultural producers via the state budget programmes and other resources (such as the Russian-Kyrgyz Development Fund); these should be analysed to learn to what extent they can help to shield farmers from input price increases to protect their incomes.** An anti-crisis plan worth 126 billion Kyrgyz som was adopted in Kyrgyzstan, of which 2.5 billion soms ($219 000) were allocated for the purchase of seeds and fertilizers. A total of 26 billion soms ($315 million) were provided to subsidize interest rates and provide loans to farmers at 6 percent per year.

37. **Regarding wheat in particular, Turkmenistan provides market price supports, with frequent increases in the administered price.** Therefore, farmers' earnings will depend on whether or not future increases in this price will reflect the rise in production costs and the evolution in international wheat prices.

38. **On the contrary, in Uzbekistan, state purchases of grain and the establishment of state purchase prices for grain were abandoned in 2021 and subsidies to farmers are limited.**

39. **There is currently high pressure in Central Asian countries to keep food prices low for urban populations and other net food consumers.** Central Asian countries' governments are facing important policy dilemmas: the need to balance a trade-off

between consumer and producer interests, and the need to balance trade-offs between the production of staple crops and high-value agri-food products whose production was encouraged prior to the current period of rising staples prices and trade distortions. Policy reform reversals are being considered, reverting the earlier period of price liberalization in agricultural markets and a shift from a command and control, or otherwise non-market, production system.

40. **An introduction of price control measures may benefit consumers in the short term, but it will discourage investment in the sector and prevent farmers from being able to take advantage of the period of high commodity prices, decapitalizing the sector.** Therefore, production and productivity in the near term will depend upon the policy environment and certainty for producers, and decisions made today to stabilize food prices will have a bearing upon the countries' food security outcomes in the next few years. It is critical to allow farmers to take advantage of high food prices and incentivize private investment in the sector, while using other instruments to promote production and productivity growth in the sector, and provide targeted support to vulnerable groups adversely affected by staple food price increases. Farmers who are competitive, operate in environments where prices are not controlled, and have access to the necessary infrastructure and information are well positioned to take advantage of the increase in food prices.

VIII. Possible effects of disruptions in supplies from Russia and Ukraine on food security

41. **If the war in Ukraine is prolonged, the number of undernourished people in Central Asian countries may increase substantially due to the combined effects of a reduced global food supply and limited access to food as a result of a higher food prices.**

Rising Food Insecurity in Central Asia: The Case of Tajikistan

The economic fallout from the war in Ukraine poses a severe risk to food security in Tajikistan, in addition to the earlier adverse impact of the COVID-19 pandemic on jobs and incomes, and the growing risk of insecurity in Afghanistan, making Tajikistan a hotspot of food insecurity in the Europe and Central Asia region.

The COVID-19 pandemic led to a slowdown of the economy in 2020 that has affected the poor the most. While considerable economic recovery was observed in 2021 following the substantial slowdown in 2020, it is now expected that the economy will contract in 2022 (-0.4 percent) due to the economic consequences of Russia's invasion of Ukraine (WB, Tajikistan Macro-Poverty Outlook, Spring 2022, June update).

Disruptions in agricultural input markets are another major source of vulnerability. With 22 percent of the country's GDP, 19 percent of exports, and 61 percent of total employment, especially for women, agriculture is a major sector of Tajikistan's economy and it has been among the country's major drivers of economic growth. In the past 20 years, agricultural production grew at an average rate of 7.3 percent and its contribution to GDP averaged 20-22 percent, so the country's overall economic performance is sensitive to the performance of the agriculture sector (TAJSTAT, 2021). Despite a large agricultural sector, food security at the national level in Tajikistan remains highly dependent on imports to cover the country's food needs and avail agriculture inputs.

Apart from agriculture, another critical source of income for the Tajik population is remittances, received largely from migrant workers in Russia; this is also one of the most important sources of household income at all income levels, and is most critical for poorer households. According to the *Listening to Tajikistan (L2T)* surveys, one third of all households, and 40 percent of the poor, receive remittance income. Since remittance income in Tajikistan has been mainly to supplement food consumption, it has had outsized impacts on food security. In 2022, purchasing food remained the dominant use of remittance income for the plurality of receiving households, reaching more than 80 percent – the highest share of remittance income spent on food of any other Central Asian country (WB, Listening to Central Asia Surveys, April 2022).

The disruption of global supply chains caused by the war in Ukraine has already led to a steep increase in global food and agricultural input prices, followed by an introduction of restrictive trade measures by Tajikistan's neighbours in an effort to stabilize domestic food prices. Higher food, fertilizer and energy prices in the aftermath of the Russia-Ukraine war are presently the main economic drivers of acute food insecurity in Tajikistan, which is especially severe for vulnerable rural households whose livelihoods were heavily dependent on remittance incomes.

Food insecurity has been a lingering issue in Tajikistan, recognized in key government strategies. The government, in its National Development Strategy (NDS) 2030, gave it due emphasis and defined food security as one of four priorities. By the end of 2022, the number of food insecure people is expected to reach 2.9 million, constituting 30 percent of the country's population (WFP, 2022 Update), an increase from around 20 percent (1.9 million of the population) in 2021 (WFP, April 2022. The latest State of Food Security and Nutrition in the World Report reveals that 29 percent to 42 percent of households in Tajikistan cannot afford a nutrient-adequate diet. Stunting among children under five years of age declined steadily over the six-year period from 2011-2017 (from 26 percent in 2011 to 17 percent in 2017). With an annual population growth rate of 2.5 percent, however, that declining trend is insufficient to meet the global World Health Assembly 2025 target of a 40 percent reduction in the number of children under five who are stunted.

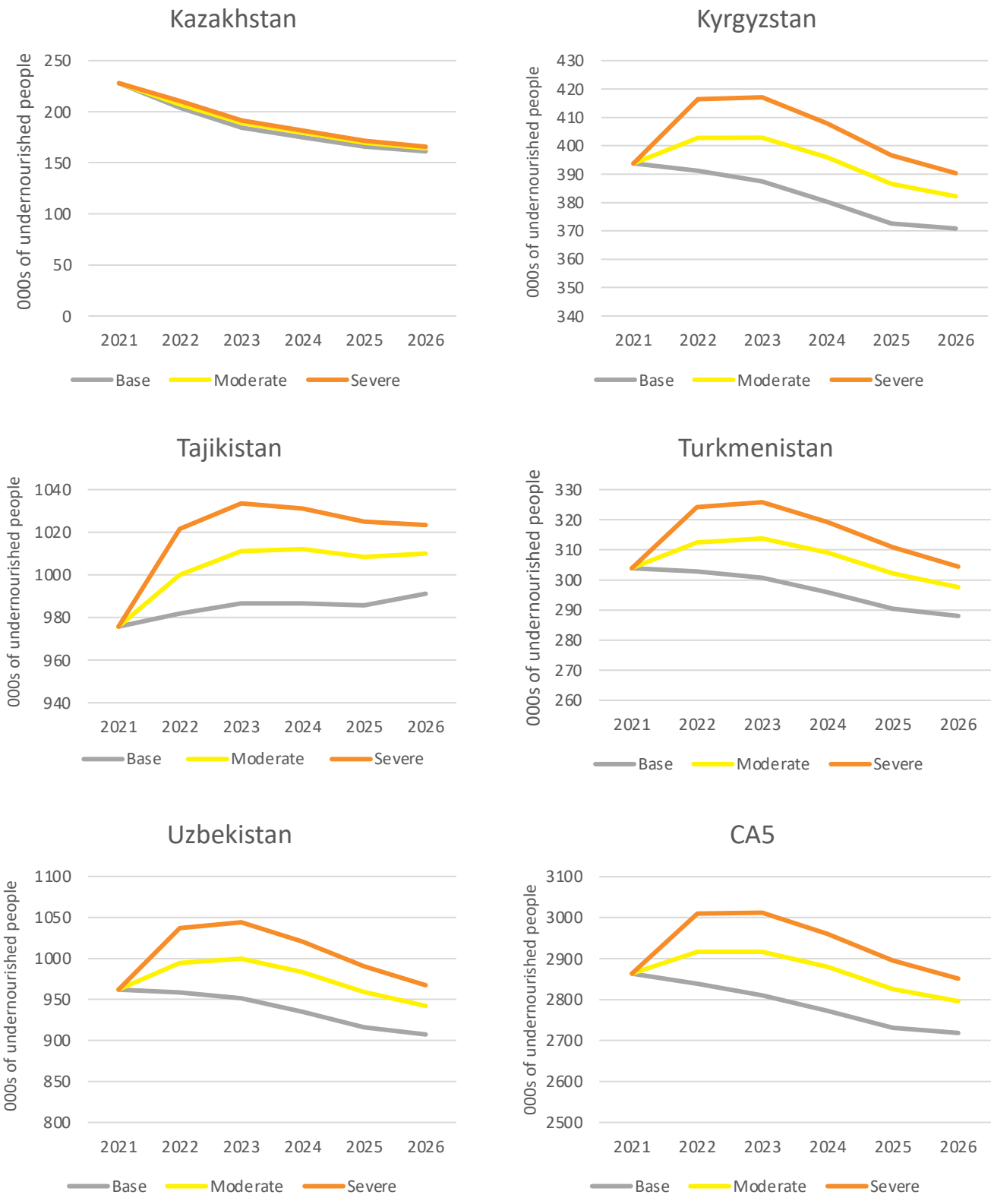
Source: Country data summarized in the Tajikistan CRW Eligibility Note for Slower Onset Crises, World Bank (unpublished draft).

42. **According to FAO projections that use the Aglink-Cosimo model scenarios** explained earlier, under the moderate scenario, which assumed that Russia and Ukraine's exports to the global market of wheat are reduced by 10 million tonnes, other cereals by 2.5 million tonnes, and oilseeds by 1.5 million tonnes, the total number of undernourished people in Central Asia is expected to increase by 3 percent by 2026 as compared to baseline projections. Under the severe scenario, which assumed that combined Russian and Ukrainian exports of wheat and maize would be reduced by 25 million tonnes per year, exports of other grains would be reduced by 5 million tonnes annually and oilseed exports would be reduced by 3 million tonnes; and a 5 percent growth of the total number of undernourished people in Central Asia is projected by 2026 compared to

baseline estimations. The short-term effects of the war are stronger: by 2023 the number of undernourished under the shock of a severe global food shortage may increase by 7 percent as compared to baseline projections, with more than 4 percent of the region's total population being undernourished.

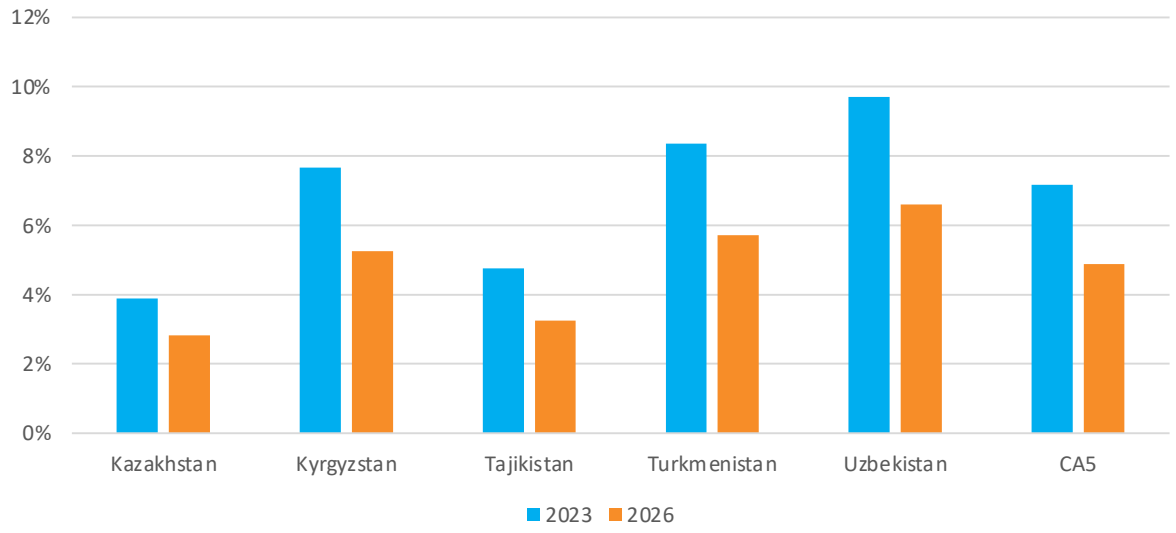
43. **The highest rate of growth of undernourished people is estimated in Uzbekistan, with a 10 percent increase in the severe scenario by 2023.** Kyrgyzstan and Turkmenistan are projected to experience 4 percent and 8 percent increases in the number of undernourished people by 2023 under the moderate and severe scenarios, respectively. The number of undernourished in Tajikistan is expected to increase by 3 percent and 5 percent under the moderate and severe scenarios, respectively, by 2023. In Kazakhstan, the projected growth of undernourished people is relatively small at 2 percent and 4 percent under the moderate and severe scenarios, respectively, in 2023.

Figure 9: Projected number of undernourished people under base, moderate and severe scenarios[11]



Source: FAO calculations using the OECD-FAO Aglink-Cosimo model.
The figures depict the additional number of undernourished relative to the baseline scenario (gray line) without such a supply-side shock. See above for the definitions of the "moderate" (yellow) and "severe" (orange) scenarios.

Figure 10: Growth of the undernourishment rate under the severe scenario as compared to baseline projections, percent



Source: FAO calculations using the OECD-FAO Aglink-Cosimo model.

IX. Key risks to agrifood production and trade in Central Asia

44. **The ongoing war in Ukraine poses significant risks to global markets and to net food importing countries in particular.** The Central Asian countries are facing significant challenges linked to high and volatile food and input prices, possible supply disruptions due to the Russian ban on exports to EAEU and lower incomes due to a fall in remittances. In response, governments are considering export bans and stronger control over domestic prices.

45. **Central Asian countries, given their close trade relations with Russia in particular, are likely to feel repercussions for their agrifood trade, agricultural incomes and food security.** The risks relate to supplies from Russia and Ukraine, prices (high and volatile prices on food, fertilizers and energy), logistics (with disruptions in both inland infrastructure in Ukraine and Black Sea ports and maritime transport) and macroeconomic instability.[12]

1) Disruptions in imports

46. **While early production prospects for 2022/2023 winter crops were favourable in both Ukraine and Russia, the ongoing conflict is likely to prevent Ukrainian farmers from harvesting and marketing their crops in this crop year.** At the same time, destroyed storage and transport infrastructure as well as port closures make exports from Ukraine increasingly difficult. Recent FAO estimates indicate that between 20 percent and 30 percent of areas sown to winter crops in Ukraine will remain unharvested during the 2022/2023 season, with the yields of these crops also likely to be adversely affected. Furthermore, considerable uncertainties surround Ukrainian farmers' capacity to plant crops during the fast-approaching spring crop cycle. In the case of Russia, although no major disruption to crops already in the ground appears imminent, uncertainties exist over the impact that the international sanctions imposed on the country will have on food exports.

47. **Economic sanctions imposed on Russia could also disrupt its imports of agricultural inputs, notably pesticides and seeds, on which the country is highly dependent.** This could result in less plantings, lower yields and lower qualities, exposing the Russian agricultural sector and global food supplies, at large, to non-negligible risks.

48. **Kazakhstan is among the top 10 exporters of wheat, barley and sunflower seed globally and the supply shortfalls from Russia and Ukraine could be an opportunity to reap higher prices on exports of these crops.** However, total cereal exports in the 2021/2022 marketing year (July/June) are forecast at about 7.5 million tonnes, 10 percent below the average volume due to lower production volumes. Insufficient precipitation amounts and higher than average temperatures between April and August 2021 had a negative impact on yields in key wheat- and barley-producing northern regions. As a result, wheat exports are officially forecast at a below-average level of 6.5 million tonnes, due to the reduced output obtained in 2021. Similarly, barley exports are projected at 800 000 tonnes, well below the five-year average volume. According to the September CPFS report total cereals exports from Kazakhstan are forecast at 8.8 million tonnes in 2022/2023, 6 percent below the average volume. Wheat exports are forecast at a near-average level of 8 million tonnes, underpinned by the favourable output expected in 2022 and the steady demand by importing countries.

49. **Nevertheless, as of September 2022, the exported volumes of wheat and wheat flour from Kazakhstan were nearly 6 million tonnes, which is 60 000 tonnes higher than the same period a year earlier, with a sharp increase of exports to Turkmenistan (from 86 000 tonnes in January-September in 2021 to 291 000 tonnes during the same period in 2022, according to TDM monthly price updates).** Volumes of exports were also higher to Afghanistan (26 percent increase) and Azerbaijan (five times higher than a year earlier). However, exports of wheat and wheat flour to Kyrgyzstan, Tajikistan and Uzbekistan declined, by 3 percent, 13 percent and 80 percent, respectively.

50. **Kazakh logistics companies raised concerns that because most Kazakh cargo is shipped through Russian ports, the major international shipping companies have refused to accept Kazakh cargo.** This includes the transhipment transit ports of Antwerp, Hamburg, Rotterdam and Mugga that refused to accept cargo from both Kazakhstan and Russia.

51. **Due to disruptions at the Black Sea for exports of Kazakh grains, there were discussions of finding alternative routes through Caspian ports** that would offer the shortest access to Europe via the Caucasus that would not pass through Russian or Belarussian territory. Therefore, the importance of the Trans-Caspian shipping route is rapidly increasing, and Azerbaijan and Georgia can take advantage of this situation. Since the start of the war, the Kazakh authorities stated that they would consider using this route for their exports, hence bypassing the Russian Federation and creating an opportunity for the South Caucasus countries to increase their role as a transportation hub between Central Asia and Europe.

52. **The Trans-Caucasus Transport Corridor has the potential to become an important route and increase its capacity, if Georgia and Azerbaijan coordinate their actions.** Apart from infrastructure development, there is a need for streamlining customs processes, improving transparency, launching transport-related joint ventures and optimizing intermodal infrastructure.

53. **Ukraine is working on redirecting trade via alternative routes, through Poland, Romania and other European countries.** Some of Ukraine's cargo has shifted to smaller ports on the banks of the Danube, but those have limited capacity. Attempts to squeeze cargo onto freight trains are running into physical barriers, caused by the different gauges used in Western and former Soviet countries, which limit the tracks' capacity to move Ukrainian cargo into the European Union.

54. **Two agreements concerning the Black Sea Trade Initiative on the safe transportation of grain and foodstuffs from Ukrainian ports were signed** on 22 July 2022 in Türkiye: (1) Ukraine, Türkiye and the United Nations Secretary-General, and (2) the Russian Federation, Türkiye and the United Nations Secretary-General. The Initiative aims to establish a corridor for the export of agricultural products from three Ukrainian ports.

55. **Globally, the capacity of other exporting countries to boost output and shipments may be limited by high production and input costs.**

2) Risks to domestic production

56. **The key factors of production and inputs that are likely to be affected by the war are labor, capital, production technologies and agricultural inputs (fuel, fertilizers, seeds and live animals for breeding).** Land does not seem to be affected by this crisis.

57. ***Labor.*** **Labor migration from rural areas is very important for Kyrgyzstan, Tajikistan and Uzbekistan. With the expected sharp decline in labor demand in Russia, more labor would remain available to work in agriculture in Central Asia.** Since labor is not typically a binding constraint in agricultural production systems in Central Asia, it is not likely that an additional supply of labor would increase agricultural output. One possible effect could be related to the fact that in the pre-war period at least some migrant households facing a relative labor shortage used to rent out their land to more commercially oriented farms. This had net positive productivity effects as land was consolidated in more productive commercial farms rather than spread among small subsistence-oriented household farms. However, the scale of these renting-out/in operations does not seem significant, so even if it decreases somewhat, it would not affect agricultural output at the national level.

58. ***Capital.*** **Reacting to the hike in inflation, the central banks of Kazakhstan, Kyrgyzstan and Uzbekistan increased their base rates in February-October 2022 (from 10.25 percent to 16.0 percent in Kazakhstan, from 8.5 percent to 14.0 percent in Kyrgyzstan, and from 14.0 percent to 15.0 percent in Uzbekistan); the base rate in Tajikistan has been left at the pre-crisis high level of 13.25 percent.**[13] Responding to this policy change, interest rates for commercial loans to all enterprises, including agricultural firms, have increased significantly.

59. **Simultaneously, collateral requirements for loans have become stricter in many commercial banks. Thus, access to capital has suffered from the inflationary shock and the monetary authorities' response.** However, in these countries, agriculture's reliance on borrowed capital is limited; at end-2021, the ratio of outstanding bank loans to agriculture to gross agricultural output (GAO) ranged from just 4.6 percent in Kazakhstan to 10 percent in Kyrgyzstan and 16 percent in Uzbekistan. In addition, in many countries of the region a significant part of lending to the agricultural sector is subsidized by different government programs, so these loans might not be affected by the central banks' hikes to the base rate.

60. ***Production technologies.*** **In conditions of high uncertainty, many agricultural producers, especially smallholders, may decide to partially change their crop structure from cash crops to subsistence farming (e.g., producing wheat instead of vegetables). Of course, the scale of this change would be limited by external factors (crop rotation needs, administrative regulations, etc.).** One could assume that the current agricultural year would be fully served by the existing stock of agricultural machinery/components. Even if imports of some of these equipment items became more expensive due to the disruption of supply chains, this would not affect the production process in 2022.

61. ***Agricultural inputs.*** **In Central Asia, agricultural systems rely mostly on domestic inputs. In 2019, the value of imported inputs (except fuel) was at the level of 1.4 percent to 2.8 percent of GAO (Table 2).** The bulk of inputs are imported from Russia, Kazakhstan and Uzbekistan. Inputs imported from outside of the region (Europe, Türkiye, Australia, etc.) constitute just 0.1 percent to 0.9 percent of GAO.

Table 2. Imported agricultural inputs, 2019

	Kazakhstan	Kyrgyzstan	Tajikistan	Uzbekistan
Total imports of inputs, million USD	332.3	65.7	96.5	350.3
Live animals and animal feed	129.7	4.9	16.6	183.7
Seeds	66.7	11.5	45.9	102.5
Fertilizers	135.8	49.3	34.1	64.1
Total imports of inputs, % GAO	2.5	2.1	1.4	1.4
Imports from outside of the region, % of total input imports	36.4	11.4	4.4	29.4
Imports from outside of the region, % GAO	0.9	0.2	0.1	0.4

Note: Based on FAOStat (2022), using 2017-2019 averages.

62. **The use of domestic and imported inputs may be adversely affected by the high international prices for these products, for example fertilizers.** Fuel is an input which is going to become more expensive due to international oil price shocks. Kazakhstan, Turkmenistan and Uzbekistan produce most of the fuel used for agricultural needs themselves, so the governments of these countries have tools to neutralize any serious increase in prices for fuel. Rising input prices, in particular the prices of fertilizers, are expected to negatively affect the profit margins of Central Asian farmers.

63. **Kyrgyzstan and Tajikistan import almost all fuel needed for domestic consumption and the governments in these countries do not have the resources to subsidize fuel prices;** hence, agricultural producers in these countries have faced higher diesel and gasoline prices in 2022 and are likely to continue to face them in 2023.

64. **In summary, domestic agricultural production in Central Asia may experience multiple but relatively minor negative shocks from the war. This should not cause any significant decline in the agricultural output in these economies ceteris paribus.** This seems consistent with the 2022 agricultural gross value-added growth forecast of 2.5 percent for Kazakhstan, -2.2 percent for Kyrgyzstan, 4.5 percent for Tajikistan and 3.7 percent for Uzbekistan (World Bank, 2022a). In view of the reduced global supply, some countries may respond by increasing domestic production, thus offsetting some of the negative impacts projected under Aglink-Cosimo scenarios.

3) Policy-induced risks

65. **There are several ad hoc policy measures in response to potential food security issues that have been introduced or are under consideration in Belarus, Russia, Ukraine and the Central Asian countries, amid ongoing disruptions in global food markets.**

- Russia introduced a temporary export ban for grain (wheat and meslin, rye, barley and maize) to the EAEU countries as well as on the export of white sugar and raw cane sugar from Russia to non-EAEU countries. The grain export ban to EAEU countries was suspended in April 2022 while the sugar ban ended in August 2022.
- The country extended the quotas for the export of nitrogen fertilizers and complex fertilizers until 31 December 2022. The quota is around 8.3 million tonnes for nitrogen fertilizers and 5.95 million tonnes for complex fertilizers.
- On 31 March 2022, Russia introduced a temporary ban on all exports of sunflower seeds and rapeseeds from 1 April to 31 August 2022.[14] The export ban on rape seeds has been extended from 8 September 2022 until 28 February 2023. In addition, the 1.5 million tonnes quota on sunflower oil exports and a 700 000 tonnes limit on sunflower meal exports were introduced from 15 April until the end of August 2022. Also, the number of checkpoints for exports of soybeans and soybean meal was restricted, and export duties on sunflower meal and flaxseed were in effect from 1 May to 31 August 2022.
- Ukraine has introduced "zero export quotas" for live cattle, frozen cattle meat, by-products, rye, oats, buckwheat, millet, sugar, and edible salt from 6 March 2022.[15] Exports of wheat and a mixture of wheat and rye (meslin) (1001), chicken meat, and chicken eggs (0407210000) are subject to licensing by Ukraine's Ministry of the Economy starting from 5 March 2022 (there are no export quotas for these goods).
- Belarus has extended the existing ban on the exports of key grains and oilseeds,[16] for six months from 12 March 2022. Additionally, the government of Belarus extended the ban on the export of soft wheat flour for three months (15 March 2022).
- The government of Kazakhstan established quotas on wheat exports for an initial period from 15 April until 15 June 2022, equivalent to 1 million tonnes of wheat and 300 000 tonnes of wheat flour.[17]

- Kazakh Grain Union reported that the quota on wheat exports had been 50 percent filled, and that the quota on flour exports had been 87 percent filled. Nevertheless, on 15 June 2022, the government extended the export quota for wheat and wheat flour to third countries and EAEU members until 30 September 2022. The extended quota allows an additional 550 000 tonnes of wheat and meslin and 370 000 tonnes of wheat flour for export. The country has lifted these quotas as of 14 September 2022. In turn, the uncertainty around Kazakhstan's export measures may negatively impact Tajikistan and Uzbekistan, in particular, as nearly 100 percent of their wheat imports are sourced from Kazakhstan.
- At the same time, Kazakhstan's traders of wheat were obliged to first sell 10 percent of the declared volume for export at a price of 116 000 tenge per tonne (approximately $267 per tonne), which is at the level of the year earlier, to the domestic market through the State Agency Food Contract Corporation. Similarly, 10 percent of the declared intended export volume of wheat flour should be sold to the domestic market through social and entrepreneurial corporations (SECs).
- Kyrgyzstan has imposed export restrictions on key food commodities, including wheat and wheat flour, plant oils, sunflower seeds and other to countries outside the Eurasian Economic Union, for six months from March 2022. A complete ban was introduced on meat and fodder In September 2022, the Ministry of Agriculture of Kyrgyz Republic introduced a draft resolution "On the introduction of a temporary ban on the export of certain types of agricultural products from the Kyrgyz Republic" for six months.

X. Policy recommendations

66. **The current crisis started during a time when global prices for food, but also fertilizer and fuel, have reached record highs.** Generally, when formulating policy responses to an unfolding situation, Central Asian governments should strive to adhere to a set of overarching principles:
    - Keep trade in fuel, food and fertilizers open;
    - Avoid ad-hoc policy changes such as the introduction of export bans;
    - In instances where subsidies and support are provided to farmers, they should be targeted, and time bound with a clear exit strategy;
    - Adopt a social protection response to protect consumption of households instead of distorting the market prices of commodities; and
    - Develop and commit to long-term and comprehensive national food security strategies.

On a global level it is also important for market transparency, dialogue and information sharing to be strengthened, including through initiatives like the G-20's Agricultural Market Information System (AMIS), to facilitate the coordination of policy actions. Against the background of strong economic integration between the countries of Central Asia and Russia – with Central Asia's high dependency on Russian markets for both food imports and exports – the following short- and long-term policy recommendations are made.

Short-term policy recommendations

67. **In the current context, agri-food markets and food security are subject to much greater uncertainty than in the past few decades.** As the world enters an era of uncertainty, driven by climate change and amplified by natural and man-made events, some of the conventional policy advice needs to be reconsidered. Open trade, for which this policy note advocates, should still be pursued but with more caution and additional instruments to mitigate the impact of more frequent trade restrictions, for example through boosting and improving the sustainability and governance systems of public stocks to promote food security. Other policy advice from the time preceding the current crisis remains unchanged. Addressing the long-term risks to food security and agri-food systems productivity by mitigating climate risks, promoting adaptation and a broader set of investments and policy reforms to shift the food system to a more climate-resilient and climate-smart trajectory is a critical pathway for addressing the current vulnerabilities while also managing future risks and not losing sight of longer-term priorities.

68. **In particular, at a time of already high and volatile international food and input prices, the ongoing war in Ukraine raises additional concerns about the ability of net food importing countries to ensure sufficient supplies of food.** Net importing countries need to improve the management of their public grain reserves, so they are more efficient in smoothing out price spikes. Net importing countries also need to provide direct support to the vulnerable. These countries will need to make a contingency plan to address the liquidity issues caused by higher import bills. To help these countries bear the high cost of food imports, the IMF has established a Food Security Financing Facility.

69. **It is necessary for the governments in Central Asian countries to monitor carefully the market situation in Kazakhstan and in key trading partners and refrain from imposing additional export restrictions.** Moreover, any government decisions regarding exports should be communicated to stakeholders in a transparent and timely way to minimize shocks to markets. The signing of a memorandum of understanding between ministries and the main grain exporters to ensure domestic supplies could be one of the tools to prevent formal export bans and other border restrictions on grain.

70. **As governments in Central Asia often play a role in determining (implicitly or explicitly) what is grown in any given season, they should take steps to allow farmers to take advantage of higher food prices and plant crops for which global supplies have declined.** For example, in Kazakhstan, the government may wish, in consultation with farmers and traders, to encourage wheat and sunflower seeds producers to increase the plantings of these crops in the 2022/2023 season.

71. **Strengthen public-private dialogue with the participation of agricultural producers, processing companies and exporters, through their respective associations.** This approach will ensure the generation and dissemination of timely and accurate market information. Specifically, there is a need for continuous and accurate data collection on domestic stocks of grains and other staples to support the governments in decision-making processes leading to the regulation of trade. Moreover, access to real-time indicators of supply and demand balances would enable market participants to make informed decisions, helping to avoid ad hoc reactions that can lead to additional market volatility.

72. **To sustain supplies of key staples for domestic consumption in a transparent manner and address short-term food security risks, the governments of Central Asia should maintain public stocks at adequate levels and, after careful assessment, consider their expansion in compliance with WTO rules on public stockholding for food security purposes.** Strategic reserves can play an important role in stabilizing the market in the short run against extreme shocks, however, based on historical evidence and country experiences, they are not a solution to food insecurity in the longer term and can be associated with high fiscal costs and governance challenges.

73. **Central Asian countries should simplify cross-border trade procedures to facilitate intra-regional trade, avoiding ad hoc border closures and shipment rejections that can lead to supply disruptions and food waste, while creating disincentives to traders.** This requires a political decision and appropriate implementation by government agencies at the border, such as customs. Moreover, countries should promote intraregional information sharing and market monitoring with regard to production, trade, stocks and other market variables to increase transparency in the regional market.[18]

74. **Countries should strive to provide support to vulnerable groups and strengthen social protection to enable households to cope with higher food prices.** This could include the provision of a limited-duration cash transfer to vulnerable households that is proportionate to the increased cost of the basic food basket.

Medium- to long-term policy recommendations

75. **Central Asian countries should avoid policies focusing on import substitution as a goal** and target instead improvements in the quality of production and creating an enabling environment for private and foreign investment in processing, storage facilities, and road/rail infrastructure.

76. **For example, to maintain adequate levels or expand public food security stocks**, the Central Asian countries should consider improving storage capacity, both in privately owned food processing industries and government-owned facilities, which could potentially constitute a viable opportunity for improving food security through targeted investments.

77. **Moreover, governments should facilitate and diversify sources of food imports as well as exports.** This requires reducing trade costs by making customs procedures more transparent and efficient, adopting digital trade tools (for example, electronic phytosanitary certificates), and ensuring that sanitary and phytosanitary measures applied to food imports are implemented using risk-based approaches.

78. **Central Asian countries should further develop and strengthen trade routes.** For Kazakhstan, an obvious priority is to develop infrastructure and logistics along the multimodal Trans-Caspian route. Other Central Asian economies may also benefit from this infrastructure when available. The transit routes from Kazakhstan, Kyrgyzstan and Tajikistan via China to the Pacific and/or Indian Ocean ports are in need of development.

79. **Regional cooperation in the agrifood sector between Central Asian countries should be strengthened.** One way of achieving this is to support the formation of country or regional agro-industrial clusters, which would enable the creation of stronger linkages between all actors and institutions in the agrifood chains and lead to improved production and cross-border trade in priority sectors (wheat and wheat processing, oil and sugar production, dairy production and fertilizers. An in-depth analysis is needed to identify the sectors). As a pilot project this seems particularly relevant for Kazakhstan and Uzbekistan, the economies with large domestic markets and common borders with all/most countries of the region as well as others (e.g., Afghanistan and China).

80. **In 2020 Turkmenistan has started preparatory work and Uzbekistan resumed a process for accession to the World Trade Organization (WTO).** Active engagement in these processes and joining the WTO would make the trade regimes of these countries more transparent, encourage the adoption of international standards and trading practices, attract investment and hence support economic growth, poverty reduction and food security in these countries.

81. **In Kyrgyzstan and Tajikistan, there is a concern about the possibility of an influx of returning working migrants from Russia (even though there is no evidence yet of that occurring) and there is therefore a need for job-generating projects in rural areas, which could be achieved through the development of agro-industrial clusters.** Creating an enabling environment to attract foreign investors would be important in this context.

82. **To safeguard food consumption, in particular for vulnerable groups, social protection programs need to be further improved.** Better targeting of social protection and setting up systems to scale up quickly and at low administrative costs requires identifying and tracking the needs and preparing the lists for provision of assistance, among other things. The importance of boosting the adaptability of social systems to rapid deployment in times of crisis is an important lesson that the countries learned during the COVID-19 pandemic.

83. **Finally, the governments of Central Asian countries should develop and commit to long-term, comprehensive national food security strategies, with concrete measures to boost the resilience of food systems.** The countries of Central Asia should facilitate the adoption of new technologies by increasing investment in research and development and extension services, with the goal of sustainably increasing agricultural productivity. This also means that countries should prioritize the use of renewable energy to reduce their dependence on energy exports and imports. This is particularly important for Kazakhstan which is highly dependent on fossil fuels for domestic energy generation and exports. Expanded use of renewables and the introduction of energy-saving technologies is an obvious priority for other Central Asian countries, as well.

End Notes

1. This paper was prepared by a team comprising Ekaterina Krivonos (Senior Economist), Iryna Kobuta (Economist) and Alfinura Sharafeyeva (Consultant), with contributions and input from Jakob Rauschendorfer (Economist), Anatole Goundan (Consultant) from FAO Markets and Trade Division and by Irina Klytchnikova (Lead Agriculture Economist, World Bank Agriculture and Food Global Practice). The authors thank World Bank staff who have reviewed and provided comments on this technical paper: Sergiy Zorya (Lead Agriculture Economist, SCAAG); Bakhrom Ziyaev (Economist, EECM1); Ilyas Sarsenov (Senior Economist, EECM1); Sjamsu Rahardja (Senior Economist, EECM1); William Hutchins Seitz (EECPV); Metin Nebiler (Economist, EECPV); Deborah Winkler (Senior Economist, ETIRI); Aira Htenas (Agricultural Economist, SCAAG); Ghada Elabed (Senior Agriculture Economist, SAGGL); Joshua Gill (Agriculture Economist, SAGGL); Hanane Ahmed (Senior Agriculture Economist, SAGGL). The authors are thankful for the overall guidance and comments provided by Jean-Francois Marteau (Practice Manager, IAWT4, formerly Country Manager for Kazakhstan); Naveed Naqvi (Country Manager for Kyrgyz Republic); Jane Ebinger (Sector Leader for Sustainable Development, Central Asia Region); Suzy Yoon (Sr. Operations Officer, CA Region) and Tatiana Proskuryakova (Country Director for Central Asia Region).
2. The survey results do not suggest that food insecurity is worsening, overall, since the crisis. The impacts are very notable on prices (respondents are very worried about food prices) but this has not yet translated into more food insecurity in most cases (in fact, in most cases it has improved over the past few months). There are exceptions (there was a spike in Uzbekistan on one question of food insecurity, out of three).
3. Food from maize, for example, comprises the amount of maize, maize meal and any other products derived therefrom available for human consumption. Food from milk relates to the amounts of milk as such, as well as the fresh milk equivalent of dairy products. Food "supply" or "dietary energy supply" should not be equated with food "consumption" since the indicator does not capture any information around access or availability of food but is merely an indicator of food supply at the national level. "Food supply" or "dietary energy supply" also does not account for food losses occurring at the retail distribution level, plate waste, or other non-food uses at the level of the household, or the individual (Tufts, 2022, FAO 2021).
4. While the direct contribution of sunflower oil to food supply in caloric form is relatively small, the product is widely used in the preparation of foods (e.g., baking, frying, roasting). Interrupted supplies due to the war in Ukraine are likely to increase demand for substitutes (e.g., cottonseed oil or palm oil).
5. Hence for Kazakhstan, these shares do not reflect a "dependency" but simply illustrate the share of imports accounted for by Russia and Ukraine at the product group level.
6. Roman Mogilevskii. *Macroeconomic and agrifood trade implications of the war in Ukraine for the economies of Central Asia.* Unpublished note prepared as an input to this report. May 2022.
7. https://www.fao.org/3/cc2300en/cc2300en.pdf

8. Resolution of the President of the Republic of Uzbekistan on additional measures to implement the market principle in the growing and sales of grain: https://www.lex.uz/ru/docs/6038087.

9. For more details on the FAO-OECD Aglink-Cosimo model see here. Assumptions are based on work first presented in a March 2022 FAO report with simulations based on information available in late February 2022.

10. Maersk, the second largest container shipping company, has announced a temporary stop to container shipping to Russia.

11. The figures present a high certainty in the trends of the undernourished rather than the absolute numbers of undernourished. The methodology for defining undernourishment in the Aglink-Cosimo model is different than the WFP measure and cannot be compared.

12. For a global analysis of these risks please refer to https://www.fao.org/3/cb9236en/cb9236en.pdf.

13. https://tradingeconomics.com/tajikistan/indicators

14. http://government.ru/news/45007/

15. In essence, this temporarily introduces an export ban on these products. Exports can take place when the quota becomes positive. Products exported within the allocated quota volume will be subject to licensing by the MEU in the future.

16. The ban applies to the export of wheat, rye, barley, oats, corn, buckwheat, millet, triticale, other cereals, crushed grain, as well as rapeseed, sunflower seeds, beet pulp, cake, meal from rapeseed or colza seeds

17. https://www.vedomosti.ru/economics/news/2022/04/06/916847-kazahstan-vvedet-kvoti-na-eksport-zerna-i-muki

18. The region's countries have recently taken important steps to deepen regional cooperation in the agri-food sector. The representatives of the governments of Kazakhstan, Kyrgyz Republic, Tajikistan, Turkmenistan, and Uzbekistan, met to discuss the development of the Regional One Health Framework of Action to protect food systems and prevent future pandemics in Central Asia during a regional meeting in Almaty on 14 November 2022. A communique was signed affirming the commitment to deepen cooperation on OneHealth. This initiative intends to strengthen information sharing and the harmonization of standards at the regional level at the nexus of human and animal health.

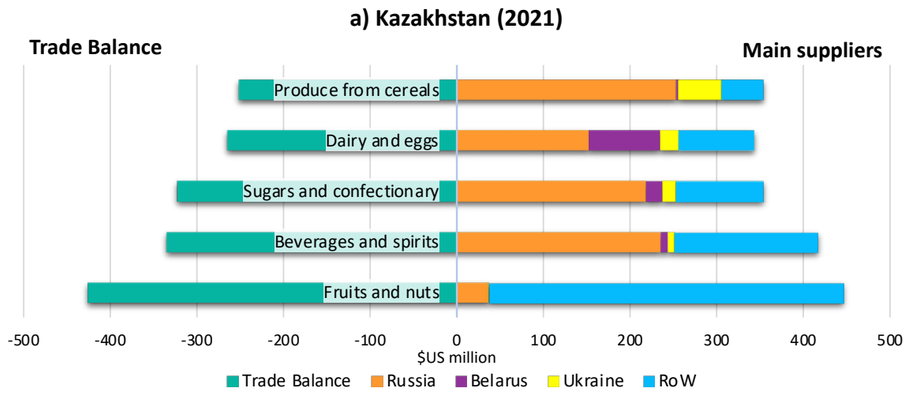
Annex Tables and Figures

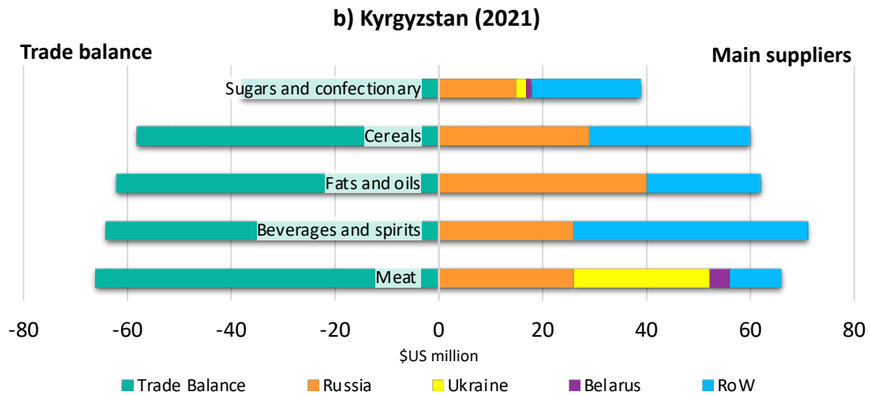
Table 1. Summary table of key trade and food security indicators

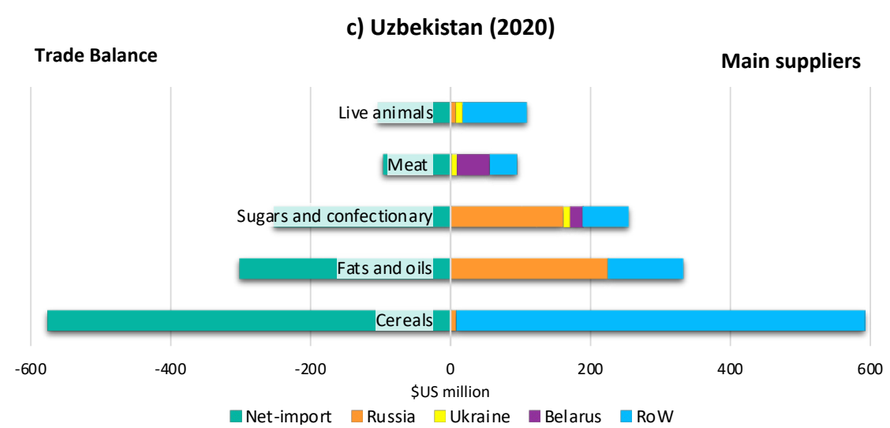
	(1)			(2)			(3)		(4)			(5)		
	Dependency on food imports* (average for 2017-2019)			Share of imports from Russia^ (2021)			Exports to Russia^		Impact of the war in Ukraine on selected indicators in CA					
									Food security**			Macroeconomic (2022, y-o-y)[1]		
	Food Import Dependency Ratio (kcals), %	Wheat Import Dependency Ratio (weights)	Share of wheat in food supply (kcals), %	Wheat, %	Sunflower oil, %	Fertilizers, %	Share of total agrifood exports (2021), %	% GDP (2019)	Wheat (flour) price growth (April 2022, y-o-y),%	Wheat producer price projection growth in 2023, %	Undernourished people projections in 2023, %	Decline in remittance value, %, 2022	Inflation rate, %	GDP growth rate, %
Kazakhstan	-53	-1.45	25	99	100	69	32	0.2	11	12	5	n.d.	8.5	2.3
Kyrgyzstan	15	0.36	37	44	93	36	35	1.0	54	n.d.	10	-33	13.2	0.9
Tajikistan	40	0.58	45	4	83	0	19	0.2	54	n.d.	9	-40	10.0	2.5
Turkmenistan	18	0.15	51	1	73	0	25	0.0	n.d.	n.d.	5	n.d.	17.5	1.6
Uzbekistan	23	0.26	42	1	62	25	32	0.3	15	n.d.	4	-50	11.8	3.4

Note: *Import Dependency Ratio = (Imports - Exports) / (Domestic Production + Imports - Exports) per product group, in weights. Net imports per capita/year = (Imports - Exports)/Population Size. Share of product in food supply = Amount of a product group available as food for human consumption, expressed as a share of the aggregate domestic food supply (in calories). Wheat=wheat and products (HS4 1001 and 1101); Sunflower oil=; Fertilizers=NPK.
^The share of imports of specified commodity groups from Ukraine is very small.
** Food Consumer Price and number of undernourished people: projected change from the base year (no impact of the war) estimations in the medium term under the severe scenario (more details about simulation analysis and assumptions are in section 8).
1 Based on World Bank and IMF projections. n.d.=no data Sources: refer to references in the main body of the text.

Annex Figure 1: Major imported product groups and Central Asia's dependency on BRU supply of these products

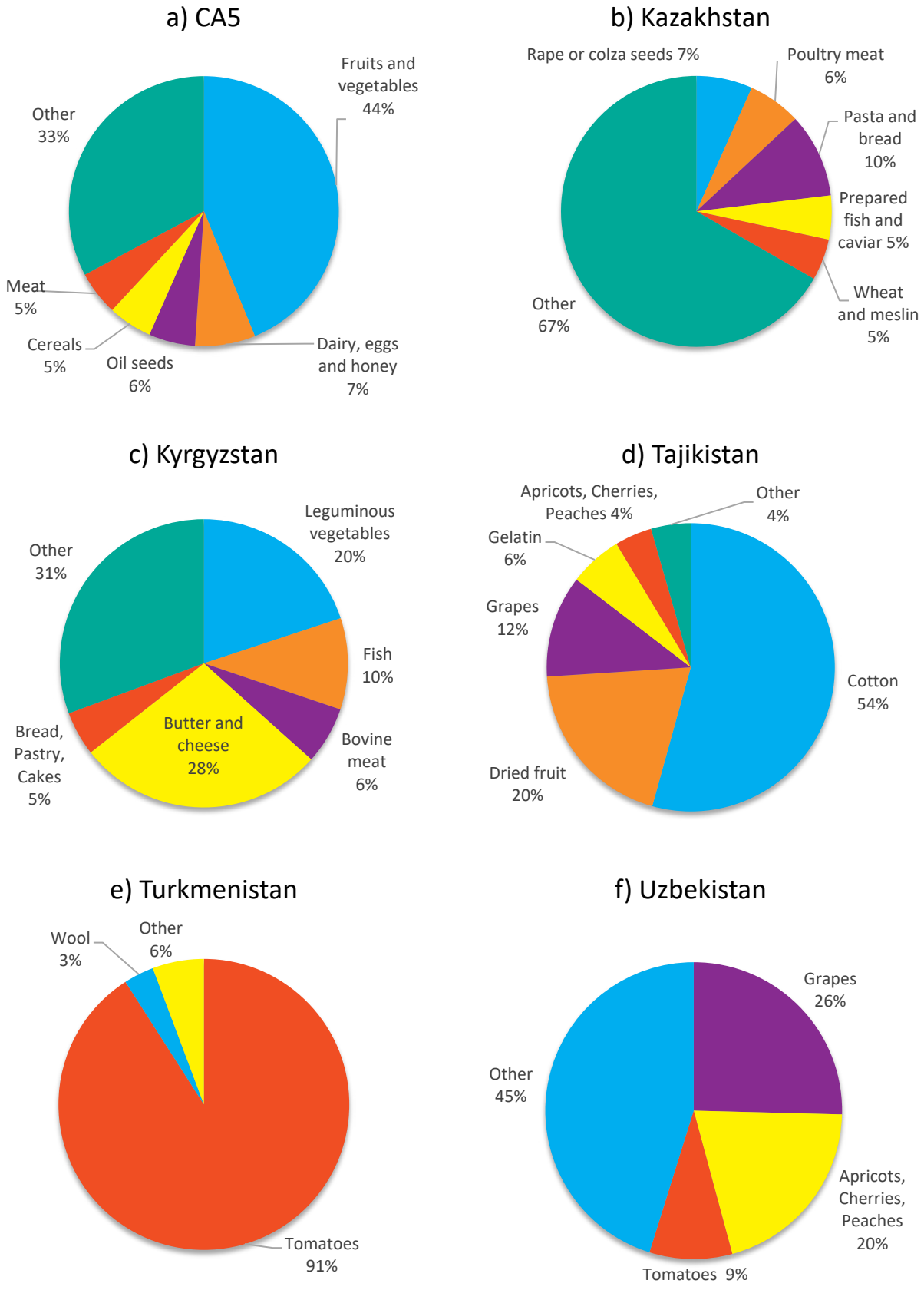






Note: Data for Tajikistan and Turkmenistan were not available at the product level.
Source: FAO-EST based on TDM data.

Annex Figure 2: Product structure of agrifood exports from Central Asia to Russia, regional and by country (percent and $ million), 2021



Note: HS 2-digit level for the regional aggregate (CA5), and HS 4 digits for each country.
Source: FAO-EST based on TDM data.

Table 2. Wheat supply/demand balance for the 2021/2022 marketing year (July/June), thousand tonnes

	Kazakhstan	Kyrgyzstan	Tajikistan	Turkmenistan	Uzbekistan
2021/2022 Domestic Availability (000 tonnes)	11 814	435	1 032	1 185	5 560
2021 production	11 814	364	852	1 100	5 400
Expected stock drawdown	-	71	180	85	160
2021/2022 Utilization (000 tonnes)	14 100	1 255	2 152	1 535	9 060
Food use	2 710	1 020	1 785	915	4 630
Non-food use	3 570	235	365	570	4 130
Exports	7 300	-	2	50	300
Expected stock build-up	520	-	-	-	-
2021/2022 Import Requirements (000 tonnes)	2 000	820	1 120	350	3 500
Per Capita Consumption (kg/year)	143	154	183	150	136

Source: FAO-GIEWS.

Table 3. Sunflower seed oil and seeds supply/demand balance for Kazakhstan and Uzbekistan in the 2021/2022 marketing year (July/June), thousand tonnes

	Sunflower seed oil		Sunflower seed	
	Kazakhstan	Uzbekistan	Kazakhstan	Uzbekistan
Beginning Stocks	33	110	25	21
Production	293	39	1,032	38
Imports	70	160	75	50
Total Supply	396	309	1,132	109
Exports	75	0	150	0
Domestic Consumption	245	275	770	95
Ending Stocks	76	34	212	14

Source: USDA.