WFP World Food Programme

COUNTRY BRIEF

The global food and economic crisis' impact on food system resilience: Lao People's Democratic Republic

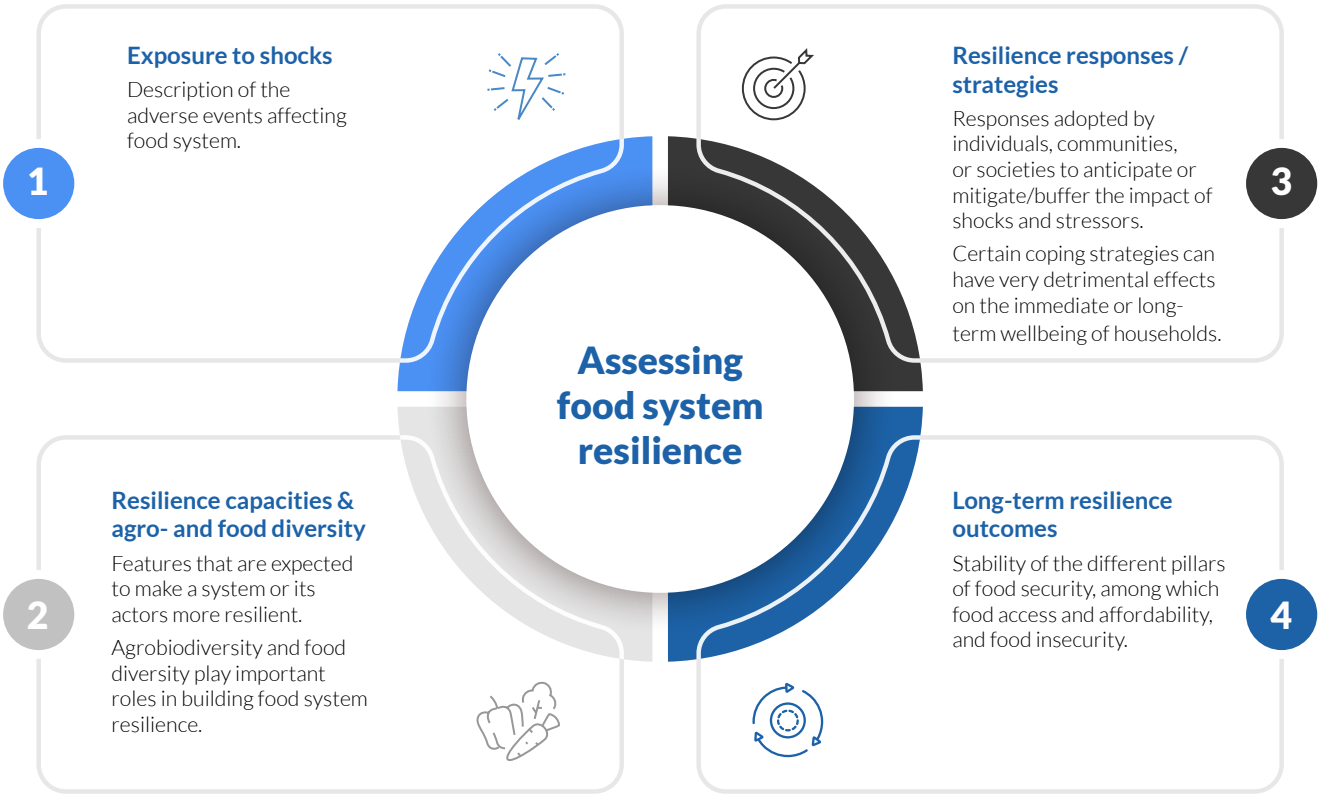
November, 2023

Background

The war in Ukraine has had major implications on food security and diets across the world, given both countries' key roles in global food markets and Russia's prominence in global energy trade. The resulting global food and economic crisis risks heightening inequalities and vulnerabilities in a world still confronting the effects of the COVID-19 pandemic. 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 and 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 Initiative[2], 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.



[1] Fanzo J, Haddad L, Schneider KR, Béné C, Covic NM, Guarin 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 LAO PEOPLE'S DEMOCRATIC REPUBLIC (PDR) BEEN EXPOSED TO SHOCKS SINCE 2020?

In the last 3 years, Lao People's Democratic Republic (PDR) has faced shocks that have affected the food system and its resilience in various ways. Like the rest of the world, the country 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 closure, restrictions of movements (lockdown, travel restrictions) and public gatherings among others, which can impact various domains of the food system (e.g., supply chain, consumer environment, consumer behaviors). After this initial phase, those stringent measures were adapted based on transmissions rates (e.g., lockdown in the capital and restrictions in other provinces in April 2021, following the surge in COVID-19 cases). The government also adopted supportive socio-economic policies, which included measures such as emergency cash transfer to garment workers and the most vulnerable households (Figure 1).

Pre-crisis, the Lao PDR currency (Lao Kip, LAK) exchange rate – relative to the US dollar (USD) – has been weak but relatively stable, with variations between 7,800 and 8,700 LAK per USD. During the crisis period, the LAK slightly dropped in value in 2020-21 (by 11% since 2019), and sharply depreciated as it fell by 44% in 2022, reaching by far its highest level within the reporting period (14,000 LAK per USD – Figure 2). The weakening of the LAK, aside from being attributed to critical macroeconomic conditions in the country such as limited fiscal space, a restricted external market, and high public debt[3], may have been a result of the volatility in global financial markets and the surge in global commodity prices resulting from the war in Ukraine.

Besides shocks related to the COVID-19 pandemic and the war in Ukraine, Lao PDR is also prone to numerous climate-related hazards, such as floods and landslides, droughts, and storms. This is illustrated by the major floods that occurred in 2013, and Typhoons Bebinca and Son Tinh that hit the country in 2018, which primarily contributed to the 9% and 11% of the Lao population that were affected by natural disasters these years (Figure 3). A Lao PDR assessment[4] indicated that the 2018 floods affected a total of 2,382 villages and 126,736 households, impacting an estimated total of 616,145 people across all 18 provinces. Due to a combination of geographic and social factors, as well as its high reliance on natural resources and agriculture, Lao PDR is recognized as vulnerable to climate change impacts and is ranked 121st out of 185 countries in the 2021 ND-GAIN Index[5]. Weather patterns are becoming more erratic and the frequency and/or intensity of extreme events are rising with climate change, exacerbating vulnerabilities and impacting on people's food security in a country where 70% of the population relies on subsistence agriculture[6].

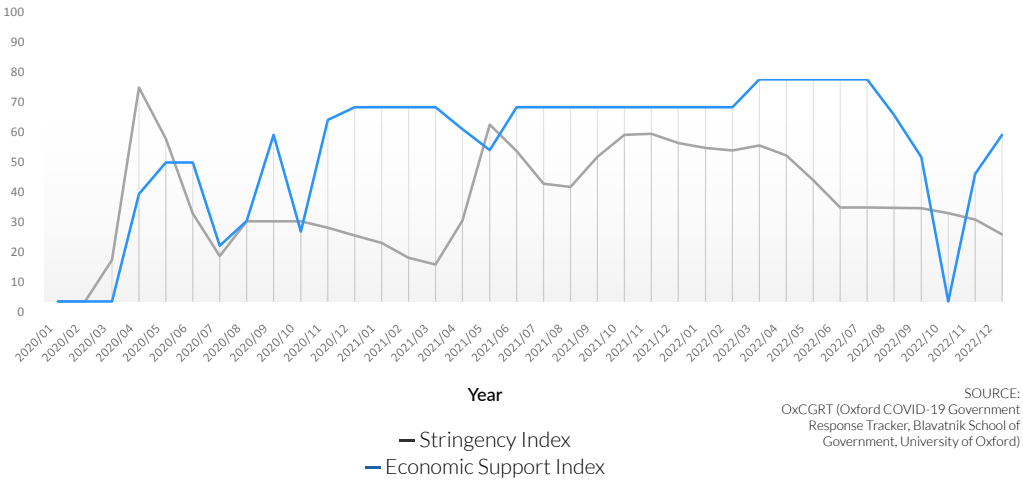
[3] (2023). Lao People's Democratic Republic: Staff Report for the 2023 Article IV Consultation—Debt Sustainability Analysis. IMF Staff Country Reports 2023, 171, A003, available from: https://doi.org/10.5089/9798400241246.002.A003> [Accessed 28 November 2023]

[4] (2019). Post-disaster needs assessment 2018 floods, Lao PDR.

[5] 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/

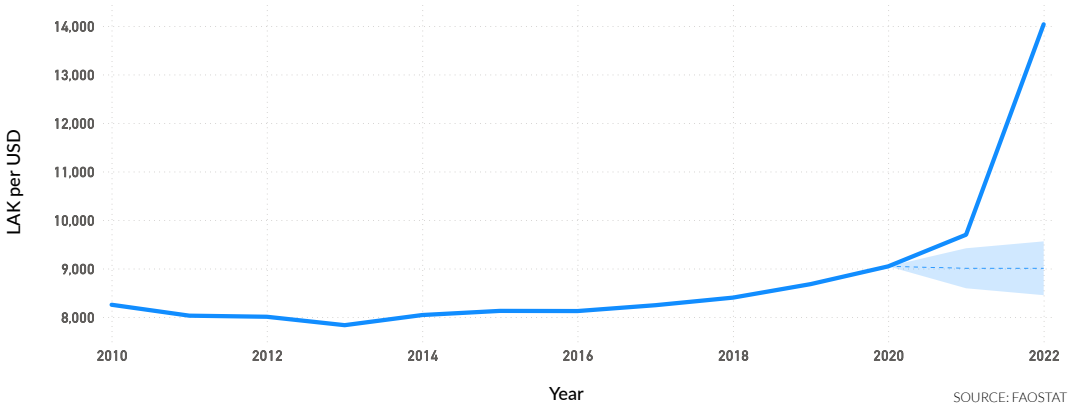
[6] https://www.fao.org/in-action/building-resilience-to-climate-change-in-laos/en/

Figure 1: COVID-19 - government response 2020-2022



SOURCE:
OxCGRT (Oxford COVID-19 Government Response Tracker, Blavatnik School of Government, University of Oxford)

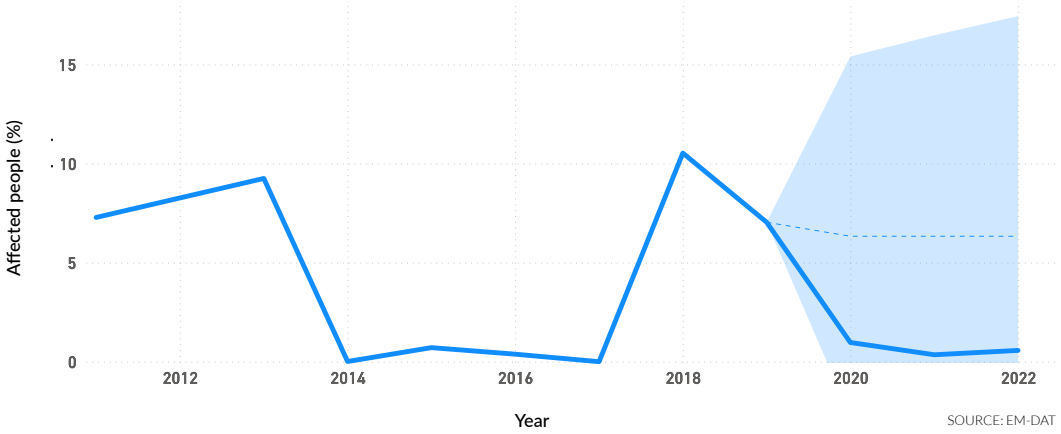
Figure 2: Exchange rate 2010-2022



SOURCE: FAOSTAT

LAK = Lao Kip USD = US dollar
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 3: Ratio of affected people (from natural disasters) to the total population 2010-2022



SOURCE: EM-DAT

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)

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

According to country-level statistics discussed in this section and presented in Table 1, food system resilience capacities seem to have stood up fairly well to the successive shocks, although volumes of noncommunicable diseases protect (NCD-protect) food imports have been affected.

With respect to domestic production, after a slight decline in 2017 followed by a period of stability the next two years, crop production increased during the crisis period, reaching its highest level within the reporting period in 2021 (index = 113; 2014-2016=base 100). However, according to a FAO/WFP assessment[7], the significant impact of climate shocks and the unprecedented high prices of seeds, fertilizers, pesticide and animal feed contributed to a decline in agricultural production in 2022. The trend in livestock production was fluctuant up to 2018 with an index varying between 85 and 122 (2014-2016=base 100), but then rose sharply in 2019 (index=172). During the crisis period, production stabilized in 2020 and moderately increased in 2021 (index=183) (Figure 4).

This positive trend in livestock production observed over the last five years is attributed to the rising demand for livestock products, driven by increased incomes and urbanization[8]. Additionally, the rapid growth in the number of main livestock species was supported by strong import demand from neighbouring countries, particularly China (mainland) and Thailand[5]. Another factor explaining the positive trend may be the absence of new cases of African Swine Fever reported since the second half of 2019, despite LAO PDR having been vulnerable to widespread outbreaks, which caused significant losses in the country[9].

Unfortunately, a lack of data beyond 2021 does not account for the adverse effects of the economic crisis. The subsequent increase in the prices of animal feed, fuel, and electricity has posed financial challenges for the farmers, making it difficult for them to sustain their livestock and ultimately forcing many of them to sell their animals5.

With regards to food imports, volumes of NCD-protect, NCD-risk, and other foods imports followed a similar pattern. Volumes imported were relatively low and stable, from 2010 to 2018 with only moderate variations, and then sharply increased in 2019 (NCD-protect food: from 14 to 223 Kg per capita; NCD-risk food: from 28 to 245 Kg per capita). This can be attributed to the rise in volumes of whole grains (NCD-protect) and other sweets (NCD-risk) imported. The crisis period was then marked by a substantial reduction in NCD-protect food (66 Kg per capita in 2021) as well as NCD-risk food (48 Kg per capita in 2021) (Figures 5,6). This decline can be attributed to the fuel crisis that emerged after the Ukraine war. The crisis posed challenges to importing key commodities and processed goods, typically sourced from China and Thailand.

Overall pre-crisis, mobile cellular subscriptions – a proxy of country's infrastructure level and therefore an important indicator for resilience – was on a declining trend up to 2018, but markedly increased by 23% in 2019. Subscriptions then stabilized during the crisis period (2020-21), with no significant variations. However, it is worth noting that this indicator might not be relevant as a proxy for infrastructure in the context of LAO PDR.

Social capital index – which reflects the strength of personal and social relationships, institutional trust, social norms, and civic participation in a country – was also following a downward trend from 2013 to 2019 (from 55 to 42), despite a period of stability (2014-2017). During the crisis period, the trend shifted, and social capital index increased from 2020 to 2022 although at a modest pace (from 42 to 47), and then slightly declined in 2023 (Figure 7).

[7] FAO. 2023. *Special report – 2022 FAO/WFP Crop and Food Security Assessment Mission (CFSAM) to the Lao People's Democratic Republic*. 7 March 2023. Rome. https://doi.org/10.4060/cc4748en
[8] World Bank. 2020. *Lao People's Democratic Republic Poverty Assessment 2020: Catching Up and Falling Behind*. © World Bank, Washington, DC. http://hdl.handle.net/10986/34528
[9] FAO. 2020. Special Report - 2019 FAO/WFP Crop and Food Security Assessment Mission to the Lao People's Democratic Republic. Rome. https://doi.org/10.4060/ca8392en

Table 1: Evolution of indicators of 'resilience capacities and agro- and food-diversity' domain from pre-crisis to crisis period, Lao PDR

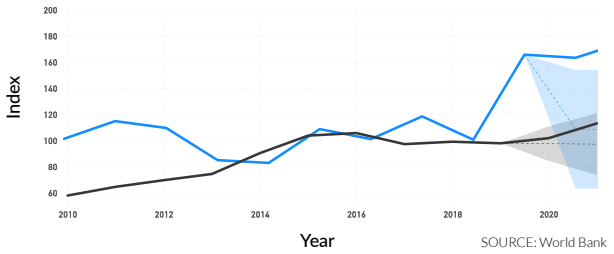
Resilience sub-domain	Indicator	Unit	Data period covered	Desirable direction	Actual direction during crisis*	
Food produced domestically	Crop production index (2014-2016=100)	Index	2010-2021	↑	↑	Pre-crisis: upward trend up to 2016, decline in 2017 and stagnation in 2018-19. Crisis period: increase in 2020-21.
	Livestock production index (2014-2016=100)	Index	2010-2021	↑	↗	Pre-crisis: fluctuating trend from 2010 to 2018, marked rise in 2019. Crisis period: stagnation in 2020 and moderate increase in 2021.
	Fertilizer consumption	Kg /ha of arable land		→ or ↑		*No data available*
Imported food	Food import – NCD-protect	Kg /capita	2010-2021	↑	↓	Pre-crisis: stable trend from 2012 to 2015, moderate rise in 2016 and slight reduction in 2017-18. Substantial increase in 2019. Crisis period: marked decline in 2020-21.
	Food import – unhealthy NCD-risk	Kg /capita	2010-2021	↓	↓	Pre-crisis: stable trend up to 2015, marked increase in 2016, decline in 2017 and slight increase in 2018. Substantial rise in 2019. Crisis period: marked decline in 2020-21.
Infrastructure	Mobile cellular subscription	Number / 100 people	2010-2021	↑	→	Pre-crisis: overall downward trend from 2011 to 2018. Marked increase in 2019. Crisis period: stabilization in 2020-21.
Social capital	Social capital index	Index	2010-2023	↑	↗	Pre-crisis: stable trend from 2014 to 2017, decrease in 2018-19. Crisis period: slight increasing trend 2020-22, marginal decline in 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

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

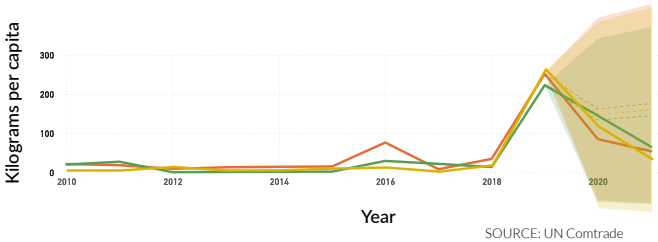


SOURCE: World Bank

Crop production index (2014-2016=100)
Livestock production index (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: Country-level food imports 2010-2021

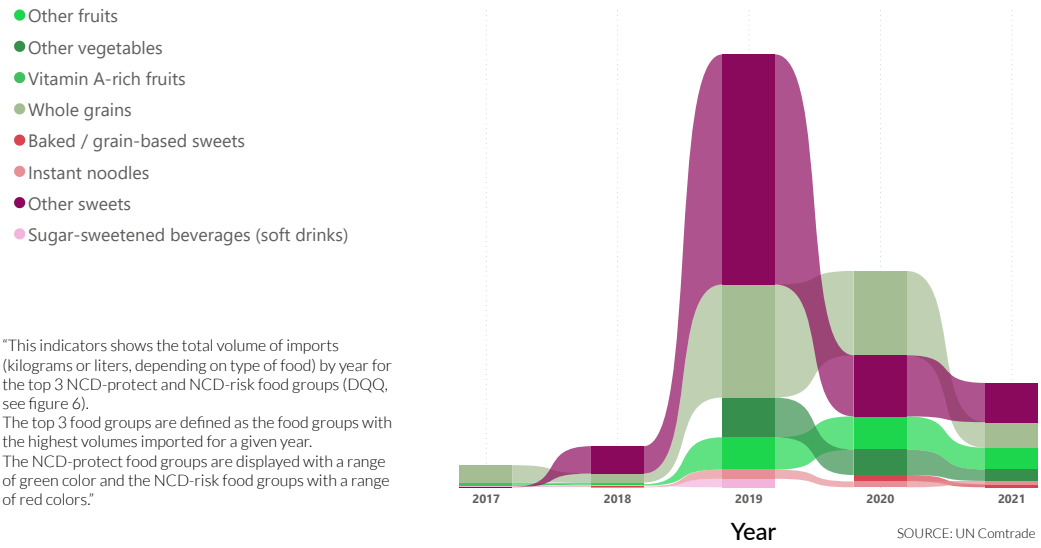


SOURCE: UN Comtrade

Other food imports
NCD-risk food imports
NCD-protect food imports

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)

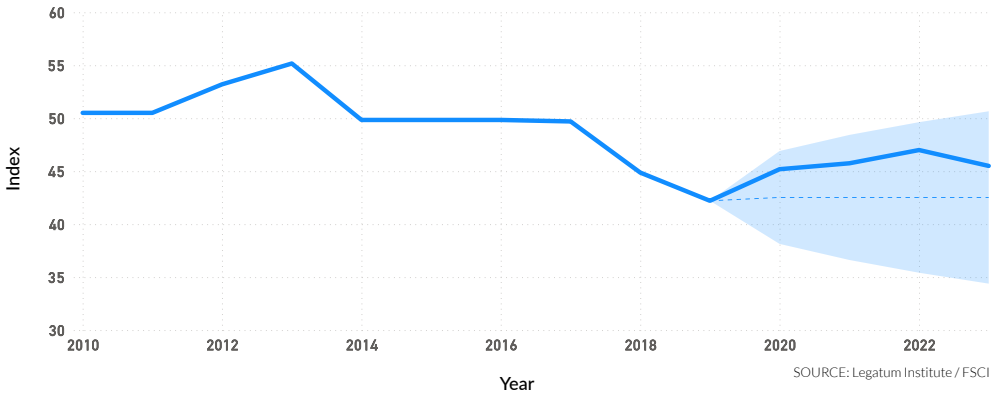
Figure 6: Country-level food imports 2017-2021, top 3 NCD-protect and NCD-risk food groups



SOURCE: UN Comtrade

"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."

Figure 7: Social capital index 2010-2023



SOURCE: Legatum Institute / FSCI

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

Based on the analysis of national level data, while changes in the use of coping strategies could not be assessed due to lack of data, indicators reflecting food system resilience outcomes show a marked deterioration since the start of the crisis, particularly for indicators of food price volatility and food supply variability, which demonstrate a concerning negative trend (Table 2).

Pre-crisis, after a peak at 12.6% in 2013, food price annual inflation in Lao PDR declined progressively to reach 0% in 2017, and then shifted to an upward trend and reached 4.7% in 2019. During the crisis period, the increasing trend persisted in 2020 (8.7%) before falling back to 3.0% in 2021. In 2022, similarly to the sharp LAK depreciation observed, food price inflation soared to nearly 22%, its highest level within the reporting period (Figure 8). This is also reflected in the high price growth for rice reported in 2022, as shown by the indicator of food price anomalies (IFPA) at 0.97, whereas rice price growth was considered as normal in the previous years (Figure 9).

Regarding food supply variability, the pre-crisis period was marked by an increasing trend from 2014 to 2017, followed by a substantial decline in 2018-19. During the crisis, the trend reversed again, and food supply variability index increased by 10 points in 2020-21 (from 18 to 28 – Figure 10).

Overall, the weakened food system resilience, in terms of high food price inflation and lower availability of food, may have affected Lao population's purchasing power and their ability to access food. The moderate downward trend of those unable to afford a healthy diet shifted in 2020 and proportion increased from 72% to 75%, while it levelled off at 74% in 2021 (Figure 11). This stabilization might be attributed to the easing of COVID-19 restrictions and border openings, which resulted in a slight increase in employment rates, contributing to their ability to purchase food. This change stood in contrast to 2020 when, due to the pandemic restrictions and lockdowns, people had difficulty accessing resources and food.

Because the available data used for this analysis only extends up to 2021, we are unable to observe the trend of food security indicators over the last two years. However, a World Bank Group Rapid Monitoring Phone Survey of Households in Lao PDR[10] found that the rapid acceleration of inflation and the income loss due to the pandemic somewhat or significantly affected 87% of households. As a result, many households scaled up their own-food production and foraging activities, reduced their food consumption, or shifted to cheaper foods, leading to inadequate nutrition. This is also confirmed by WFP country monitoring[11], which reported that nearly one in seven households is food insecure, and the majority of the population (62%) is adopting livelihood-based coping strategies. WFP country monitoring also emphasizes the higher levels of food insecurity in rural communities, where households heavily rely on their own crop production, making them more vulnerable to weather-related problems.

[10] World Bank Group. Monitoring Household Welfare in the Lao PDR. Report NO.7, June 2023.

[11] WFP. Lao PDR Food Security Monitoring. June/July 2023.

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

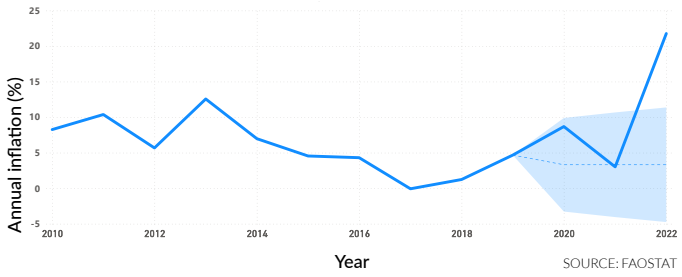
Resilience sub-domain	Indicator	Unit	Data period covered	Desirable direction	Actual direction during crisis*	Trend analysis
Coping strategies	Livelihood coping strategy (LCS): - None (N) - Stress (S) - Crisis (C) - Emergency (E)	% population	2022-2023	↑ N ↓ S, C, E		*Insufficient pre-crisis data available (only 2022-23)*
	Reduced Coping Strategy Index (rCSI): - Low (L) - Medium (M) - High (H)	Index	2022-2023	↑ L ↓ M, H		*Insufficient pre-crisis data available (only 2022-23)*
Food price volatility	Food price annual inflation	%	2010-2022	↓	↑	Pre-crisis: downward trend from 2013 to 2017, then moderate rise in 2018-19. Crisis period: rise in 2020, decline in 2021, and substantial increase in 2022.
	Food Price Anomalies (IFPA), Rice	Index	2015-2022	↓	↑	Overall normal price growth up to 2021. High price growth in 2022.
Food supply variability	Food supply variability	Kcal / capita / day	2010-2021	↓	↑	Pre-crisis: upward trend from 2014 to 2017. Steep decline in 2018-19. Crisis period: moderate increase in 2020-21.
Food security	% population experiencing moderate or severe food insecurity	% population	2019-2021	↓	↗	Steady but moderate upward trend from 2019 to 2021.
	% population who cannot afford a healthy diet	% population	2017-2021	↓	↗	Mild declining trend pre-crisis, slight increase in 2020 and marginal decrease in 2021.

* 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

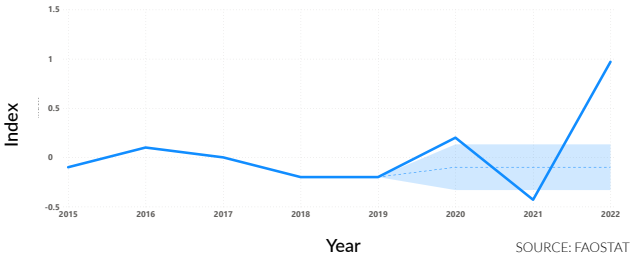
Figure 8: National food price inflation 2010-2022



SOURCE: FAOSTAT

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)

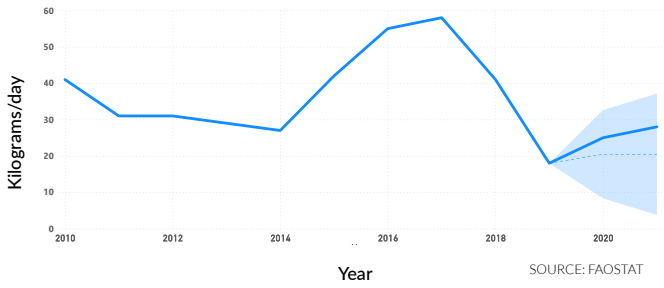
Figure 9: Food Price Anomalies (IFPA) 2015-2022 – Rice, country level



SOURCE: FAOSTAT

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



SOURCE: FAOSTAT

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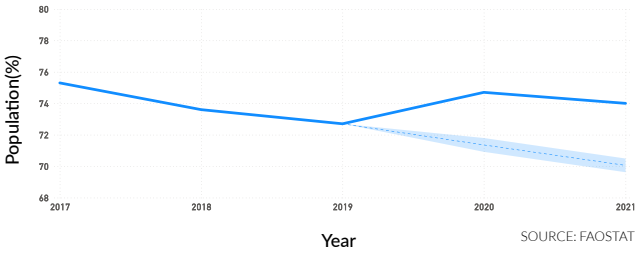
Figure 11: National share of the population unable to afford a healthy diet 2017-2021



SOURCE: FAOSTAT

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CONTEXTUAL SPECIFICITIES AND VULNERABILITIES

GEOGRAPHIC ISOLATION

Because Lao PDR is a landlocked country, limited access to seaports can impact the import and export of goods, potentially affecting food availability and prices.

AGRICULTURAL DEPENDENCE AND CLIMATE VULNERABILITY

Despite a declining contribution to GDP, agriculture remains vital to the country's economy. The majority of the Lao PDR population relies on agriculture for their livelihoods. However, the country's agricultural practices are often traditional and less productive, making local food production vulnerable to fluctuations in crop yields due to factors like weather patterns and pests. Lao PDR faces significant challenges from climate change and climate-related hazards particularly floods and droughts that severely impact its agriculture. Recent storms and flooding in certain provinces of the country, damaged agricultural infrastructure, reducing rice production, thereby affecting food availability, especially for rural communities heavily reliant on their crops. These severe weather events also significantly impact women, as approximately 60% of women are employed in the agricultural sector, according to 2021 ILO estimations[12].

WOMEN'S ROLE IN THE INFORMAL ECONOMY

The economic crisis disproportionately affected vulnerable groups, particularly children, women, girls, ethnic minorities, and people with disabilities, whose resilience had already been weakened by the pandemic. Despite playing a crucial role in agriculture and ensuring their families' food supply, women often find themselves forced into informal and marginal livelihoods. They encounter challenges in controlling or accessing assets and resources essential for income generation, thereby limiting their and their children's access to food.

LIMITED MARKET ACCESS

Some remote regions of Lao PDR have limited access to markets, making it difficult for farmers to sell their products and for consumers to access a variety of foods. This can lead to food shortages and high prices.

LIMITED DIVERSIFICATION OF PRODUCTION

Rice is a staple food in Lao PDR, and many households rely heavily on rice production. Any disruption in rice production can have significant consequences for the population's food security.

[12] International Labour Organization. (2020). ILO modelled estimates database, ILOSTAT. Available from https://ilostat.ilo.org/data/.

Impact of food system: further results

In line with food price inflation (Figure 8), analysis of national level price variations for specific food commodities including rice, eggs and vegetable oil, shows a steep rise in 2022, which persisted in the first half of 2023. The trend is similar across provinces. In 2023, the national mean price of rice had doubled compared to baseline (average 2017-18) and reached almost 150% for vegetable oil (Figures 12, 13). This is reflected in the overall cost of a locally available diet that meets nutrient requirements. The cost of this diet soared by more than 200% relative to pre-crisis (with low variability across provinces), which is the second highest rise after Sri Lanka among the 5 countries assessed in the region. In contrast, the daily cost of diet that meets only caloric needs did not change substantially. This suggests that nutrient-dense foods rich in vitamins and minerals, such as animal sourced foods, fruits and vegetables, among others, saw a far greater price increases than other types of food (Figure 14).

Surprisingly, despite a slowdown of the trend observed in 2020-21, cost of living markedly declined while disposable income (urban as well as rural) sharply increased in 2022. Food expenditure share has not varied substantially during the crisis period and remained slightly below 50% (Figures 15 to 17).

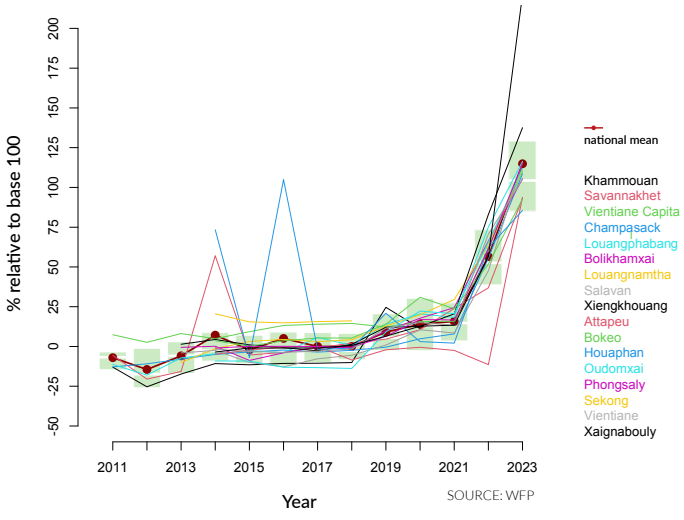
Trends in volumes of food sales are similar across NCD-protect, NCD-risk, and other food groups. Food sales followed a steady but moderate increasing trend pre-crisis. Then, the crisis period was marked by a decline of food sales in 2021 followed by a recovery in sales growth the following year, which was greater for NCD-protect food groups (Figure 18). Overall, the food groups "other vegetables" and "sugar-sweetened beverages" constitute the majority of NCD-protect and NCD-risk food sales respectively (Figure 19).

With respect to households' food security status, results indicate that a vast majority of households have an acceptable food consumption score (FCS): 82% in November 2022, although there was a noticeable decline (by around 12 points) compared to the same period in 2018, while those with borderline FCS rose by 10 points and those with poor FCS by 2 points (Figure 20). Subnational data show a similar trend across urban and rural areas, although proportion with borderline or poor FCS seems substantially higher in rural areas than in urban ones (Figure 21). These findings should be interpreted with caution due to limited frequency of data collection: data was available for only one distant data point (November 2018) for the pre-crisis period, and from September 2022 to January 2023 for the crisis period. Nevertheless, it suggests that the rise in food prices and deterioration in nutritious food affordability observed during the crisis period contributed to the worsening of households' food security status.

In a Dikoda survey covering 677 urban food vendors across 11 cities in various countries, the food crisis had a notable impact on the country[13]. Urban vendors in Lao PDR reported the most severe impacts among various countries, indicating that urban food vendors in Lao PDR likely experienced significant disruptions to their businesses due to the crisis. These disruptions include reduced market access, supply chain disruptions, and economic challenges, with most vendors facing a decrease in income. Despite the income reductions, vendors in Lao PDR, like in other countries, made adaptations to navigate the crisis, such as diversifying products and introducing new food items.

FOOD PRICES AND COST OF DIET

Figure 12: Changes in prices 2011-2023 (2017-2018 = 100) for 3 food commodities: oil (palm, soybean), eggs, rice (glutinous first/second quality and unmilled, ordinary first/second quality and unmilled)



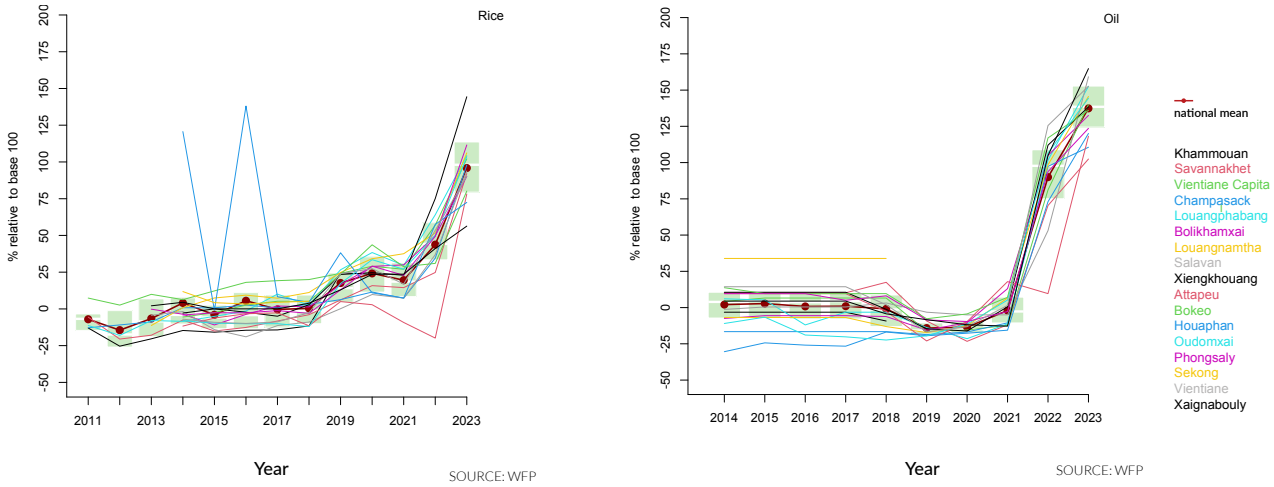
SOURCE: WFP

The graph shows the variability as quartiles boxes of the percentage change of food prices for those items relative to the base period 2017-2018 (base 100), at national level and for each of the 17 provinces (depending on data availability). The relative changes are also mean-aggregated.

[13] Vientiane n=40

[13] **Profile of Food Businesses:** These businesses ranged in size from small ventures with two employees to large corporations with up to 4000 individuals. It is important to note that this survey does not represent an even distribution among countries. Responses were more abundant in Myanmar and Sri Lanka, with fewer contributions from Pakistan and the Philippines. Food vendors represented a broad spectrum of categories, including agriculture/food production, food manufacturing/processing, food storage/supply, food retail/catering, and others. While most business types were evenly distributed across countries, Myanmar and Sri Lanka had a higher proportion of food retail/catering businesses. Unprocessed foods such as fresh meat, fish, fruits, vegetables, nuts, seeds, and legumes were staples across all countries. However, many vendors also sold processed or manufactured foods, sugary or fatty drinks, deep-fried items, and even infant formula and packaged foods for children under two years. Most vendors reported catering to consumers of all ages and genders. In some countries, a significant portion sold primarily to adults over 20. A smaller percentage served adolescent boys and girls or young children.

Figure 13: Changes in food prices 2011-2023 (2017-2018 = 100), rice and oil, country level and 17 provinces

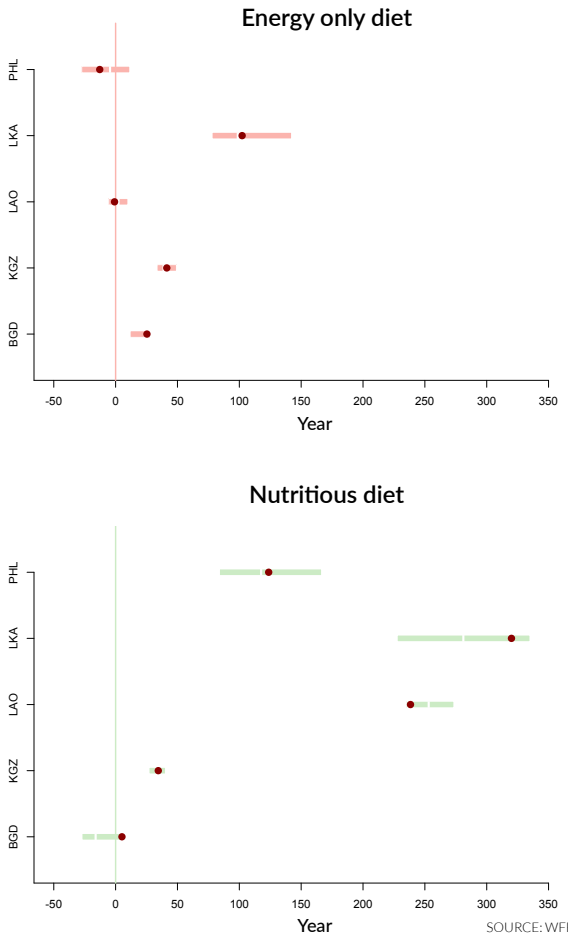


SOURCE: WFP

SOURCE: WFP

The graph shows the variability as quartiles boxes of the percentage change of food prices for those items relative to the base period 2017-2018 (base 100), at national level and for each of the 17 provinces. The relative changes are also mean-aggregated.

Figure 14: Change in daily cost of diet (energy only and nutritious) pre-crisis and crisis period, 5 countries



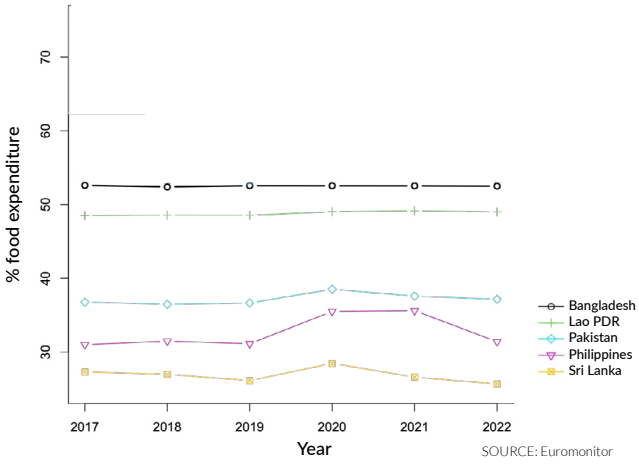
SOURCE: WFP

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, INCOME, AND FOOD SALES

Figure 15: Household food expenditure share, 2017-2022, 6 countries



The food expenditure share (FES) as a single % score is displayed with the national average and subnational estimates. 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%).

Figure 16: Cost of living (internationally comparable) 2017-2022, 6 countries

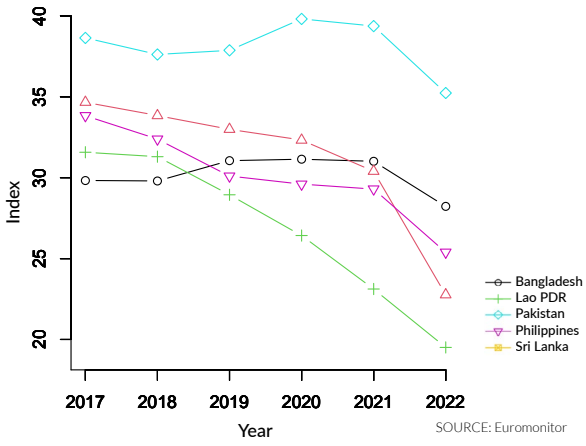


Figure 17: Urban and rural disposable income 2015-2022, 6 countries

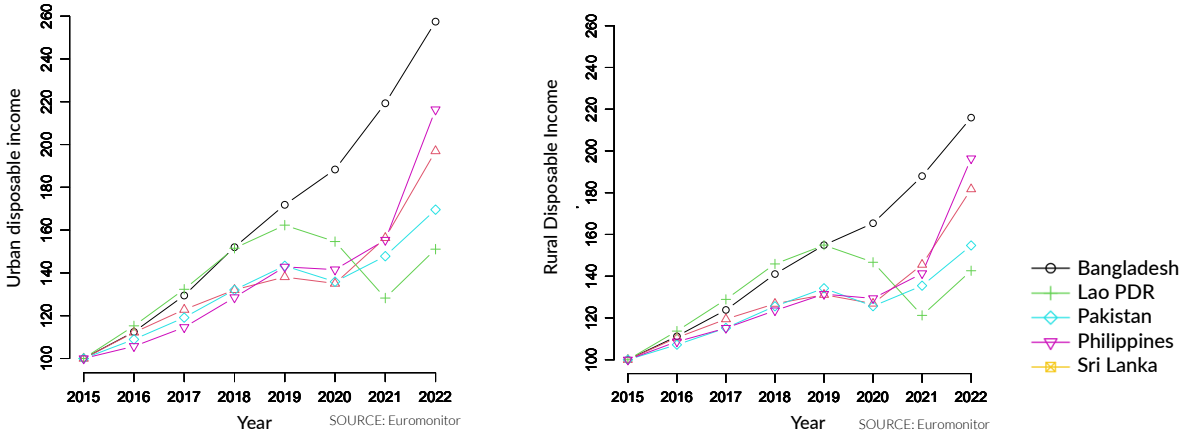
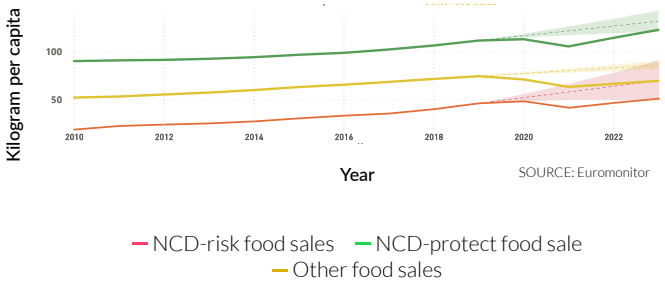
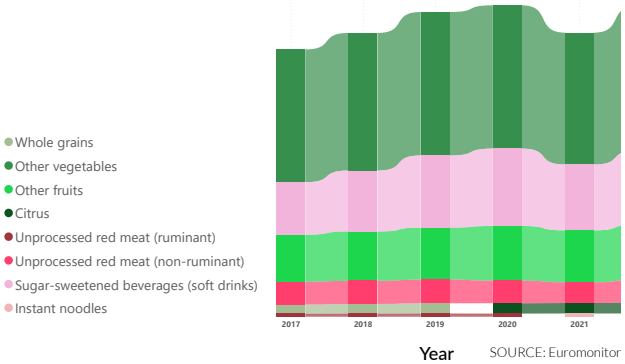


Figure 18: Food sales 2010-2023, country level



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)

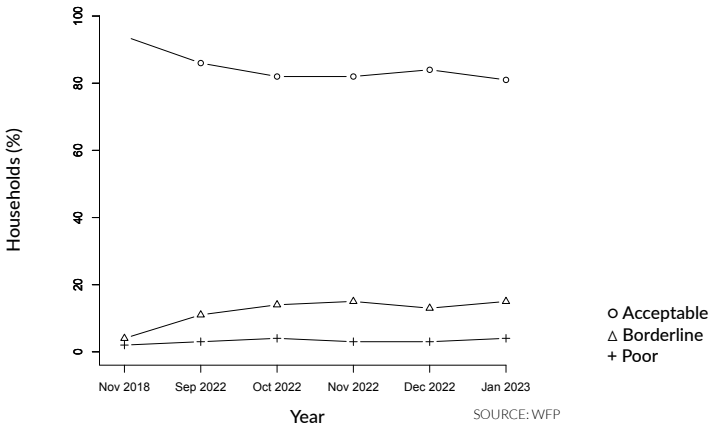
Figure 19: Country-level food sales 2017-2022 (volume per capita), top 3 NCD-protect and NCD-risk food groups



"This indicators 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 (DQQ, see figure 18).
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."

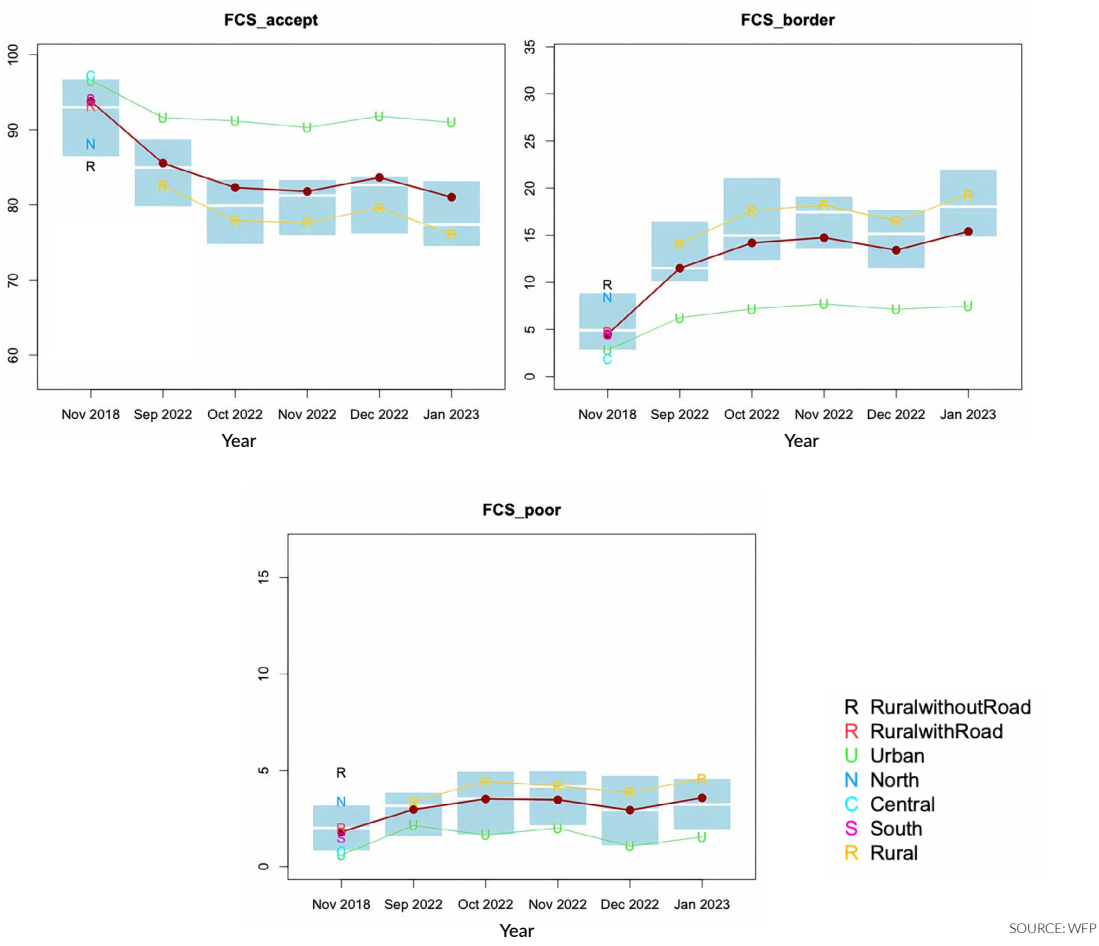
FOOD SECURITY AND DIETS

Figure 20: Households' food consumption scores November 2018-January 2023, country level



SOURCE: WFP

Figure 21: Households' food consumption score November 2018-January 2023, country and subnational levels



SOURCE: WFP

OPPORTUNITIES FOR BUILDING FOOD SYSTEM RESILIENCE

DIVERSIFICATION OF AGRICULTURAL PRACTICES

Lao PDR heavily relies on traditional agricultural practices, making it vulnerable to fluctuations in crop yields due to factors like weather patterns and pests. Furthermore, agricultural extension services in Laos are weak, and there is limited training and skills development for farmers. This constrains the potential for diversification within the sector. To build resilience, there is an opportunity to promote and support the adoption of more diversified and sustainable agricultural practices that can withstand shocks related to climate change and natural disasters. This could include introducing climate-resistant crop varieties, promoting efficient water management, and providing training to farmers on modern and sustainable farming techniques. This aligns with the objectives outlined in the 9th Five-Year National Socio-Economic Development Plan (2021-2025).

ECOSYSTEM AND BIODIVERSITY CONSERVATION

Forests play a crucial role in contributing to the diet quality of local people, especially in rural areas where the majority of the population heavily relies on wild meat and fish as primary sources of protein. However, ongoing deforestation and forest degradation impact the availability of forest food. Enhanced protection of these ecosystems and biodiversity, along with effective environmental management, can safeguard food sources for rural and remote communities. Strengthening local institutions and building capacity to manage and utilize biodiversity for food and agriculture at the local level is pivotal. Mechanisms such as farmer field schools, participatory crop and livestock improvement, and locally-identified adaptation strategies are essential. Additionally, creating awareness among consumers about the benefits of maintaining a sustainable diet, encompassing a high diversity of foods, is crucial for both human health and the health of ecosystems.

ENHANCING FOOD SUPPLY CHAIN RESILIENCE

The crisis revealed vulnerabilities in the food supply chain, with disruptions affecting the availability and affordability of food products. To enhance resilience, investments can be made in building a more resilient food supply chain. This could involve improving transportation infrastructure, storage facilities, and market access, especially in remote regions. Strengthening the connections between producers and consumers can help mitigate disruptions in the supply chain during future crises.

SUPPORT WOMEN'S ROLE IN FOOD PRODUCTION

With over half of women employed in the agricultural sector, support their empowerment in agriculture, including access to resources, finances, decision-making and leadership.

PROMOTING NUTRIENT-DENSE FOOD PRODUCTION

The analysis indicates that nutrient-dense foods saw significant price increases during the crisis. To enhance resilience, promote the production of foods rich in vitamins and minerals locally. This can include supporting small-scale farmers in cultivating fruits, vegetables, and animal-sourced foods. Additionally, behavior-change programming focused on improving nutrition practices, including dietary diversity, can help ensure access to essential nutrients during times of crisis.

SOCIAL CAPITAL BUILDING

The social capital index showed a modest increase during the crisis period. Building and strengthening social capital can contribute to resilience. This can involve community-based initiatives (via community meetings, discussions, and activities to encourage social interaction and collaboration among members), strengthening local networks (via the establishment of local networks, clubs, or associations that bring people with common interests or goals together.), and fostering trust and cooperation among community members (via events or programs). Social capital can play a crucial role in responding to and recovering from shocks.

STRENGTHEN SOCIAL SAFETY NETS FOR VULNERABLE GROUPS

Buffer vulnerable groups from the impact of future shocks through social safety net programming targeting women, children and other nutritionally vulnerable groups. These may include cash or voucher programming, school feeding, and productive grants for farmers and urban food vendors, among others.

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 Russia-Ukraine conflict 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 healthy and unhealthy 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 disaster 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, there was insufficient data available to assess changes in livelihood or food-based coping strategies, and several indicators for food system resilience only had data available up to 2020 or 2021 (e.g., domestic production, food import, food supply variability), therefore the effect of the Russia/Ukraine war - which started in February 2022 – could not captured.

Furthermore, for the indicator "food consumption score", sampling and/or data collection methods may have been different between 2018 and 2022/23. This may affect comparability and therefore interpretability of the results presented.

With respect to most indicators, the analysis was conducted at the level of the country, potentially masking subnational variabilities (e.g., across different regions, 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 Ukraine and Russia war (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
	Ratio of affected people to the total population	Natural disasters include biological (animal accident, epidemic, insect infestation), climatological (drought, glacial lake outburst, wildfire), geophysical (earthquake, mass movement - dry, volcanic activity), hydrological (flood, landslide, wave action), and meteorological disasters (storm, extreme temperature, fog). Total people affected include the total of injured (including hospitalization), affected (number of houses damaged multiplied by the family size), and homeless people (number of houses destroyed multiplied by the family size). Note: proportion of the total population may be an overestimation, as people may have be counted more than once for a given year, if they have been affected by different natural disasters throughout that year	EM-DAT
	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	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.	WFP[b]
	Fertilizer consumption	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
	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
Resilience responses and strategies	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]
	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.	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)		
	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 dieta	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 3 food items (1. oil (palm, soybean); 2. Eggs; 3. rice (glutinous first / second quality and unmilled, ordinary first / second quality and unmilled).	Economic: Prices-Dataviz WFP – VAM[b]
Food expenditure, income and food sales	Per capita food expenditure share	Consumer Expenditure on Food and Non-Alcoholic Beverages: Food products and non-alcoholic beverages purchased for consumption at home.	WFP FSOM[b]
Food expenditure, income and food sales	Cost of living	Cost of Living Index by Income (internationally comparable) is a price index that measures relative cost of living over time in a chosen income decile. Cost of Living Index is a weighted average of Index of Consumer Prices by category and consumer expenditure by income deciles, adjusted to Price Level Index.	Euromonitor
Food expenditure, income and food sales	Income	Disposable income is gross income less social security contributions and income taxes.	WFP[b]
Food expenditure, income 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).	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]

[a] Estimated data

[b] Country level data

Acknowledgements

This document was prepared by Dikoda in consultation and coordination with WFP regional bureau Bangkok and the Lao PDR WFP country office. We thank Rumbidzayi Machiridza, Manithaphone Mahaxay, Shamsiya Miralibekova, Jintana Kawasaki, Almudena Serrano, Anusara Singhkumarwong and others from the WFP team for their technical review and input to this document. This brief was developed by the Dikoda team: Caroline Favas, Elizabeth Whelan, Chiara Cresta, Didier Leibovici, Damith Chacrawarthidge, Erica Kudio, Kristie Smith, and Sophie Goudet.

Prepared by Dikoda