

COUNTRY BRIEF

The global food and economic crisis' impact on food system resilience: Kyrgyz Republic



Background

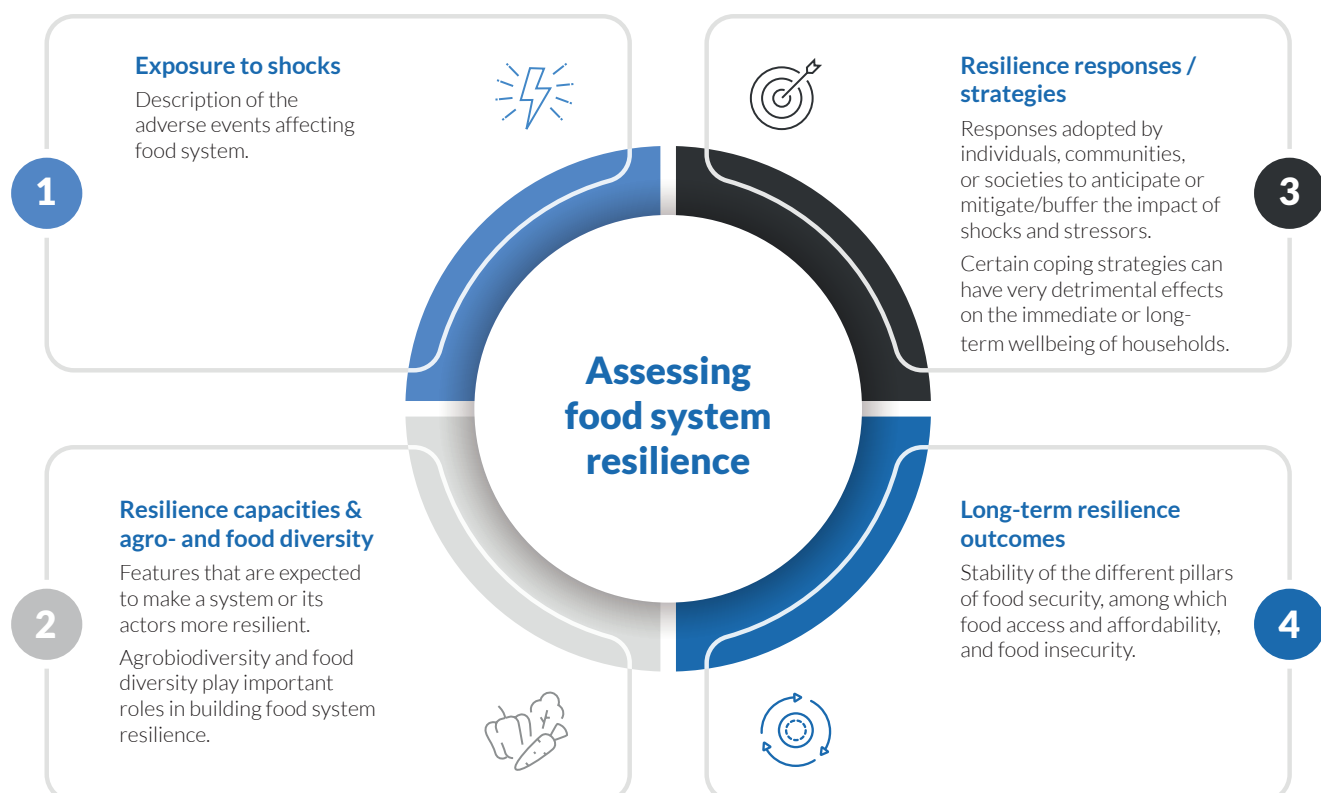
The global food and economic crisis heightened inequalities and vulnerabilities in a world still confronting the effects of the COVID-19 pandemic and the effect of the ongoing climate change. The ramifications of the conflict between the Russian Federation and Ukraine has had major implications for food security and diets across the world, given both countries' key roles in global food markets and the Russian Federation's prominence in global energy trade. In this context, food system resilience is crucial to maintain or adapt its functions in the face of shocks, and ultimately for system sustainability. Through a series of key indicators, this brief describes how the food system has been affected by this ongoing crisis, provides an overview of its resilience and potential opportunities for building resilience further.

Assessing food system resilience

Food system resilience is defined as “the ability of different individual and institutional food system actors to maintain, protect, or quickly recover the key functions of that system despite the impacts of disturbances”¹. Drawing from the conceptual framework established by the Food Systems Countdown Initiative², food system

resilience was measured through 4 main indicator domains. Findings presented in this section were derived from national-level data, and would therefore not enable the detection of likely food system subnational variabilities.

Figure 1. Food System Resilience Domains.



¹ Fanzo J, Haddad L, Schneider KR, Béné C, Covic NM, Guarín A, et al. Viewpoint: Rigorous monitoring is necessary to guide food system transformation in the countdown to the 2030 global goals. *Food Policy*. 2021;104

² <https://www.foodcountdown.org/about>

HOW HAS KYRGYZ REPUBLIC BEEN EXPOSED TO SHOCKS SINCE 2020?

In the last 3 years, the Kyrgyz Republic has faced various shocks and stressors including, but not limited to the impacts of the conflict between the Russian Federation and Ukraine and the COVID-19 pandemic, that have affected the food system and its resilience in various ways. A number of these stressors stem from climate change, including melting glaciers, abnormal dryness in 2022 and 2023, and natural resource-related conflicts with Tajikistan, Uzbekistan and Kazakhstan in 2021 and 2022/2023, respectively³.

Like the rest of the world, the Kyrgyz Republic was hit by the COVID-19 pandemic in March 2020. To minimize COVID-19 spread, the government rapidly implemented strict containment strategies such as school closures and restrictions of movements and public gatherings among others, which can impact various domains of the food system (eg. supply chain, consumer environment, consumer behaviors). These measures were progressively lifted over the next two years. The country also adopted supportive economic policies such as income support for the population (e.g., cash allowances for poor families with children, and unemployment support for those who were laid off), following the same timeline, but maintained them at a high level from mid-2021 onwards (Figure 1).

While the Kyrgyz Republic currency (Som, KGS) exchange rate – relative to the US dollar (USD) – has been stable since 2016, the first two years of the COVID-19 pandemic was marked by a depreciation of the Som: 70 KGS per USD in 2019 up to 85 in 2021. The exchange rate stagnated at a high level in 2022 (84 KGS/USD) (Figure 2).

The Kyrgyz Republic is exposed to significant natural hazards, experiencing an average of 200 emergencies annually, resulting in approximately US\$30-35 million in damages and losses⁴.

Earthquakes are the main contributor to economic losses, with notable events in 1992, 1997, and 2008 causing over 130 fatalities, impacting nearly 150,000 people, and resulting in almost US\$200 million in losses⁵. Floods also pose a substantial threat, affecting about 80,000 people each year, with estimated losses of US\$70 million⁶. Other hazards, such as landslides, mudflows, and avalanches, accounted for 8%, 39%, and 27% of total disasters and emergencies, respectively, between 2012-2019⁷.

Due to a combination of political, geographic, and social factors, the Kyrgyz Republic is recognized as vulnerable to climate change impacts, ranked 75th out of 181 countries in the 2020 ND-GAIN Index⁸. In its annual country report⁹ 2020, WFP noted that in addition to the economic crisis, weather anomalies had a substantial impact on the food security of households, especially farmers. Approximately one in five farmers in project-targeted areas cited unfavorable weather conditions as a key challenge during the planting season. Abnormal spring frosts in April caused substantial damage to fruit and vegetable crops. Access to irrigation was another major concern in 2020, with lower precipitation levels observed since the beginning of the year, particularly in Chuy, Batken, Osh, and Talas provinces. In addition, an August 2021 WFP Situation Report¹⁰ documented abnormal dryness conditions and lower levels of irrigation water in Chuy Province, which is home to 31.5 percent of the country's total planting area.



³ Kyrgyz Republic: UN Sustainable Development Cooperation Framework 2023-2027

⁴ Global Facility for Disaster Reduction and Recovery. Country Profile – Kyrgyz Republic (2016).

⁵ United Nations Economic Commission for Europe (UNECE). Country Profiles on the Housing Sector: Kyrgyzstan (New York and Geneva: United Nations, 2010).

⁶ World Bank and GFDRR. Europe and Central Asia: Country Risk Profiles for Floods and Earthquakes (Washington, DC: World Bank, 2016).

⁷ Ministry of Emergency Situations.

⁸ The ND-GAIN Country Index summarizes a country's vulnerability to climate change and other global challenges in combination with its readiness to improve resilience. <https://gain.nd.edu/>

⁹ World Food Programme. Annual country reports - Kyrgyz Republic. 2020.

¹⁰ World Food Programme. Abnormal dryness conditions and lower amount of irrigation water impact on food security in the Kyrgyz Republic. August 2021.

Figure 2: Exchange rate 2010-2022

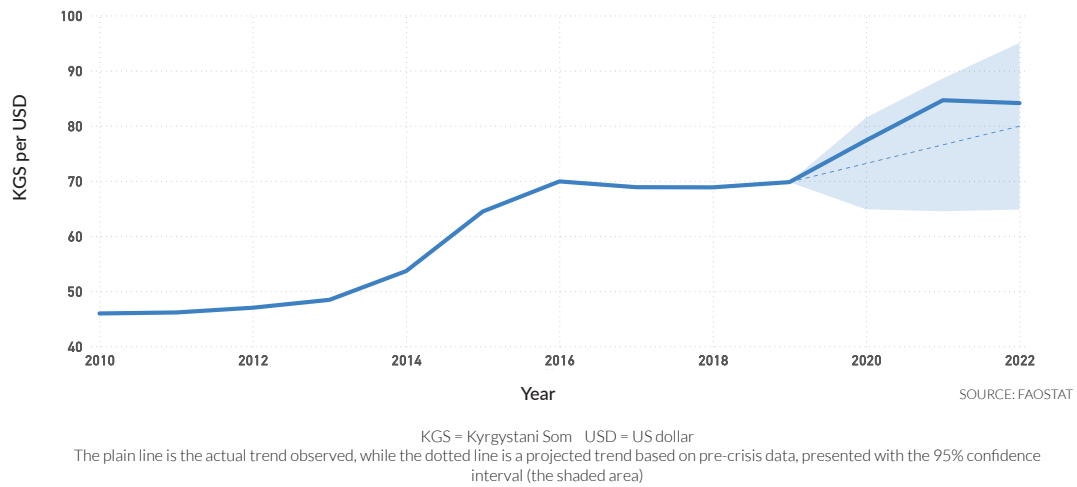
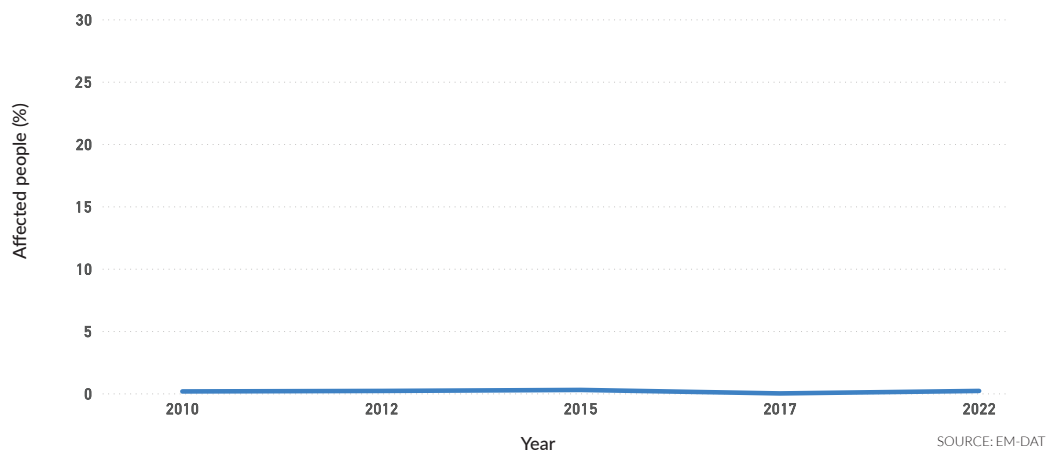


Figure 3: Ratio of affected people (from natural disasters) to the total population 2010-2022



HOW HAVE RESILIENCE CAPACITIES AND AGRO- AND FOOD-DIVERSITY BEEN AFFECTED?

According to country-level statistics, food system resilience capacities seem to have stood up reasonably well to the successive shocks.

Volumes of national imports of NCD¹¹-protect food reduced moderately in 2020 but rebounded in 2021 while volumes of NCD-risk food imports slightly decreased in 2020 and stabilized in 2021 (Figure 6). When looking at the top 3 NCD-protect food groups (in terms of volumes imported), the rebound observed in 2021 may be explained by the substantial rise in volumes of legumes imported (25 kg in 2020 to 57 kg per capita in 2021) (Figure 7).

Domestic food production, however, has been affected as reflected by the stagnation in livestock production and a downward trend in crop production in 2021 (Figure 4 and 5).

The actual trend of social capital observed during the crisis period is significantly lower than the projected trend based on pre-crisis data, suggesting that the COVID-19 pandemic and/or the global food crisis have negatively impacted social capital. Social capital – which is an important element of resilience in general as it reflects the strength of personal and social relationships, institutional trust, social norms, and civic participation in a country – has undergone a decline of 5.3 points in 2021 and only marginally improved the following years (from 51.0 in 2021 to 52.4 in 2023) (Figure 8).

Table 1: Evolution of indicators of ‘resilience capacities and agro- and food-diversity’ domain from pre-crisis to crisis period, Kyrgyz Republic

Resilience sub-domain	Indicator	Unit	Data period covered	Desirable direction	Actual direction during crisis*	Trend analysis
Food produced domestically	Crop production index (2014-2016=100)	Index	2010-2021	↑	↘	Upward trend up to 2020, fairly sharp decrease in 2021
	Livestock production index (2014-2016=100)	Index	2010-2021	↑	→	Upward trend up to 2020, stagnation in 2021
	Fertilizer consumption	Kg/ha of arable land	2010-2020	↑ or →	→	No change in 2020
Imported food	Food import – NCD-protect	Kg/capita	2010-2023	↑	↑	Sharp decrease in 2015, then slight increase up to 2019. Crisis period: moderate decline (2020) and rebound (2021).
	Food import – NCD-risk	Kg/capita	2010-2023	↓	→	Increasing trend up to 2019, marginal decrease during crisis period
Infrastructure	Mobile cellular subscription	Number / 100 people	2010-2021	↑	→	Slight decrease from 2018, keeps decreasing marginally during crisis period
Social capital	Social capital index	Index	2010-2023	↑	↓	Slight increase pre-crisis, sharp decrease in 2021 and then slight increase up to 2023

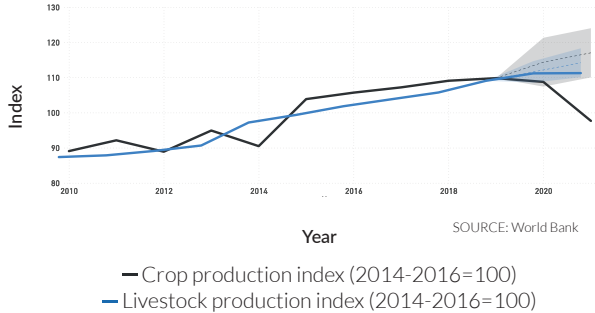
* Average crisis period compared to pre-crisis average (2018-2019 depending on data availability)

Desirable direction: ↑ denotes a higher value is more desirable, ↓ denotes a lower value is more desirable. Actual direction : a blue arrow denotes no substantial changes and stable value, a green arrow (up/down) denotes a direction similar to the desirable one, a light green arrow (diagonal up/down) denotes a direction similar to the desirable one but less pronounced, a red arrow (up/down) denotes an opposite direction to the desirable one, an orange arrow (diagonal up/down) denotes an opposite direction to the desirable one but less pronounced

Kg= kilograms; ha= hectare

¹¹ NCD: non-communicable diseases

Figure 4: Domestic production indices 2010-2021 (2014-2016=100)

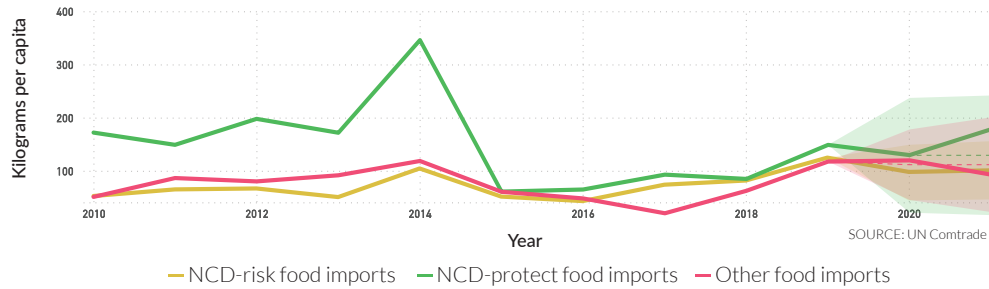


The plain line is the actual trend observed, while the dotted line is a projected trend based on pre-crisis data, presented with the 95% confidence interval (the shaded area)

Figure 5: National crop production (gross harvest), all cereals and wheat, 2014-2022



Figure 6: Country-level food imports 2010-2021



The plain line is the actual trend observed, while the dotted line is a projected trend based on pre-crisis data, presented with the 95% confidence interval (the shaded area)

Figure 7: Country-level food imports 2017-2021 (volume per capita), top 3 NCD-protect and NCD-risk food groups

This indicators shows the total volume of imports (kilograms or liters, depending on type of food) by year for the top 3 NCD-protect and NCD-risk food groups (DQQ, see figure 6). The top 3 food groups are defined as the food groups with the highest volumes imported for a given year. The NCD-protect food groups are displayed with a range of green color and the NCD-risk food groups with a range of red colors.

- Legumes
- Nuts and seeds
- Other fruits
- Other vegetables
- Vitamin A-rich orange vegetables
- Whole grains
- Baked / grain-based sweets
- Instant noodles
- Other sweets
- Sugar-sweetened beverages (soft drinks)
- Unprocessed red meat (non-ruminant)

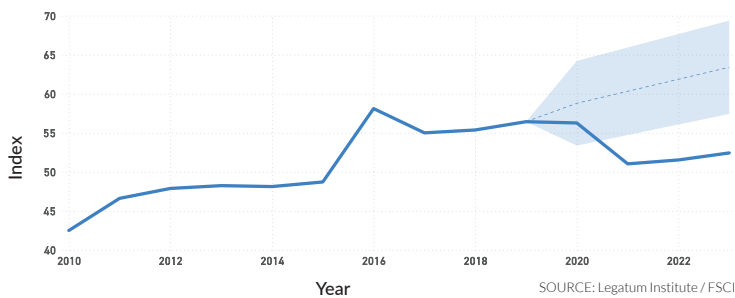
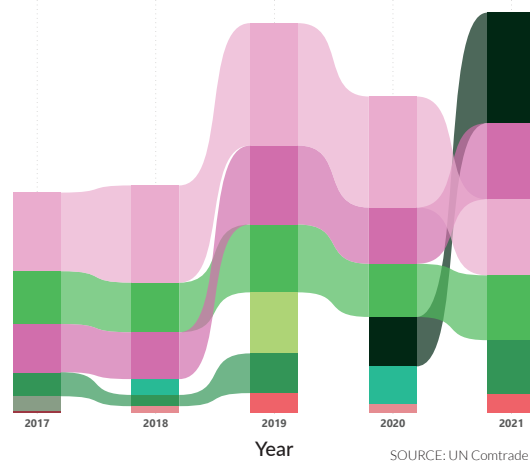


Figure 8: Social capital index 2010-2023

The plain line is the actual trend observed, while the dotted line is a projected trend based on pre-crisis data, presented with the 95% confidence interval (the shaded area)

RESILIENCE RESPONSES / STRATEGIES AND LONGER-TERM RESILIENCE OUTCOMES

While country-level food system resilience capacities seem to have coped fairly well during the crisis period, the same cannot be said for resilience strategies and longer-term outcomes.

At a national level, the adoption of stress livelihood coping mechanisms such as borrowing money to meet food needs increased sharply at the start of the crisis in 2020 but returned to pre-crisis level the following year. However, the use of crisis and emergency strategies escalated drastically in 2021, although they had declined in 2020 (Figure 9 and 10). Reducing health care / education costs has seen the largest increase (from 7% in 2020 to 26% in 2021 – Figure 10). This reflects an erosion of households' capacities to withstand shocks and future productivity.















The national average reduced coping strategy index (rCSI) – although remaining at moderate level – rose from 3.8 in 2019 to 8.2 in 2021 (Figure 11). This indicates a substantial surge in the employment of food-based coping strategies, which seems driven by households 'taking food in loan, relying on the help of friends / relatives' (54% and 40% in 2020 and 2021 respectively – Figure 12).

At a national level, food supply variability does not seem to have been strongly impacted, which indicates the ability of the food system to maintain a low variability in the supply of food products in the face of shocks (Figure 14).

In contrast, food price volatility worsened during the crisis, as shown by a substantial rise in national food prices (inflation consistently over 10% from 2020 to 2022 – Figure 13). This can be partly attributed to the ongoing depreciation of the KGS/ USD exchange rate observed in recent years, coupled with the escalating fuel prices and the significant dependence on food imports. As a result, this may have affected the Kyrgyz Republic population's purchasing power and therefore their ability to access food, reflected by the steady rise of those who could not afford a healthy diet (from 45% in 2019 to 58% in 2021 – Figure 15). Yet, the proportion of the population experiencing moderate or severe food insecurity remained constant and at a low level, even during the crisis period.



Table 2: Evolution of indicators of 'resilience responses / strategies' and 'longer-term resilience outcomes' domains from pre-crisis to crisis period, Kyrgyz Republic

Resilience sub-domain	Indicator	Unit	Data period covered	Desirable direction	Actual direction during crisis*	Trend analysis
Coping strategies	Livelihood coping strategy (LCS): - None (N) - Stress (S) - Crisis (C) - Emergency (E)	% population	2018-2021			Sharp decrease of % population not using any negative LCS in 2020, but increasing trend in 2021 In 2020, sharp increase of % population using stress LCS, slight decrease of those using crisis and emergency LCS, but upward trend in 2021
	Reduced Coping Strategy Index (rCSI)	Index	2018-2021			Decline in 2019, upward trend during crisis period (2020 and 2021)
Food price volatility	Food price annual inflation	%	2010-2022			Sharp increase in 2020 and 2021, marginal decrease in 2022 (still high inflation level)
	Food Price Anomalies (IFPA), wheat	Index	2015-2022			Sharp increase in 2020 but reverse in 2021, moderate increase in 2022
Food supply variability	Food supply variability	Kcal / capita / day	2010-2021			Marginal increase during the period crisis
Food security	% population experiencing moderate or severe food insecurity	% population	2017-2021			No change during the crisis period
	% population who cannot afford a healthy diet	% population	2017-2021			Decreasing trend pre-crisis while steady increasing trend during crisis

* Average crisis period compared to pre-crisis average (2018-2019 depending on data availability)

Desirable direction: ↑ denotes a higher value is more desirable, ↓ denotes a lower value is more desirable. Actual direction: a blue arrow denotes no substantial changes and stable value, a green arrow (up/down) denotes a direction similar to the desirable one, a light green arrow (diagonal up/down) denotes a direction similar to the desirable one but less pronounced, a red arrow (up/down) denotes an opposite direction to the desirable one, an orange arrow (diagonal up/down) denotes an opposite direction to the desirable one but less pronounced

IFPA = indicator of food price anomalies; Kcal = kilocalories

Figure 9: Households' livelihood coping strategies 2018-2022, country level

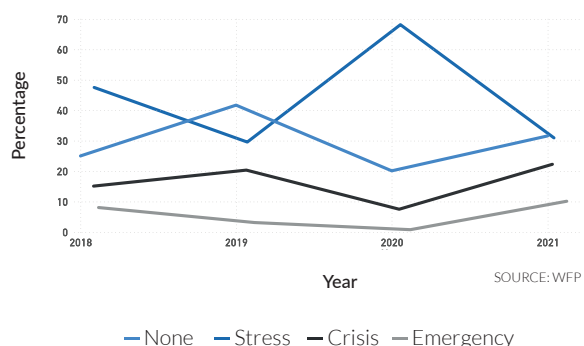


Figure 10: Livelihood coping strategies employed 2018-2021

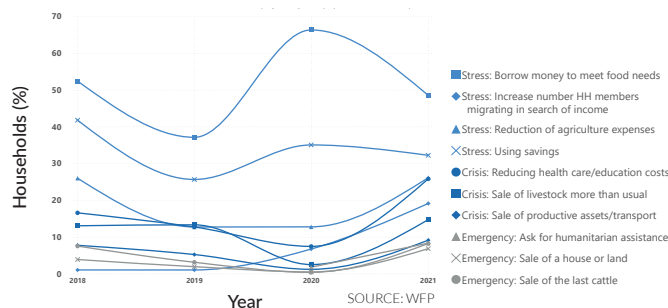


Figure 11: reduced Coping strategies index 2018-2021, country level

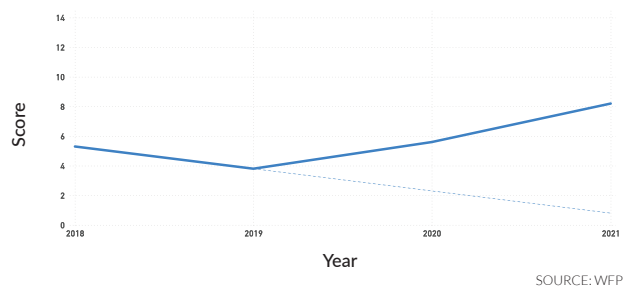


Figure 12: Food-based coping strategies employed 2018-2021, country level

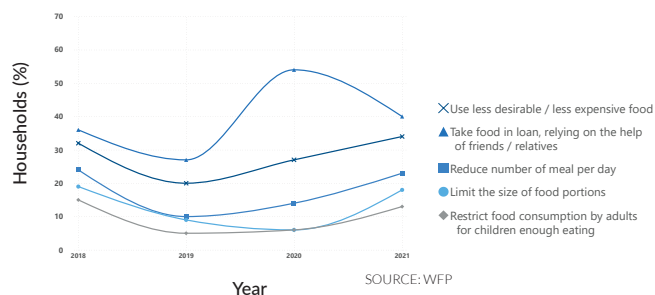
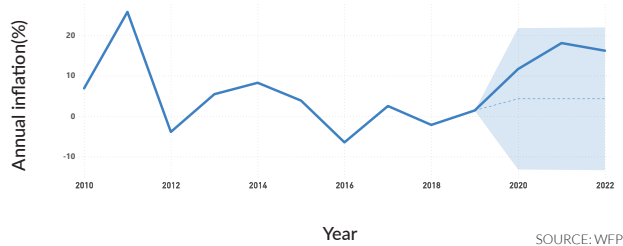
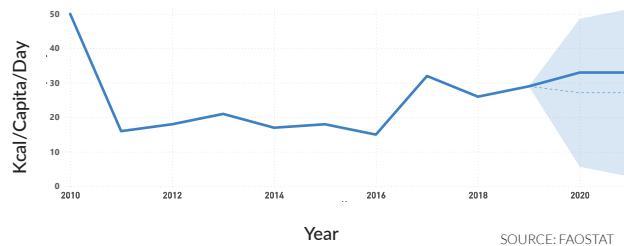


Figure 13: National food price inflation 2010-2022



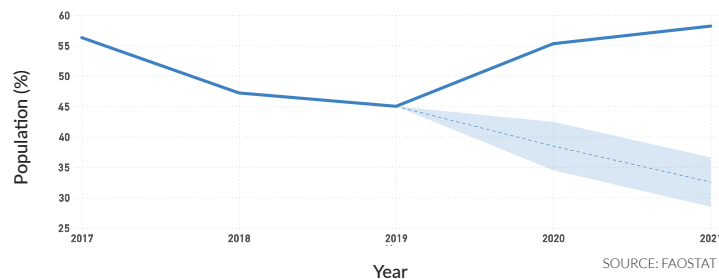
The plain line is the actual trend observed, while the dotted line is a projected trend based on pre-crisis data, presented with the 95% confidence interval (the shaded area)

Figure 14: Per capita food supply variability 2010-2021, country level



The plain line is the actual trend observed, while the dotted line is a projected trend based on pre-crisis data, presented with the 95% confidence interval (the shaded area)

Figure 15: National share of the population unable to afford healthy diet 2017-2021



The plain line is the actual trend observed, while the dotted line is a projected trend based on pre-crisis data, presented with the 95% confidence interval (the shaded area)

CONTEXTUAL SPECIFICITIES AND VULNERABILITIES

Land-locked and mountainous, the Kyrgyz Republic is expected to endure substantial shocks and stress due to climate change in the coming years. The country is vulnerable to natural hazards, particularly in rural areas, which likely will have a continued negative impact on agricultural production. The government is leading a widespread effort to convert non-irrigated land into arable land for farming, however this is a challenge given that over 90% of the territory is covered by mountains. The country's domestic water supply, which originates from glaciers and snowmelt, is largely used for agriculture. However, with significant water losses due to aging infrastructure, water scarcity is a major concern for the country and its food system.

Further challenging the food system's resilience is the fact that income growth and distribution is not equal, with the economic and social burdens of the global food crisis being disproportionately felt by poor and vulnerable communities, particularly workers in the informal economy. Migration – both internal and external—is an important external driver of the Kyrgyz Republic food system. Around a third of the country's population hovers at the national poverty line (33.3, depending upon the flow of remittances, which make up a significant portion of the country's GDP). However, since 2020 high

numbers of external migrants have returned home to Kyrgyz Republic alongside an inflow of Russian Federation migrants. A national IOM survey found that for the majority of returned migrants surveyed (66%), remittances were the main source of income for their families. Of the Kyrgyz Republic migrants who returned home in 2022 alone, 60% reported COVID-19, partial mobilization by the Russian Federation, economic sanctions, and security/conflict as the main reasons for their return.

The heavy reliance on food imports has exacerbated food insecurity. Escalating prices of staple foods have forced individuals to make compromises on the quality of their diets, opting for more affordable but often less nutritious alternatives. This cost-driven dietary shift is discussed under the coping strategies section. Furthermore, the diets of children are increasingly characterized by the consumption of unhealthy foods, a phenomenon influenced by pervasive marketing and promotional efforts. This is compounded by historical dietary trends that have seen low intake of fruits and vegetables and the prevalence of starchy foods and sugary items in the local diet.



Impact on food system: further results

Since the start of the crisis, food prices have risen steeply. In 2023, the mean food prices at national level for the food groups considered was approx. 60% higher than the base 100 (2017-2018). The trend is similar across provinces, with the highest increase observed in Batken and Jalal-Abad provinces above the national level (Figure 16).

This also translates into a rise in the daily cost of diet (by almost 50% relative to pre-crisis), with low variability across provinces (Figures 17).

However, the observed rise in food prices and cost of diet did not seem to have affected NCD-protect food sales at the national level, which trend remained similar to pre-crisis. Sales of NCD-risk food marginally declined in 2020 and steadily increased in 2021-22, while volumes of other food sales stalled at the start of the crisis (2020, 2021) but drastically increased in 2022. (Figure 19,20).

All indicators show a marked deterioration in households' food security and diet quality in 2020, although pre-crisis levels were recovered the following years (Figure 21-25).

In our survey covering 677 urban food vendors across 11 cities in various countries, the food crisis had a notable impact in the Kyrgyz Republic. This Central Asian nation, along with Bangladesh and Lao PDR, experienced the most severe challenges. The crisis resulted in supply chain disruptions due to reduced customer traffic, store closures, and lockdowns, affecting all countries, but Kyrgyz Republic was among the hardest-hit. The majority of urban food businesses in Kyrgyz Republic reported decreased income, with reductions ranging from under 25% to over 75%. Despite income declines, businesses in Kyrgyz Republic exhibited adaptability by significantly reducing operational costs, mainly through staff downsizing, alterations in sales hours, changing suppliers, and product diversification. Vendors in Kyrgyz Republic diversified their product offerings and embraced innovative distribution methods to navigate the crisis.

FOOD PRICES AND COST OF DIET

Figure 16: Changes in food prices 2011-2023 (2017-2018 = 100), country level and 7 provinces

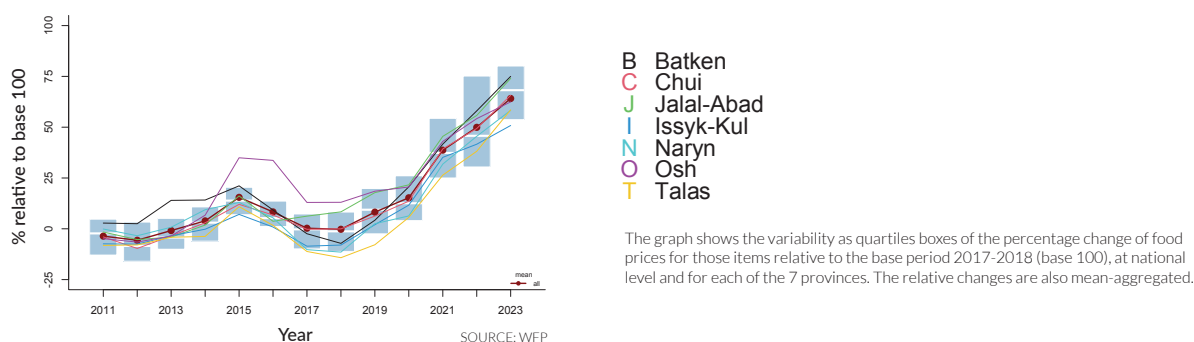
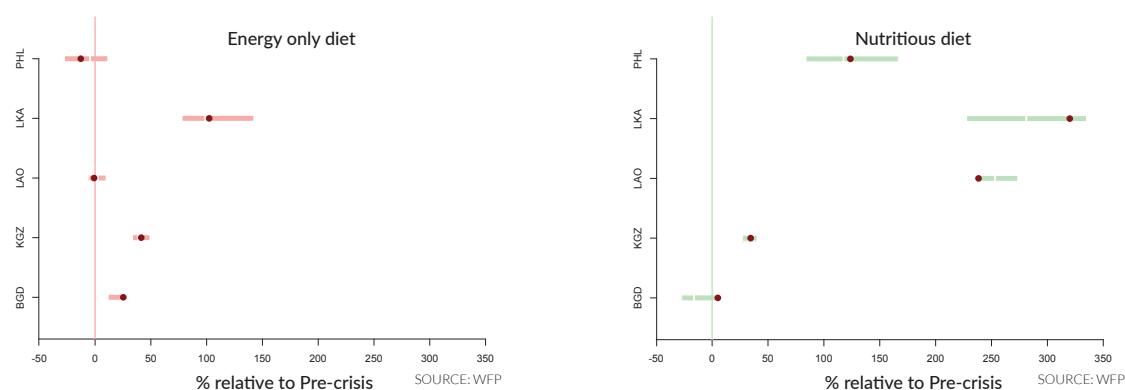


Figure 17: Change in daily cost of diet (energy only and nutritious) pre-crisis and crisis period, 5 countries



This figure shows the change in CoD crisis period relative to pre-crisis for 7 countries in the region at national level (red dot) as well as the variability across provinces (box plots showing the 25%, median and 75% illustrating the spread of the values). Pre-crisis and crisis periods:

- Bangladesh: September 2016; August 2022
 - Kyrgyz Republic, November 2017; October 2022

- Laos: March 2017; October 2022
 - Sri Lanka: June 2016; June 2022

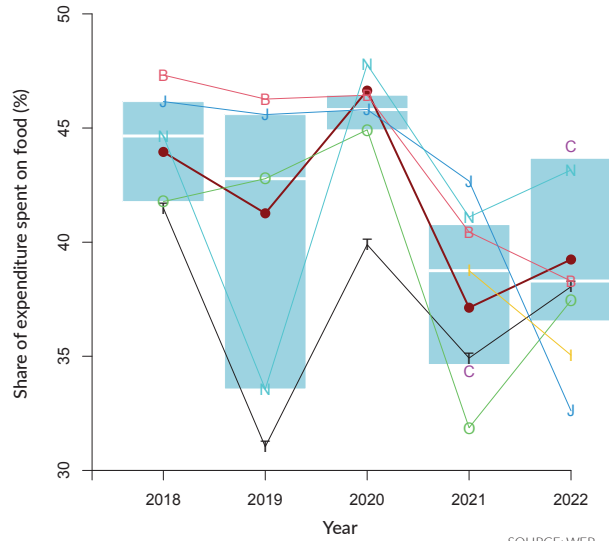
- Philippines (The): September 2015; October 2022

FOOD EXPENDITURE AND FOOD SALES

Figure 18: Per capita food expenditure share, 2018-2022, country level and 7 provinces

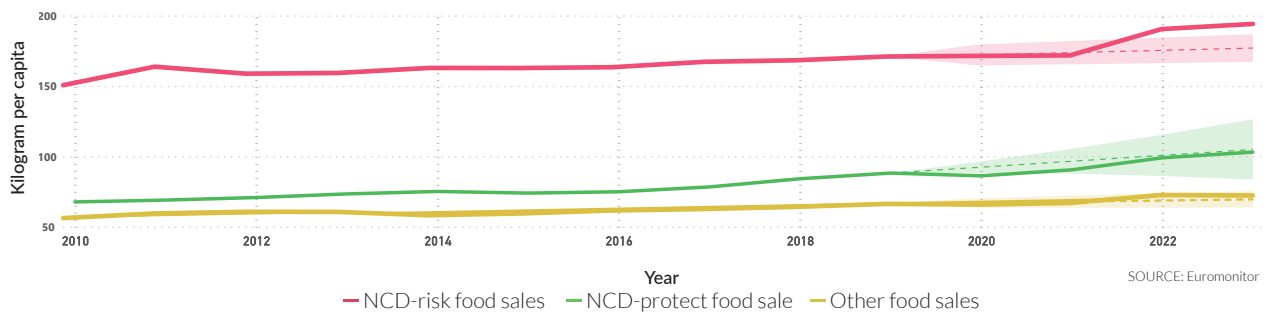
- B Batken
- C Chui
- J Jalal-Abad
- I Issyk-Kul
- N Naryn
- O Osh
- T Talas

The box plots represent the subnational variability of the FES with the limit of the boxes being the 3 quartiles (25%, median as a white line and 75%).



SOURCE: WFP

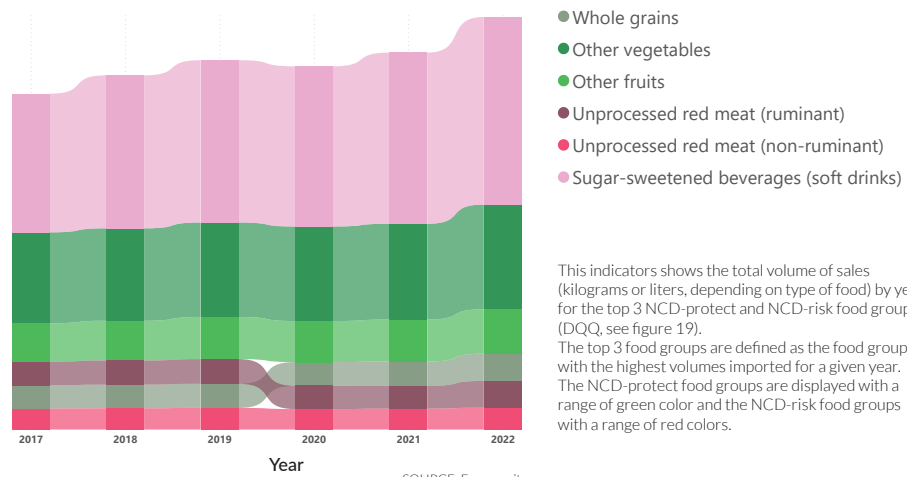
Figure 19: Food sales 2010-2023, country level



SOURCE: Euromonitor

The plain line is the actual trend observed, while the dotted line is a projected trend based on pre-crisis data, presented with the 95% confidence interval (the shaded area)

Figure 20: Country-level food sales 2017-2023 (volume per capita), top 3 NCD-protect and NCD-risk food groups



SOURCE: Euromonitor

This indicator shows the total volume of sales (kilograms or liters, depending on type of food) by year for the top 3 NCD-protect and NCD-risk food groups (DQ, see figure 19). The top 3 food groups are defined as the food groups with the highest volumes imported for a given year. The NCD-protect food groups are displayed with a range of green color and the NCD-risk food groups with a range of red colors.

FOOD SECURITY AND DIETS

Figure 21: Households' food security status 2018-2022, country level

- Food secure
- △ Marginally food secure
- + Moderately food insecure
- × Severely food insecure

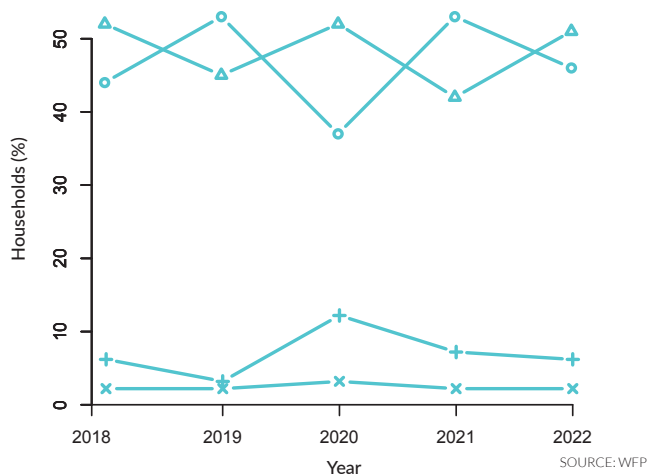


Figure 22: Households' food security status 2018-2022, country level and 7 provinces

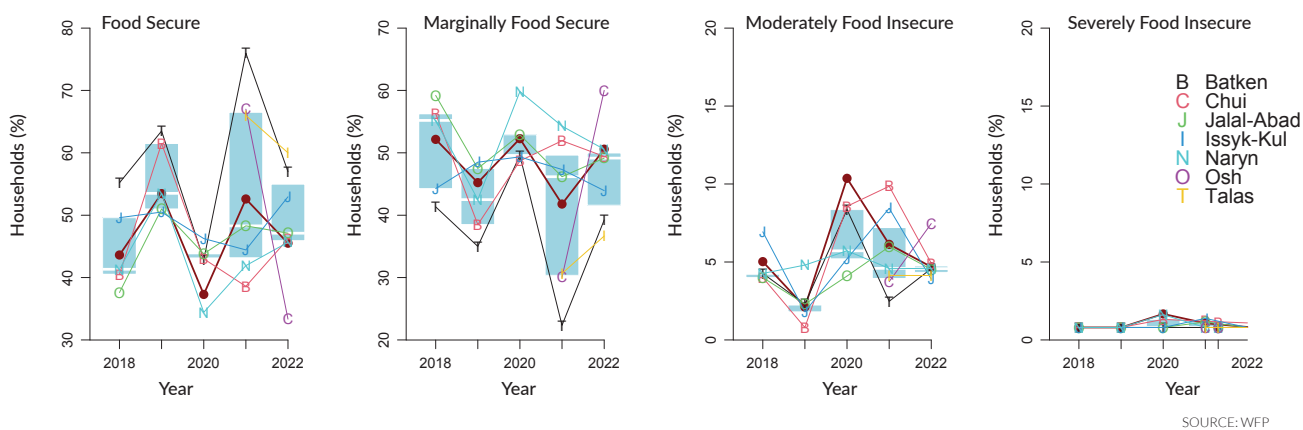


Figure 23: Households' food consumption score 2018-2022, country level

- Acceptable
- △ Borderline
- + Poor

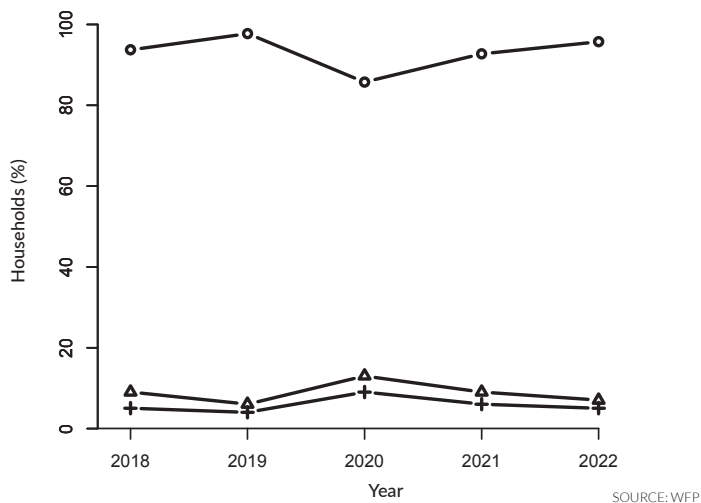


Figure 24: Households' food consumption score 2018-2022, country level and 7 provinces

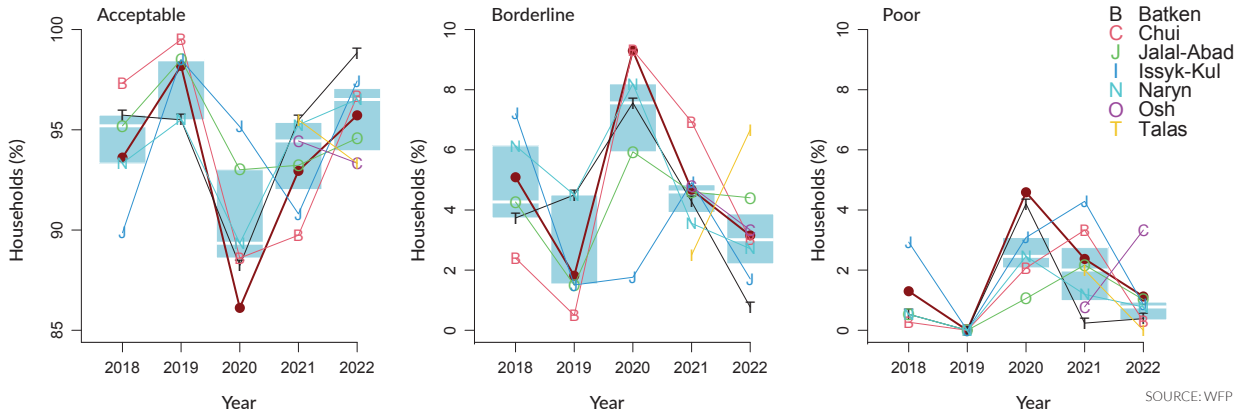
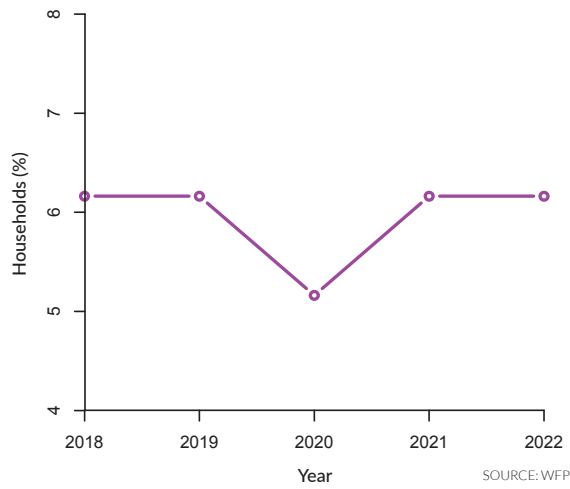


Figure 25: Households' Dietary diversity score 2018-2022, country level and 7 provinces



OPPORTUNITIES FOR BUILDING FOOD SYSTEM RESILIENCE

In the context of population growth, reduced income, as well as constrained agricultural and water resources, taking actions towards sustainability are crucial for long term resilience of the food system and its actors. Kyrgyz Republic Government has been elaborating its priorities in the National Food security and Nutrition Program (2019-2023). The new Program with focus on clusters and value-chain development and support of vulnerable groups is under final endorsement by the head of Cabinet of Ministries. The Program development was supported by WFP, FAO and UNICEF.

DIVERSIFICATION OF FOOD SOURCES AND ENHANCING AGRICULTURAL PRACTICES

This involves supporting farmers with training, providing access to quality inputs, and introducing modern agricultural technologies. By diversifying food sources and improving agricultural practices, the country can reduce its reliance on external markets and mitigate the impact of global shocks on its food supply.

DIVERSIFICATION OF FOOD SOURCES AND ENHANCING AGRICULTURAL PRACTICES

In line with the government's mountain agenda, which places the sustainability and resilience of mountain ecosystems and communities at the forefront support specialized training to farmers, ensuring access to highquality inputs that are wellsuited for mountainous ecosystems, and broader adoption of cuttingedge agricultural technologies uniquely adapted to the challenges posed by these specific environments. In particular:

Promote broader adoption of waterefficient technologies, including drip agriculture, for food production.

Despite the relatively small percentage of forested land, given the crucial role of forests in water regulation and soil conservation, scale up measures to counteract and prevent deforestation.

Support adapted livestock breeds, improved access to veterinary services, and improved use of pastures to preserve their productivity and biodiversity.

Use social and behavior change approaches through relevant platforms to incentivize high impact behaviours, including the use of climatesmart technology for agriculture. At the same time, continue to support farmers' financial access to relevant technology, products and services, particularly among vulnerable and female farmers.

By diversifying food sources and supporting the adoption of improved agricultural practices, the country can reduce its reliance on external markets, mitigate the impact of global shocks on its food supply, and build resilience in the face of climate change.

SUPPORT AND STRENGTHEN LOCAL MARKETS:

By encouraging the population to support local producers and markets, the country reduces its dependence on imports and external supply chains. Encouraging sustainable agricultural and environmental practices ensures longterm food security, while preserving the environment. Among smallscale farmers, promote valueadding agroprocessing to increase access to resources. In particular, ensure that female farmers are targeted to simultaneously support food security, women's empowerment and positive nutrition outcomes.

SCALE UP EXISTING SOCIAL CAPITAL REBUILDING AND CRISIS PREPAREDNESS INTERVENTIONS:

The Kyrgyz Republic has the potential to amplify its investment in programs fostering community reconnection and rebuilding trust among individuals. Notably, the government's ongoing 'social contract' active labor market program, initially piloted with WFP and now expanding with support from the World Bank and national budget funding, stands as a valuable initiative for trustbuilding and incentivizing poverty graduation. Concurrently, there is an opportunity to scale up communitylevel crisis preparedness and education programs, championed by both WFP CO and the government, enhancing households' ability to anticipate, respond to, and recover from shocks. Moreover, the Kyrgyz Republic CO is actively engaged in implementing mesolevel indexbased climate risk insurance and anticipatory action, focusing on livelihood support measures. Recognizing WFP and stakeholders' pivotal role in supporting the Government's commitments to Sendai at the community and local government levels, it is imperative to synergize with these existing efforts for a more comprehensive and impactful approach.

SUPPORT AND SCALE UP AFFORDABILITY OF HEALTHY DIETS AND PRICE STABILITY MEASURES:

The Kyrgyz Republic is well positioned to persist in supporting and expanding strategies that enhance the accessibility of nutritious foods across all income groups and contribute to overall food security. By implementing measures to stabilize food prices, particularly for essential items, the government can proactively mitigate price spikes during crises. Ensuring affordable and healthy diets is instrumental in advancing broader food security objectives. WFP is actively involved in supporting the national school meals program, facilitating the conversion of tea and bun offerings to hot, nutritious meals funded by the government. This initiative addresses immediate nutritional needs at a critical age, and presents a valuable opportunity for further expansion. Additionally, WFP, in collaboration with the State Material Reserve, the Ministry of Emergency Situations, and the Ministry of Agriculture, is engaged in joint fundraising efforts to support the national food crisis committee and action plan. Learning from the challenges posed by closed borders during the COVID pandemic, the State Material Reserve has increased food prepositioning, underscoring the importance of proactive measures in crisis preparedness and response.

ENHANCED FOOD SUPPLY CHAIN AND MONITORING SYSTEMS:

Given that the Kyrgyz Republic is landlocked and import dependent, the food supply chain is particularly vulnerable to interruptions caused by a number of potential shocks and stressors, whether they be local, regional or global. The Kyrgyz Republic, in particular, is subject to weather related events or hazards, conflict driven by natural resource constraints, and trade restrictions, such as import/export bans imposed by neighboring countries. In light of the country's food system vulnerabilities, a key recommendation is to establish or enhance monitoring and early warning systems in the event of a shock. These systems should extend beyond weather related events and hazards to encompass a broader range of disruptions. This proactive approach will enable timely response, and buffer the food supply chain against diverse challenges, including those arising from trade restrictions and other external shocks.

ENSURE THAT FOOD SECURITY SOCIAL SAFETY NETS ARE NUTRITION-SENSITIVE :

Establishing food security safety nets for vulnerable populations encompasses a spectrum of social protection initiatives, including targeted assistance programs, social welfare endeavors, and emergency relief measures. Ensuring that these social protection measures are nutrition sensitive is critical to maximizing synergies and building the resilience of the most vulnerable individuals. In particular, the integration of nutrition SBC into these social protection initiatives is pivotal in empowering household members to make optimal dietary choices and securing positive nutrition outcomes. The evidence based synergies between social protection and nutrition SBC contribute to resilience building at both individual and community levels. Any SBC efforts must include considerations related to affordability, given the high and rising cost of diet, as well as entrenched cultural consumption patterns. Aligning with recommendations from WHO and Unicef, the Kyrgyz Republic WFP CO advocates the use of taxation as a tool to reduce consumption of products known to contribute to poor health outcomes (e.g., alcohol, smoking, sugar, salt) while concurrently funding social protection measures. This integrated approach aligns with global best practices and ensures a comprehensive strategy to improving nutrition outcomes.

Notes on methodology

DATA SOURCES AND METHODOLOGY

For assessing the impact of food and economic crises on diets among vulnerable groups across urban and rural areas in selected countries, we employed a multi-faceted methodology. Primary Data Collection: We conducted food vendor surveys in various cities to understand how the COVID-19 pandemic and the ramifications of the conflict between the Russian Federation and Ukraine affected businesses in the food sector. Secondary Data Analysis: We analyzed data from diverse sources, including food trade data, the Euromonitor International market sales database, and Cost of Diet data from the Fill the Nutrient Gap (FNG) initiative by WFP RBB. This analysis helped us examine changes in food imports, assess sales of both NCD-protect and NCD-risk food items, and study the affordability of diets, particularly for vulnerable groups. Modeling: We utilized economic shocks models to explore how change in food imports and sales affect food security and diets. We used techniques like Principal Component Analysis, Canonical Correlation Analysis, t-SNE, and Multivariate Random Forest to understand how changes in the food environment, income, and inflation influence food security.

To evaluate food system resilience, we selected specific indicator domains, curating data from various sources to understand changes over time and trends. We assessed food system resilience through various indicators, covering economic stability, natural hazard impact, COVID-19 stringency, domestic food production, imported food percentages, infrastructure, social capital, coping strategies, food price volatility, food supply stability, and food security. These indicators provided a comprehensive perspective on resilience across economic, environmental, and social dimensions. We also conducted semi-structured interviews with experts from WFP country offices to gather qualitative insights and identify opportunities to enhance resilience. Ethical standards were upheld throughout the study, with participants providing consent, data privacy and confidentiality being respected. Our research adhered to the TRUST code, a global code of conduct for equitable research partnerships.

The research was conducted between January 2023 and November 2023.

LIMITATIONS

For some indicators, there was limited data available, which restrained the ability to conduct further analyses on specific food system areas or to assess the impact of the current crisis. For example, several indicators for food system resilience only had data available up to 2020 or 2021 (e.g., fertilizer consumption, coping strategies indicators, food supply variability, food security indicators), therefore the effect of the ramifications of the conflict between the Russian Federation and Ukraine - which started in February 2022 - could not be captured. Furthermore, analysis of the changes in food expenditure and income was limited by the lack of data for the Kyrgyz Republic in the Euromonitor database.

For indicators related to food security and diets (e.g., food security status, food consumption score), data was collected for 5 provinces only (out of 7 in total) up to 2021, so the results presented may not be entirely representative of the whole country. From 2021, the two other provinces were included, which may have introduced bias in the results and therefore in the assessment of the effect of the crisis.

With respect to food system resilience, the analysis was conducted at the level of the country, potentially masking subnational variabilities (e.g., across different provinces, or across urban/rural areas) and/or disparities among specific groups (e.g., most vulnerable groups). Further research would be warranted to shed light on these variations.

DEFINITIONS OF KEY TERMS

Crisis period: The on-going food and economic crisis results from a combination of two main shocks: the COVID-19 pandemic (from March 2020) and the ramifications of the conflict between the Russian Federation and Ukraine (from February 2022).

Food system: All the elements (environment, people, inputs, processes, infrastructures, institutions, etc.) and activities that relate to the production, processing, distribution, preparation and consumption of food, and the output of these activities, including socio-economic and environmental outcomes (HLPE, 2017).

INDICATOR DEFINITIONS

Indicator domain	Indicator	Definition	Data source
Exposure to shocks	Exchange rate	Annual exchange rates. Local currency units per US dollar.	FAOSTAT
	COVID-19 Stringency Index	Composite indicator calculated by using nine scaled indicators, including eight containment and closure policy indicators (school closing, workplace closing, cancel public events, restrictions on gatherings, close public transport, stay at home requirements, restrictions on internal movement, and international travel controls) and one indicators of public information campaigns, rescaled to a value from 0 to 100 (100 = strictest).	OxCGRT
	COVID-19 Economic Support Index	Composite measure based on four indicators: direct transfers to people not working due to the pandemic; debt relief for households; fiscal spending to stimulate the economy; and international support, rescaled to a value from 0 to 100 (100 = highest).	OxCGRT
Resilience capacities and agro-food diversity	Crop production index (2014-2016 = 100)	Agricultural production for each year relative to the base period 2014-2016. It includes all crops except fodder crops. Regional and income group aggregates for the FAO's production indexes are calculated from the underlying values in international dollars, normalized to the base period 2014-2016.	World Bank
	National crop production (gross harvest)	Total production at national level for i) all cereals and ii) wheat for each year, expressed in 10,000 tons.	WFP ^b
	Fertilizer consumption	Quantity of plant nutrients used per unit of arable land. Fertilizer products cover nitrogenous, potash, and phosphate fertilizers (including ground rock phosphate). Traditional nutrients-- animal and plant manures-- are not included.	World Bank
	Livestock production index (2014-2016 = 100)	Includes meat and milk from all sources, dairy products such as cheese, and eggs, honey, raw silk, wool, and hides and skins. It shows the relative level of the aggregate volume of agricultural production for each year in comparison with the base period 2014-2016.	World Bank
	Food import NCD-protect, NCD-risk food groups	This indicator was created using the data available in the United Nation's Comtrade database. Annual food import data was downloaded with the Harmonized System (HS) Codes 6-digits that is a standardized numerical method of classifying traded products. These commodity groups were re-categorized into standard Diet Quality Questionnaire (DQQ) food groups. Classification as NCD-risk and NCD-protect food groups was done based on the Global Dietary Recommendations (GRD) guideline. NCD-Protect: foods protective against noncommunicable diseases (whole grains; legumes/pulses; vitamin A-rich orange vegetables; dark green leafy vegetables; other vegetables; vitamin A-rich fruits; citrus; other fruits; nuts and seeds). NCD-Risk: foods related to noncommunicable diseases (baked/grain-based sweets; other sweets; processed meat; unprocessed red meat - ruminant; unprocessed red -non ruminant; packaged ultra-processed salty snacks; instant noodles; sugar-sweetened beverages).	UN Comtrade
	Mobile cellular subscription	Mobile cellular telephone subscriptions are subscriptions to a public mobile telephone service that provide access to the PSTN using cellular technology. The indicator includes (and is split into) the number of postpaid subscriptions, and the number of active prepaid accounts (i.e. that have been used during the last three months). The indicator applies to all mobile cellular subscriptions that offer voice communications. It excludes subscriptions via data cards or USB modems, subscriptions to public mobile data services, private trunked mobile radio, telepoint, radio paging and telemetry services.	World Bank
	Social capital index	A composite index based on a subset of indicators from the Social Capital pillar of the Legatum Prosperity Index, which assesses social cohesion and engagement, community and family networks, and political participation and institutional trust. The index is scaled to a value that ranges from 0 (low) to 100 (high).	Legatum Institute/ FSCI
	Reduced Coping Strategy Index (rCSI)	Measure of the frequency and severity of household behaviors when faced with shortages of food or financial resources to buy food. It is calculated using five standard food consumption-based strategies and severity weighting, a higher score indicates more frequent and/or extreme negative coping strategies.	WFP ^b
Resilience responses and strategies	Livelihood coping strategy - Food security	Indicator used to understand households' medium and longer-term coping capacity in response to lack of food or lack of money to buy food and their ability to overcome challenges in the future. The indicator is derived from a series of questions regarding the households' experiences with livelihood stress and asset depletion to cope with food shortages. 2018-2020: 5 provinces; 2021-2022: 7 provinces	WFP ^b

Indicator domain	Indicator	Definition	Data source
Longer-term resilience outcomes	Food price inflation ^a	Inflation is measured in terms of the annual growth rate and in index, 2015 base year.	FAOSTAT
	Food Price Anomalies (IFPA), by type of product (Rice)	Identifies market prices that are abnormally high. The IFPA relies on a weighted compound growth rate that accounts for both within year and across year price growth. The indicator directly evaluates growth in prices over a particular month over many years, taking into account seasonality in agricultural markets and inflation, allowing to answer the question of whether or not a change in price is abnormal for any particular period.	FAOSTAT
	Food Price Anomalies (IFPA), by type of product (Wheat)		FAOSTAT
	Food supply variability ^a	This indicator uses the data on dietary energy supply from the Food Balance Sheet to measure annual fluctuations in the per capita food supply (kcal), represented as the standard deviation over the previous five years per capita food supply. Food supply variability results from a combination of instability and responses in production, trade, consumption, and storage, in addition to changes in government policies such as trade restrictions, taxes and subsidies, stockholding, and public distribution.	FAOSTAT
	% population experiencing moderate or severe food insecurity	The prevalence of moderate or severe food insecurity is an estimate of the percentage of people in the population who live in households classified as moderately or severely food insecure. The assessment is conducted using data collected with the Food Insecurity Experience Scale (FIES) or a compatible experience-based food security measurement questionnaire. A household is classified as moderately or severely food insecure when at least one adult in the household has reported to have been exposed, at times during the year, to low quality diets and might have been forced to also reduce the quantity of food they would normally eat because of a lack of money or other resources.	FAOSTAT
	% population who cannot afford a healthy diet	Proportion of the population whose food budget is below the cost of a healthy diet. The food budget is defined as 52% of household income, based on the average share of income that households in low-income countries spend on food. Income data are provided by the World Bank's Poverty and Inequality Platform. A value of zero indicates a null or a small number rounded down at the current precision level.	FAOSTAT
Food prices and cost of diet	Changes in food prices	The changes in food prices was calculated for 5 food items (1. eggs; 2. oil (cooking); 3. rice (medium grain); 4. Wheat flour (first grade and high quality); 5. Beans (kidney white and beans).	Economic: Prices-Dataviz WFP - VAM ^b
Food prices and cost of diet	Change in daily cost of diet (energy only and nutritious)	The Cost of Diet (CoD) is a method to model the cost of a theoretical, simulated diet (food basket) which satisfies recommended energy requirements of a household of specific composition of interest (e.g. breastfed child, lactating mother, and other members) at the minimal possible cost, based on the availability, price, and nutrient content of local foods.	WFP ^b
Food expenditure and food sales	Per capita food expenditure share	Indicator used to measure households' economic vulnerability. It determines the economic vulnerability without the need of having a reference to a poverty line or minimum expenditure basket. The higher the share of households' consumption expenditures on food - out of the total consumption expenditure - the more vulnerable the households are to food insecurity.	WFP FSOM ^b
Food expenditure and food sales	Food sale (volume per capita)	This indicator was created using the data in Euromonitor International database https://www.euromonitor.com/ . Market research data on food sales was downloaded and food groups were categorized into standard Diet Quality Questionnaire (DQQ) food groups. Classification as NCD-risk and NCD-protect food groups was done based on the Global Dietary Recommendations (GRD) guideline. NCD-Protect: foods protective against noncommunicable diseases (whole grains; legumes/pulses; vitamin A-rich orange vegetables; dark green leafy vegetables; other vegetables; vitamin A-rich fruits; citrus; other fruits; nuts and seeds). NCD-Risk: foods related to noncommunicable diseases (baked/grain-based sweets; other sweets; processed meat; unprocessed red meat - ruminant; unprocessed red -non ruminant; packaged ultra-processed salty snacks; instant noodles; sugar-sweetened beverages).	Euromonitor
Food security and diets	Food insecurity score	Food security status of households, based on WFP's Consolidated Approach for Reporting Indicators of Food Security (CARI) method.	WFP ^b
Food security and diets	Food consumption score	This indicator is associated with household food access, and is therefore a proxy for household food security. The FCS is used to classify households into three groups: poor, borderline or acceptable food consumption. These food consumption groups aggregate households with similar dietary patterns - in terms of frequency of consumption and diversity - and access to food.	WFP ^b
Food security and diets	Dietary diversity score	The HDDS is a population-level indicator that is used as a proxy measure of household food access. Household dietary diversity can be described as the number of food groups consumed by a household over a given reference period. The HHDDS ranges from 0 to 12 and is equal to the total number of food groups consumed by the household.	WFP ^b

^a Estimated data

^b Country level data



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