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2022 FAO/WFP CROP AND FOOD SECURITY
ASSESSMENT MISSION (CFSAM) TO
THE LAO PEOPLE'S DEMOCRATIC REPUBLIC

7 March 2023

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ABBREVIATIONS AND ACRONYMS

CFSAM	Crop and Food Security Assessment Mission
COVID-19	coronavirus disease 2019
DAFO	District Agriculture and Forestry Office
EIU	Economic Intelligence Unit
FAO	Food and Agriculture Organization of the United Nations
FAOSTAT	Food and Agriculture Organization Corporate Statistical Database
FCS	food consumption score
FMD	foot-and-mouth disease
GDP	gross domestic product
GIEWS	Global Information and Early Warning System on Food and Agriculture
LAK	Lao kip
LECS	Lao Expenditures and Consumption Survey
MAF	Ministry of Agriculture and Forestry
MDD	minimum dietary diversity
NPK	nitrogen, phosphorus and potassium
TDK	Thadokkham
UN	United Nations
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
USD	United States dollar
VAM	vulnerability analysis and mapping
VCI	Vegetation Condition Index
VHI	Vegetation Health Index
WFP	World Food Programme
WHO	World Health Organization



HIGHLIGHTS

- Unfavourable weather conditions and record high prices of agricultural inputs affected agriculture production in 2022, while a sharp slowdown of the national economy, amid soaring prices of most food items, worsened food insecurity conditions.
 - Production of paddy, the main food staple, is forecast at 3.47 million tonnes, 4 percent below the five-year average. Crop losses were significant in localized areas in northern and southern provinces where floods and dry weather conditions occurred.
 - Livestock conditions were satisfactory across most of the country. However, prices of livestock inputs surged since April 2022, resulting in distress sales of animals and financial losses for farmers.
 - Prices of most food items, including rice, have been on a steady increase since early 2022 and they were at record levels in November 2022, reflecting the high costs of production and transportation. The food inflation rate in January 2023 was estimated at 47.1 percent, the highest level since March 2000.
 - In the 2022/23 marketing year (September/August), import requirements of rice are anticipated at an above-average level of 275 000 tonnes. As they are expected to be fully covered by commercial imports, the mission does not forecast any uncovered food deficit.
 - Approximately 1.04 million people (13.9 percent) are estimated to be moderately acute food insecure and 71 000 people (0.9 percent) to be severely acute food insecure in November 2022.
 - The highest levels of acute food insecurity are in Attapeu and Louangnamtha provinces as well as in households whose head has no formal education and those reporting large year-on-year decreases in income.
- 
- © FAO/C. Costet
- One in five households are not consuming an adequate diet. Additionally, diet inadequacy is twice as high among households in rural areas as compared to those living in urban areas. The highest levels of diet inadequacy are in Xaisomboun Province and among households headed by a member with no education.
 - Food-related coping strategies are being frequently adopted. One in five households reported reducing meal sizes as well as reducing adult consumption to prioritize children.
 - About one out of four households reported that its income decreased compared to the same month in 2021, underscoring the difficult financial challenges many households are currently facing.
 - In the short-term, the mission recommends to immediately scale up food and livelihood assistance support for the population suffering from moderately or severely acute food insecurity. Provide immediate support to farmers in order to strengthen domestic agricultural production, prioritizing the most vulnerable smallholder farmers in the southern and northern provinces who suffered from severe crop losses in 2022.



OVERVIEW

At the request of the government, a joint FAO/WFP Crop and Food Security Assessment Mission (CFSAM) visited the country from 14 November to 2 December 2022 to estimate the 2022 crop production, to forecast the country's import requirements for 2023 and to estimate the number of food insecure people. The mission's aim was to provide an accurate picture of the severity and extent of the impact of unfavourable weather conditions in northern and central parts of the country, macroeconomic difficulties and high agricultural input prices, namely fertilizer, fuel and electricity, on agriculture in 2022. The finding of the mission will help identify the requirements to support farmers and food insecure households until the next main harvest in October/November 2023 as well as some medium-term actions needed to strengthen resilience of the agriculture sector. The mission held extensive discussion with staff of various government institutions, in particular the Department of Agriculture (DoA), the Department of Irrigation (DoI), the Department of Planning and Finance (DoPF) of the Ministry of Agriculture and Forestry (MAF) and the Department of Statistics (DoS) under the Ministry of Planning and Investment (MPI). Organized in three teams, the mission visited 11 out of the 17 provinces of the country to meet with Provincial Agriculture and Forestry Office (PAFO) and District Agriculture and Forestry Office (DAFO) authorities, farmers and livestock owners. During the field visits, the mission was able to observe standing 2022 main (wet) paddy crops whose harvesting operations were either underway or about to start. Visits to retail and wholesale food markets and interviews with rice millers, rice traders and agricultural inputs traders and importers were conducted. The mission's field observations were triangulated with official data provided by the government agencies, the semi-structured interviews with stakeholders and rainfall analysis based on remote sensing data. Prior to departing from the country, the team briefed the Deputy Minister of Agriculture and Forestry and held an online briefing with the resident donor community in order to explain on the mission's findings.



The 2022 main (wet) season paddy production is estimated at 3.1 million tonnes, 3 percent below the five-year average. Crop losses were significant especially in northern and central parts of the country that were negatively impacted by unfavourable weather conditions. The small farmers with holding size smaller than 1.5 hectares were particularly affected.

Production prospects for the 2022 entirely irrigated secondary (dry) crop, planted between December 2022 and January 2023 and to be harvest in April 2023, are unfavourable. Sowings have been constrained by limited amount of irrigation water following the damages caused to the irrigation infrastructure by the repeated floods in 2018, 2019 and 2022. In addition, farmers declared their intention to shift part of their paddy lands to cash crops due to high fuel and electricity prices for pumping irrigation water and elevated prices of agrochemicals. At the aggregate level, 2022/23 paddy production, including the 2022 main (wet) season and 2023 secondary (dry) season is forecast at 3.47 million tonnes, 4 percent below the previous five-year average. It should, however, be noted that the production in the country varies greatly year-on-year, depending on the weather conditions, distorting the practical application of the

average production for comparison. For example, the average (3.59 million tonnes) of the previous five years (2017–2021) includes three years (2018, 2019 and 2020) of sharply reduced harvests, as yields were constrained by unfavourable weather conditions (Figure 4), underlining that the estimated decline in production in 2022 is from an already low baseline. In the preceding five-year period (2013–2017), for example, production averaged 3.93 million tonnes.

The 2022 production of maize, predominantly grown in northern parts of the country, is officially estimated at 635 500 tonnes, 23 percent below the five-year average. The low output reflects a sharp decline in area planted, mainly due to a shift to more profitable cash crops, and well below-average yields, owing to dry weather conditions in the northern main producing areas as well as reduced application of fertilizers, pesticides and herbicides.

To compensate for the losses in local production, commercial imports of rice are anticipated at an above-average level of 275 000 tonnes in the 2022/23 marketing year (September/August). The mission does not forecast any uncovered food deficit for the ongoing marketing year.

At the time of the mission, livestock conditions were reported to be satisfactory across most of the country. However, prices of livestock inputs surged and were at elevated levels since April 2022, resulting in distress sales of animals by farmers affected the production of poultry, pigs and cattle.

Prices of the glutinous type 2 rice variety, widely consumed in the country, started to soar in most markets since April 2022 and reached record highs in November 2022, averaging about 45 percent higher than a year earlier. The price increase reflects reduced 2022 main (wet) production and high transportation and agricultural input costs. Similarly, prices of a wide range of imported and locally produced basic food commodities, including wheat flour, different types of meat, vegetables and cooking oils, have risen throughout 2022 and reached, in many cases, record or near-record levels in November. According to the Lao Statistics Bureau, the general and food inflation rates in January 2023 reached 40.3 and 47.1 percent, respectively, the highest level since March 2000.

According to the food security monitoring survey conducted in December 2022, approximately 1.04 million people (13.9 percent of the population) were estimated to be moderately acute food insecure and 71 000 people (0.9 percent of the population) to be severely acute food insecure.

The highest levels of acute food insecurity were in Attapeu (30 percent) and Louangnamtha (27 percent) provinces as well as in households headed by a member with no formal education (24 percent) and those reporting large decreases in their income in the month before the survey (23 percent). About 17 percent of households in rural areas were reported to be acutely food insecure compared to 9 percent in urban areas.

One out of five households (19 percent) were not consuming an adequate diet. This represents a deterioration from September 2022, when 14 percent of households were consuming an inadequate diet. Additionally, diet inadequacy is twice as high among households in rural areas as compared to those living in urban areas (23 percent and 10 percent, respectively). The highest levels of diet inadequacy were in Xaisomboun Province (38 percent) and among households headed by a member with no education (32 percent).

Food-related coping strategies were frequently adopted. As of December 2022, one out of five households (22 percent) reported reducing meal sizes and 19 percent reported reducing adult consumption to prioritize children. The majority of households (60 percent) were consistently using livelihood coping strategies, including spending household savings, borrowing money and reducing healthcare expenses to buy food. Over time, a sustained use of livelihood coping suggests that households' coping capacity has diminished. Unless macroeconomic conditions improve, it is possible that more households will begin resorting to extreme strategies as 2023 progresses, including the sale of property and withdrawing children from school to work, with negative implications for food security and income-earning potential in the medium to longer term.

About one out of four households (27 percent) reported that their income had decreased compared

to the same month in 2021. Although this figure has reduced by 33 percent compared to September 2022, it remains consistent with the low level of paddy production and the reduced profits that many farmers faced due to high input costs and the impacts of natural hazards.

Overall, 26 percent of households reported to have problems accessing markets in the two weeks before the survey, which is a slight increase from September 2022 (21 percent). Rural households were more likely to report difficulties accessing markets than urban households (32 percent vs. 12 percent, respectively).

The acute food insecurity situation in the country is elevated largely due to the high prices for food, fuel and agricultural inputs, inflationary headwinds for wages and purchasing power, reduced household incomes and damages to infrastructure caused by localized disasters (flooding and typhoon) in 2022. In addition, the cumulative socioeconomic impact of the global food and fuel crisis and the coronavirus disease 2019 (COVID-19) pandemic have reduced the resilience of many households, leaving them more exposed and vulnerable to acute

food insecurity conditions. The situation is likely to deteriorate during the lean season from May to October 2023 or even earlier if the macroeconomic situation deteriorates further and/or households have to resort to more severe means of coping.

In the short-term, the mission recommends to immediately scale up food and livelihood assistance support for the population suffering from moderately or severely acute food insecurity, prioritizing rural households affected by climate shocks. The 2023 main (wet) crops will be planted between May and July 2023 and it is crucial to provide urgent support to farmers to secure the main harvest prioritizing the most vulnerable smallholder farmers in northern and southern provinces who suffered from severe crop losses in 2022. Technical and financial assistance is needed to strengthen resilience of the agricultural sector in order to mitigate the impact of extreme weather events, particularly droughts and floods, while promoting sustainable agriculture intensification. These measures should also address the needs of backyard producers and small-scale farmers, considering their crucial contributions to the national food security.



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SOCIOECONOMIC CONTEXT

Macroeconomic situation

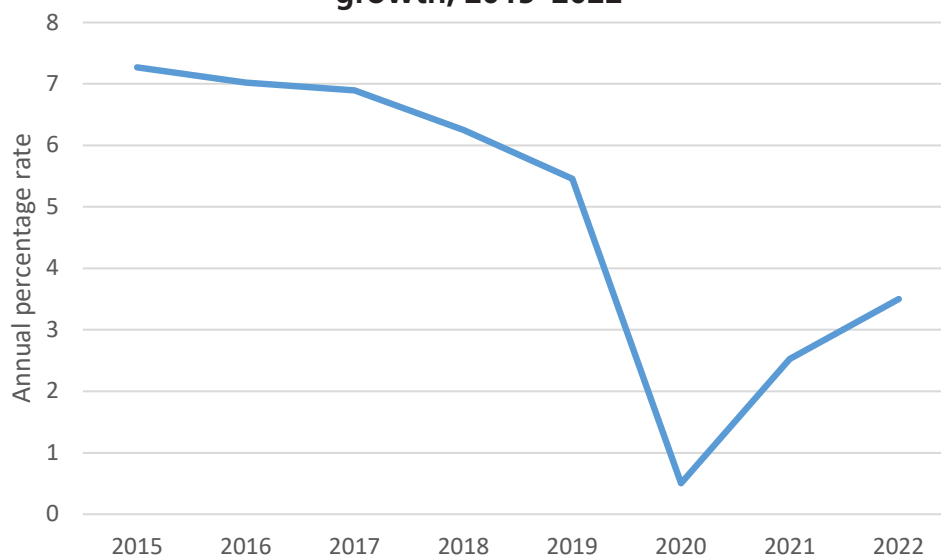
According to the World Bank (WB), the average per capita gross domestic product (GDP) was estimated at USD 2 551 in 2021.ⁱ Between 2000 and 2020, the poverty rate has decreased from 46 to 18 percent and the country's status has been upgraded from low to lower middle income category in 2021. According to the United Nations Development Programme (UNDP), the human development index (HDI) value rose from 0.405 in 1990 to 0.607 in 2021 and in 2022 the country ranks 140th out of 191 countries.ⁱⁱ

The national economy growth, measured by real GDP has declined steadily from 7.3 percent in 2015 to 5.5 percent in 2019 (Figure 1), driven by a decline in mining output, the continued fiscal tightening and slowing down in private consumption, which accounts for over 60 percent of the GDP.ⁱⁱⁱ The reduced agricultural output in 2018 and 2019, due to adverse weather conditions, also negatively affected the national economy.



In 2020, the GDP growth dropped to a mere 0.5 percent due to the negative effects of the COVID-19 pandemic and its containment measures resulted in widespread income losses, a strong decrease in remittance inflows and brought the tourism sector to a standstill further worsening the economic conditions. Consequently, the GDP expanded by 2.5 percent in 2021 and 3.4 percent

Figure 1: Lao People's Democratic Republic – Gross domestic product (GDP) growth, 2015–2022



Sources: World Bank. 2022. *Indicator data: GDP per capita (current US\$) - Lao PDR*. World Bank Group. NW Washington. Cited November 2022. <https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=LA&view=chart>; EIU. 2023. *Laos - Country report*. Economist Intelligence Unit. London. http://country.eiu.com/fao.idm.oclc.org/FileHandler.ashx?issue_id=1252635708&mode=pdf.

in 2022, remaining well below the pre-pandemic levels,^{iv} with the start of the war in Ukraine and its ripple effects on international trade and commodity prices, put the recovery process at risk. The economic growth outlook for 2023 remains weak, reflecting high trade deficits, dwindling foreign currency reserves, significant external debt and high and increasing inflation rates (Table 1).

According to the Lao Statistics Bureau, the general annual inflation rate surged by 38.5 percent in November 2022 (year-on-year), the highest rate

recorded since March 2000 mostly reflecting the increase in prices of fuel, transportation and most basic food items (Figure 2).

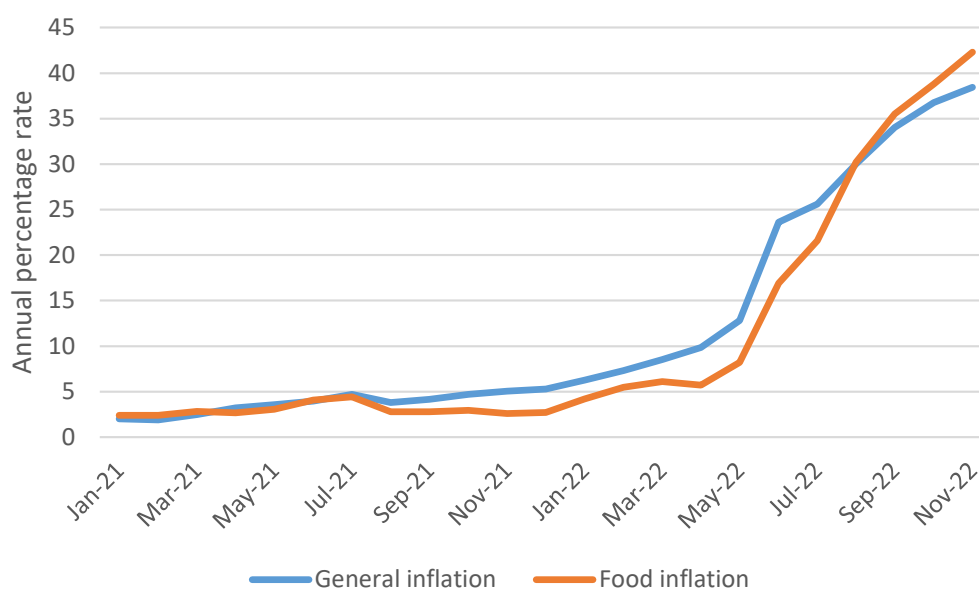
The national currency, Lao kip (LAK), depreciated steadily since September 2021, largely due to concerns about the government’s ability to meet its debt repayment obligations and sizeable current account deficits, amid high global commodity prices. In December 2022, the value of Lao kip reached a record low level of LAK 17 317 per USD 1, with a depreciation of about 55 percent compared to

Table 1: Lao People’s Democratic Republic – Key economic indicators, 2018–2022

Domestic economy	2018	2019	2020	2021	2022
Real GDP growth (percentage)	6.2	5.5	0.5	2.5	3.4
Average consumer price index	2.0	3.3	5.1	3.8	22.9
Exports of goods (USD million)	5 408	5 806	6 115	7 695	7 964
Imports of goods (USD million)	6 315	6 272	5 370	6 275	8 032
Trade surplus/deficit (USD million)	1 649	-1 320	-231	447	-996
Average foreign exchange reserves excluding gold (USD million)	944	1 068	1 393	1 476	1 241
Average exchange rate LAK per USD	8 401	8 679	9 046	9 698	14 170

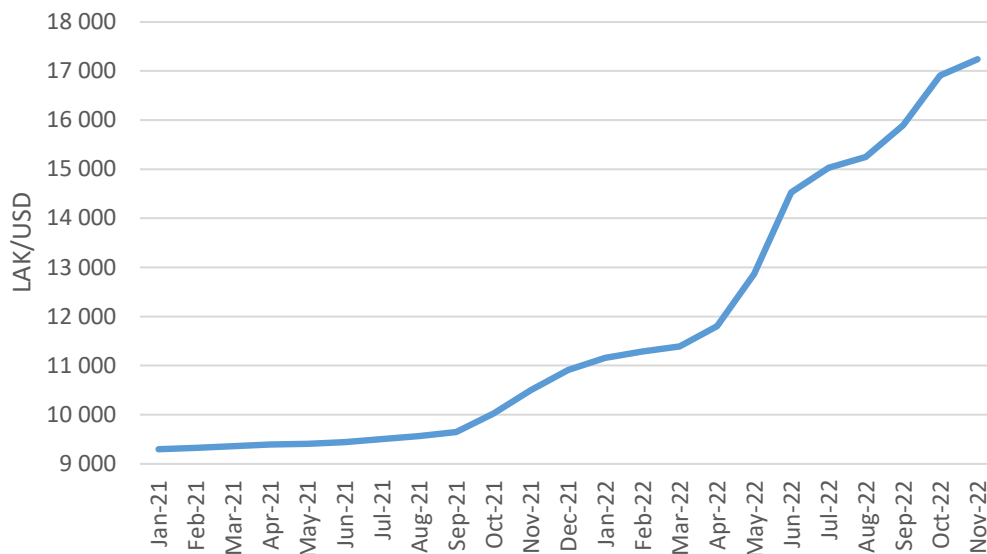
Source: EIU. 2023. *Laos - Country report*. Economist Intelligence Unit. London. http://country.eiu.com.fao.idm.oclc.org/FileHandler.ashx?issue_id=1252635708&mode=pdf.

Figure 2: Lao People’s Democratic Republic – Inflation trends, 2021–2022



Source: Lao Statistics Bureau. 2019. *Laos Statistical Information Service (LAOSIS)*. Vientiane Capital. Cited November 2022 <https://laosis.lsb.gov.la/>.

Figure 3: Lao People’s Democratic Republic – Exchange rate, 2021–2022



Source: IMF. 2023. *World Economic And Financial Surveys - World Economic Outlook Database*. International Monetary Fund. Washington, D.C. Cited January 2023. <https://www.imf.org/en/Publications/WEO/weo-database/2022/October>.

one year before. The strong depreciation of the national currency has caused price increases of essential products, including fuel, medicine, food and agricultural inputs, such as fertilizers, pesticides, animal feed and veterinary vaccines.

Population

The country’s population in 2022 is estimated at 7.529 million, with an average annual growth rate of 1.4 percent during the previous five years.^v About 63 percent of the total population lives in

rural areas, with the average population density of about 30 persons per square km which is amongst the lowest in the Far East Asia Region.^{vi} Based on official information, during the last ten years, there has been an extensive migration of people from rural to urban areas or to neighbouring countries, mostly Thailand,^{vii} in search of better employment opportunities. According to United Nations (UN) estimates, there are 1.3 million Lao nationals living abroad and many of them have returned to the country during the COVID-19 pandemic due to the loss of work opportunities abroad.



AGRICULTURE

General overview

Agriculture

Agriculture contributes to 16 percent of the country's total GDP^{viii} and is the backbone of the rural economy. Approximately 60 percent of the formally employed population works in agriculture,^{ix} most of them engaged in rice production, livestock husbandry, fisheries and the collection of forest products.

About 80 percent of the country's area is covered by mountainous landscape and forest, with an average elevation of about 710 metres above sea level. Agricultural area, which is the sum of cultivated land, permanent pasture and meadow, is estimated at 2 million hectares, equivalent to about 10 percent of the national territory, further expansion being limited by the topography of the country. The structure of the agricultural sector is characterized by small-sized family farms that are often highly fragmented into small parcels. About 60 percent of the arable land is dedicated to the cultivation of annual crops, mostly rice and small amounts of maize, and the rest is used for perennial crops, such as rubber, cassava, sugarcane, coffee and bananas. There are two main farming systems in the country: the lowland rainfed and/or irrigated farming systems along the Mekong River and its tributaries and the slash-and-burn farming system, where perennial vegetation is periodically cleared to plant paddy and other crops and is practiced primarily on the upland. The productivity from the slash-and-burn farming system is reported to be declining, as the number of years between cultivations tend to diminish with consequent incomplete recovery of soil fertility.

The country is characterized by a tropical climate, with an average temperature between 33°C in March and April and 16°C in December and January. The southeast monsoon from May to October produces



about 70 percent of the annual rainfall amount followed by a cool secondary (dry) season from November through February and a hot secondary (dry) season in March and April. The average annual rainfall amount ranges from 1 000 mm in the north to over 3 000 mm in some central and southern regions.

In 2015, the MAF formulated the "Agricultural Development Strategy to 2025 and Vision to the year 2030"^x with the following aims: 1) ensure food security; 2) produce comparative and competitive agricultural commodities; 3) develop clean, safe and sustainable agriculture; and 4) modernize the agriculture sector. To achieve these objectives, the government is promoting the expansion of the irrigated area for crops, by expanding and rehabilitating irrigation infrastructures that were damaged by the floods in 2018, 2019 and 2022. The government also put in place policies promoting agricultural exports and foreign direct investment that have contributed to increased production of cash crops and vegetables, including roots and tubers (mainly cassava), sugarcane, coffee and fruits.

Rice is the major crop grown in the country, covering about 60 percent of the total cultivated areas. The

Table 2: Lao People’s Democratic Republic – Rice crop calendar

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
Wet season upland		Slash and Burn			Planting		Mid-Season		Harvest			
Wet season lowland						Planting		Mid-Season		Harvest		
Dry season	Planting	Mid-Season	Harvest									Planting

Source: Authors’ own elaboration based on the data provided by the Department of Agriculture (DoA) of the Ministry of Agriculture and Forestry (MAF) to the 2022 FAO/WFP Crop and Food Supply Assessment Mission (CFSAM) to the Lao People’s Democratic Republic, 2022.

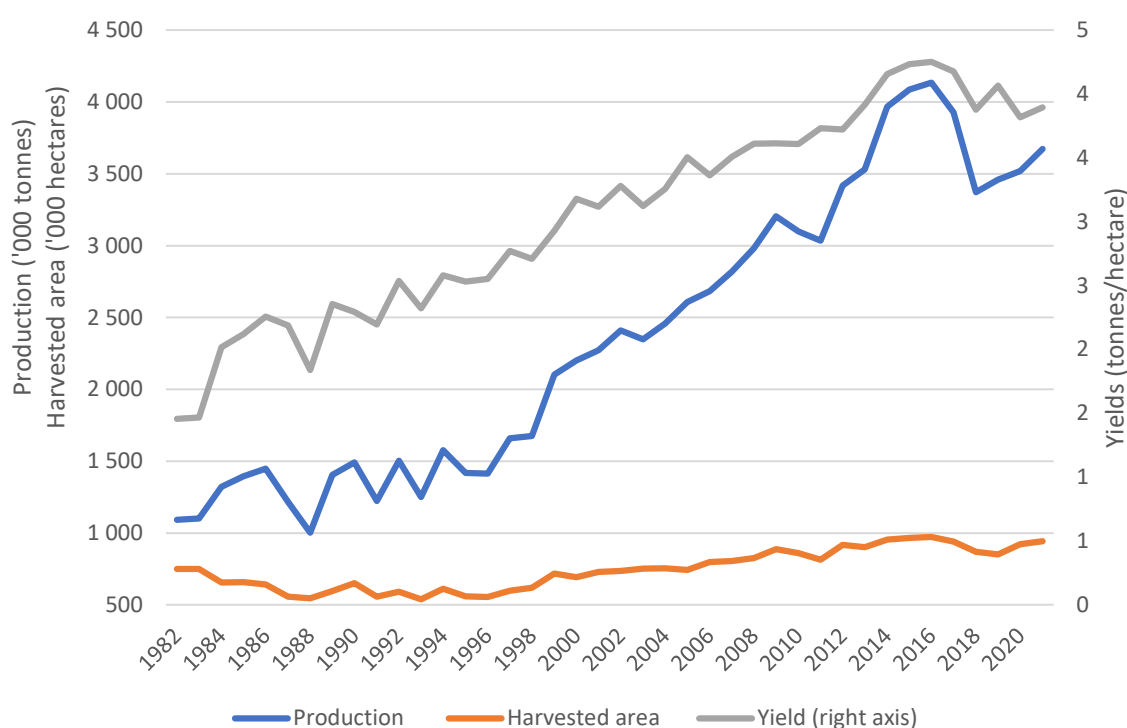
main (wet) season, mostly rainfed extends from May to December and contributes to almost 85 percent of the annual paddy production, while the secondary (dry) season stretches from December until April and crops are entirely irrigated (Table 2).

The bulk of the rice output is produced in the lowlands and only about 10 percent of the production takes place in the uplands, mostly in the north. Paddy yields in the lowland average 4 tonnes per hectare, reflecting higher use of agricultural inputs, including mechanization, fertilizers and pesticides as well as improved seed varieties. By contrast, the upland rice cultivation is typically based on a low input cropping system and yield averages only 2 tonnes per hectare. Lowland rice is grown under two main agroecosystems, rainfed lowlands main (wet) season and irrigated lowlands secondary (dry) season. The main rice producing areas

are located along the Mekong River and its tributaries and include the provinces of Vientiane, Khammouan, Bolikhamxai, Savannakhet, Champasak, Khammouane and Saravan. Most of the rice is produced for self-consumption and less than 10 percent of the total annual output is sold on markets.

Figure 4 illustrates rice production, harvested area and yields over the last 30 years. Rice production gradually increased since the early 1980s and reached its highest level of about 4 million tonnes between 2014 and 2017, making the country self-sufficient in rice. Over 30 years, production has tripled, reflecting increases in both area and yields. Yields increased due to the broader use of improved seeds and agricultural inputs, including mechanization and fertilizers, while area increases were supported by higher use of mechanization and policies supporting expansions in the area under irrigation.

Figure 4: Lao People’s Democratic Republic – Total rice production, area and yield, 1982–2021



Sources: FAO. 2022. *Country Cereal Balance Sheet (CCBS)*. Global Information and Early Warning System on Food and Agriculture (GIEWS). Rome. Cited November 2022. <https://www.fao.org/giews/data-tools/en/>.

Between 2017 and 2020, unfavourable weather events have affected paddy production, leading to a sharp decrease in output from 4.1 million tonnes in 2016 to 3.5 million tonnes in 2020.

Rice farmers use a wide range of seeds: local or improved seeds; early, medium and late maturing varieties; photosensitive and not photosensitive; glutinous or ordinary rice. The Rice and Cash Crop Research Centre has developed improved rice varieties that have substantially increased productivity and are tolerant to various adverse factors, including droughts, floods, leaf blight and blast diseases. Improved paddy varieties include Thadokkham (TDK) 8, TDK 11 and TDK 15, mostly used in high productive southern and central provinces. The government runs official seed centres that supply improved seeds to farmers. Every province has official seed centres and farmers can buy seeds without any charges by intermediaries. However, only 10 percent of the farmers normally have access to the certified seeds, and most of the farmers use seeds from retained production of the previous harvests and/or farmer-to-farmer exchanges.

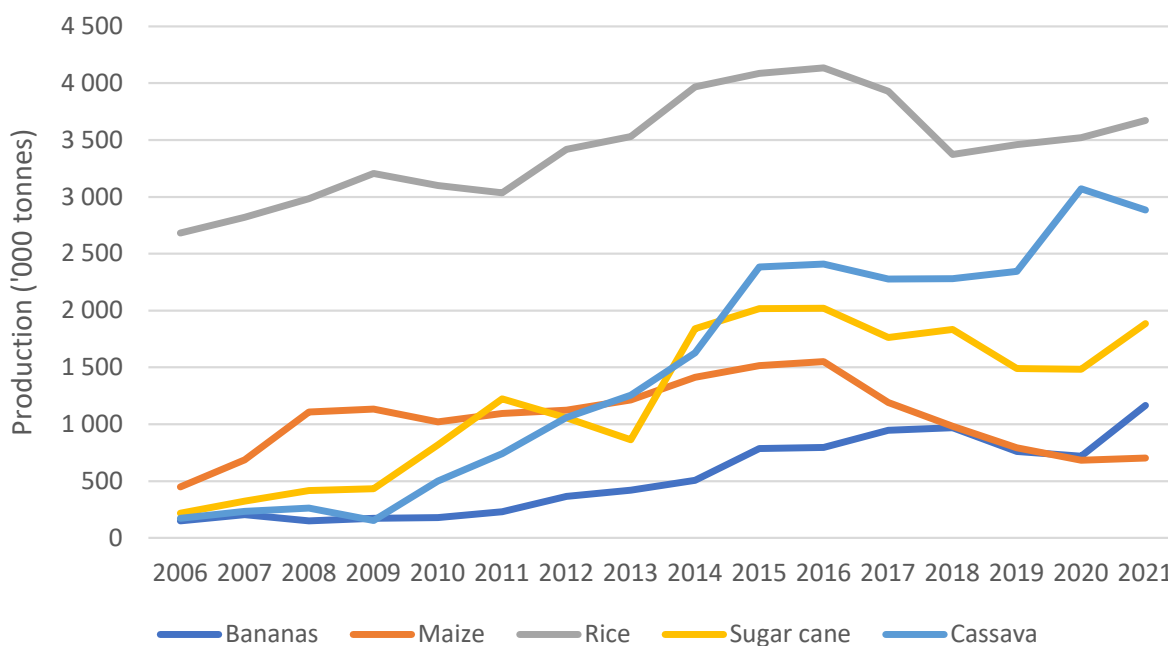
Maize was the first commercial crop to be widely introduced in the country in the mid-2000s^{xi} and is primarily grown in northern areas. Since 2016, the

area planted with maize has declined by approximately 30 percent and has been replaced by cash crops, such as coffee, bananas, sugarcane and cassava, mostly reflecting the strong export demand from neighbouring countries, China (mainland), Thailand and Viet Nam. For example, the area planted with cassava increased by more than five times between 2010 and 2021, while the area planted with sugarcane and bananas increased more than double (Figure 5).

The livestock sector contributes to about 20 percent of the agricultural GDP. Buffaloes, cattle, poultry and pigs are the main livestock species and are mostly raised in the free-range husbandry systems. Over the past decade, the livestock population has continuously increased and livestock products generate valuable cash income for the rural population.

Fishery is one of the main sources of income and allows diet diversification for the rural population. Natural rivers and water reservoirs are the habitats of many freshwater fish species. There are several types of aquacultures in the country, including cage culture with cages made of steel frames, bamboo, net or wood; rice-fish culture in irrigated areas; pond culture in small ponds created in rural lowland areas and used just to cover family requirements.

Figure 5: Lao People’s Democratic Republic – Production of main agricultural commodities, 2006–2021



Sources: FAO. 2022. *Data*. Food and Agriculture Organization Corporate Statistical Database (FAOSTAT) <https://www.fao.org/faostat/en/#data/> and Country Cereal Balance Sheet (CCBS). Global Information and Early Warning System on Food and Agriculture (GIEWS). Rome. Cited November 2022. <https://www.fao.org/giews/data-tools/en/>.



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CEREAL PRODUCTION IN 2022/23

Key factors affecting cereal crop production

Rainfall and weather conditions

The rainfall analysis is based on remote sensing data provided by the Food and Agriculture Organization of the United Nations (FAO) and the World Food Programme (WFP) on rainfall estimates (RFEs) and Vegetation Health Index (VHI). The spatial and temporal distribution of the 2022 rainy season, which normally extends from May to October, was uneven and had localized negative effects on crop yields. After a timely onset and near-average rainfall amounts in May 2022, precipitation amounts were below average in June, leading to soil moisture stress and negatively affecting transplanting and establishment of paddy crops, mostly in northern and southern parts of the country (Figure 6). The below-average effect on crop and vegetation growth is shown by the vegetation index derived from satellite imagery (Map 1). The negative anomalies of the vegetation index were particularly visible in the northern provinces of Xayaboury, Huaphanh, Xiengkhuang, Xaisomboun and Borikhamxay, and in the southern provinces of Saravan, Sekong and Champasak (Map 1 and 2). During July and August 2022, precipitation amounts were average to above average and generally well distributed over the main cropping areas in southern and central provinces, benefitting late plantings and transplanting activities, and crop development. However, the passage of tropical storms *Ma-on* in late August over northern parts of the country and *Noru* in late September over southern provinces, brought strong winds, heavy rains and flooding, causing severe localized crop losses. In the most affected areas, large areas of paddy, cassava, banana and vegetable fields as well as industrial woodlands were destroyed. Farmers reported that water remained in the fields for up to two weeks, particularly affecting paddy in lowlands during the panicle initiation and flowering stages, resulting

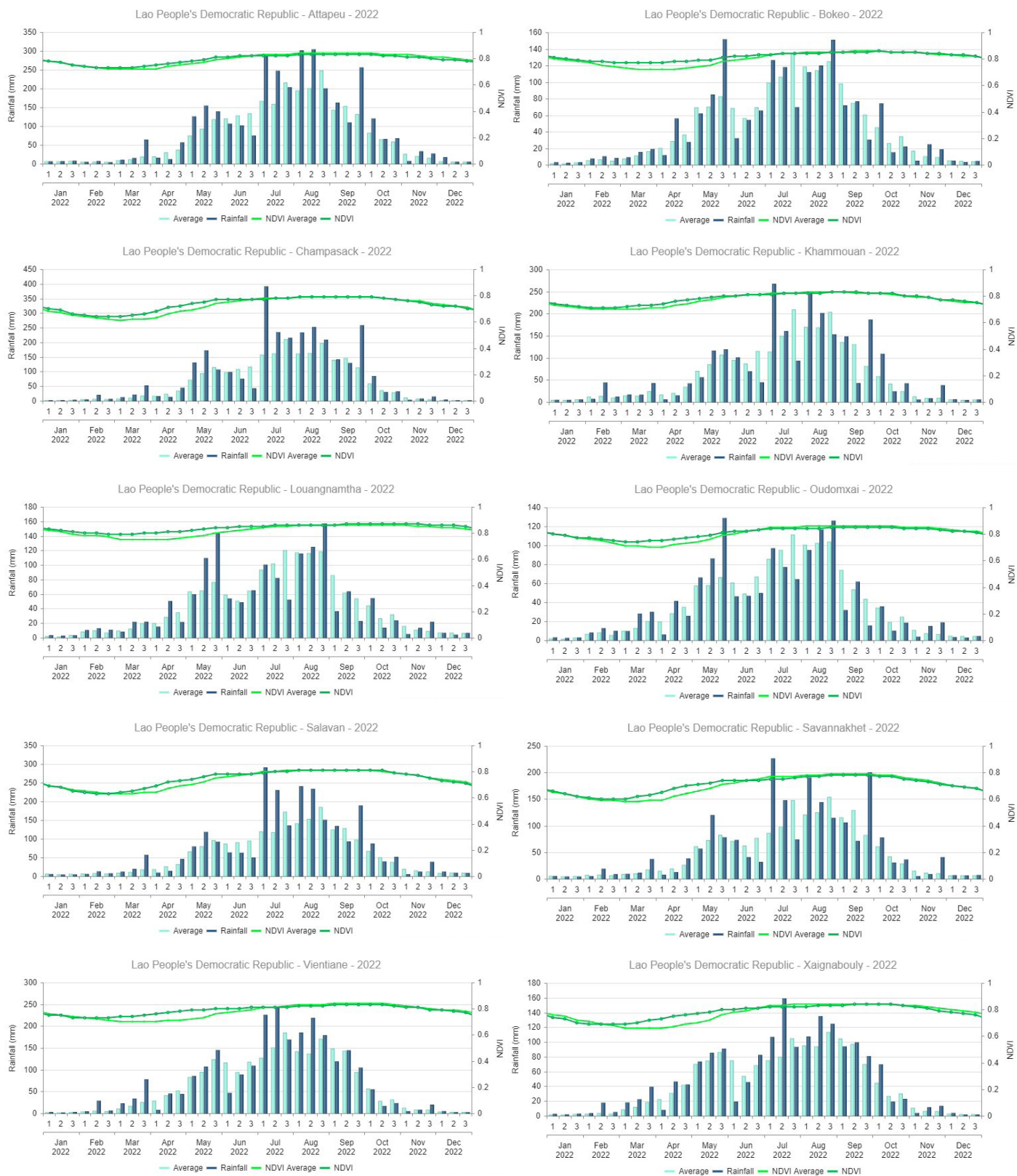


in reduced production of grains. However, the above-average rains boosted yield prospects of paddy crops in central main producing areas. The storms almost did not affect the short cycle varieties, as their harvest was virtually completed, but they had a moderate impact on the long cycle varieties. The monsoon precipitation receded in September, about one month earlier than normal, helping to reduce the excess of soil moisture and allowing harvesting activities. In the central provinces of Xiengkhuang and Xaisomboun, dry weather conditions at the end of September 2022 led to the wilting of late planted or replanted crops which were at a critical development stage, negatively affecting yields.

Fertilizers

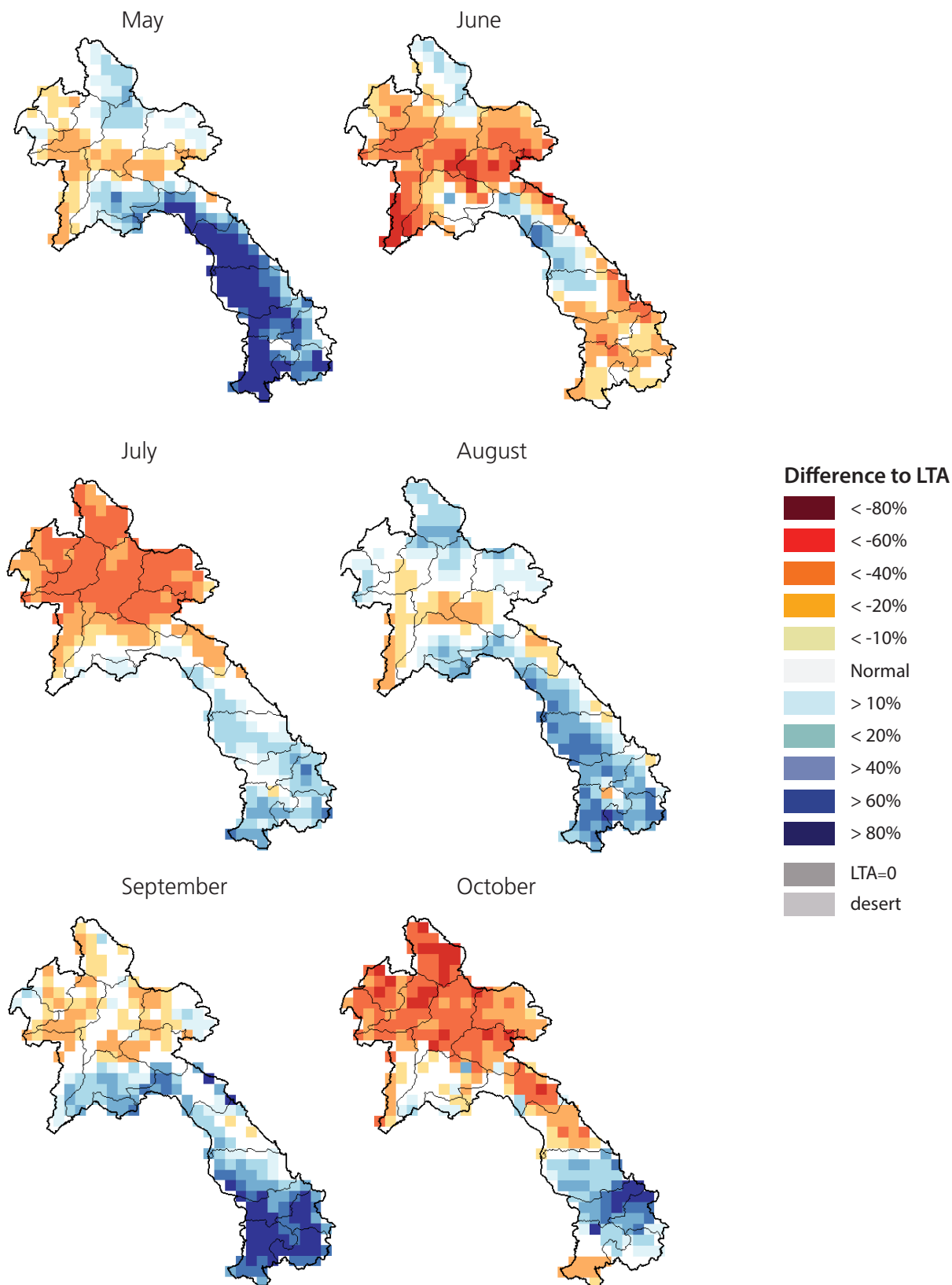
In general, the utilization of fertilizers in the country is just well below the government recommended rates due to their high prices and farmers' perception that the soils have an adequate level of fertility. Especially in remote areas, the application of chemical fertilizers on paddy has been always minimal mainly due to high transportation costs. In these areas, the most common practice is applying organic fertilizers, such as animal manure, liquid organic fertilizers, rice husk, straw and tree leaves, with small quantities of chemical fertilizers,

Figure 6: Lao People’s Democratic Republic – Rainfall amounts, rainfall estimates and Normalized Difference Vegetation Indexes (NDVIs), 2022



Source: WFP. 2022. *Seasonal: Rainfall & Vegetation: Visualizations*. The vulnerability analysis and mapping (VAM) of the World Food Programme (WFP). Rome. Cited November 2022. https://dataviz.vam.wfp.org/seasonal_explorer.

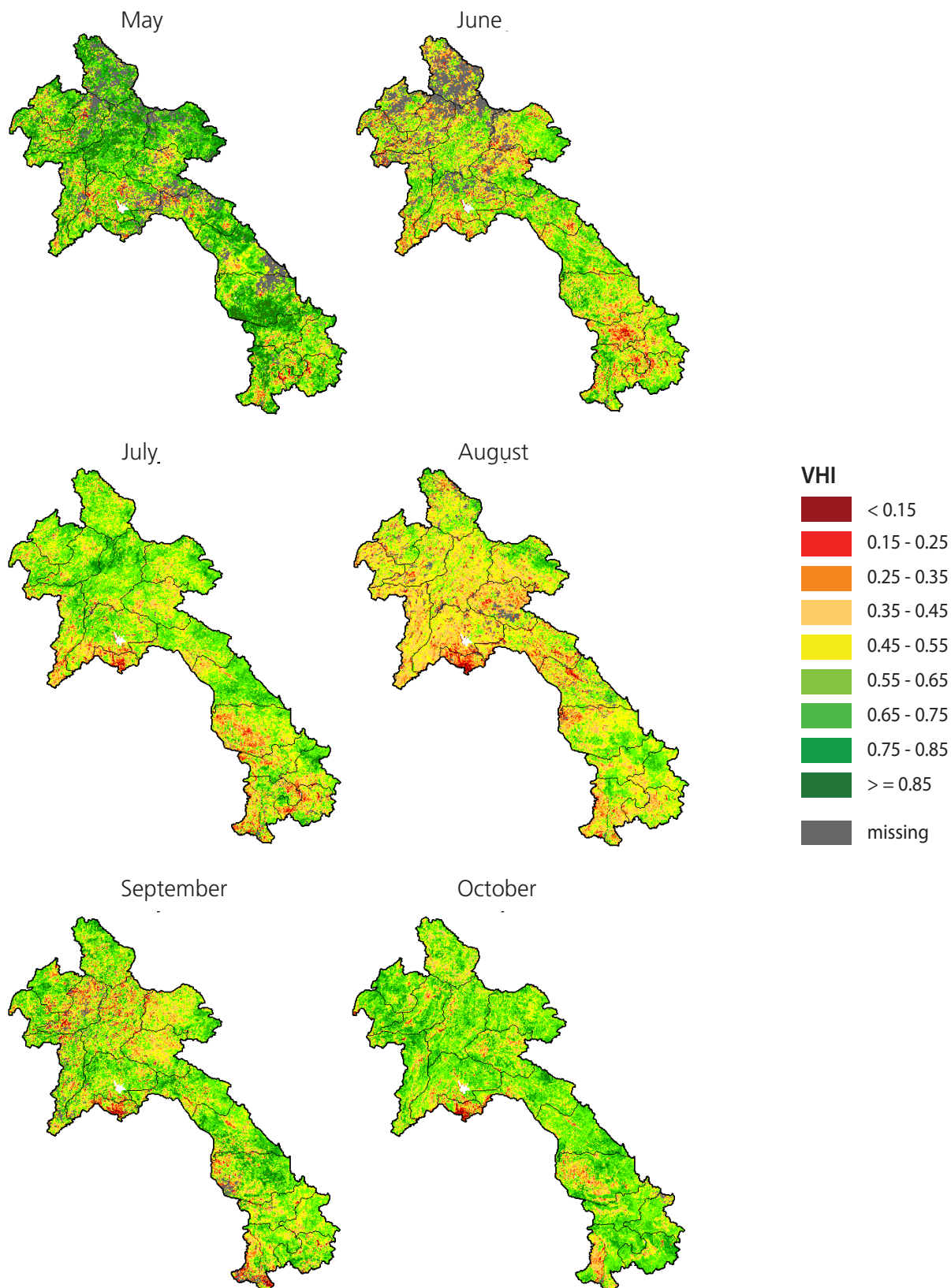
Map 1: Lao People's Democratic Republic – Variation of monthly rainfall amounts compared to the long-term average, May–October 2022



Disclaimer: The designations employed and the presentation of material in this information product do not imply the expression of any opinion whatsoever on the part of FAO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Adapted from United Nations World map, 2020.

Source: FAO. 2023. Earth Observation. Global Information and Early Warning System on Food and Agriculture (GIEWS). Rome. Cited November 2022. <http://www.fao.org/giews/earthobservation/index.jsp?lang=en>.

Map 2: Lao People's Democratic Republic - Vegetation Health Index (VHI) anomalies, May–October 2022



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Source: FAO. 2023. *Earth Observation*. Global Information and Early Warning System on Food and Agriculture (GIEWS). Rome. Cited November 2022. <http://www.fao.org/giews/earthobservation/index.jsp?lang=en>.

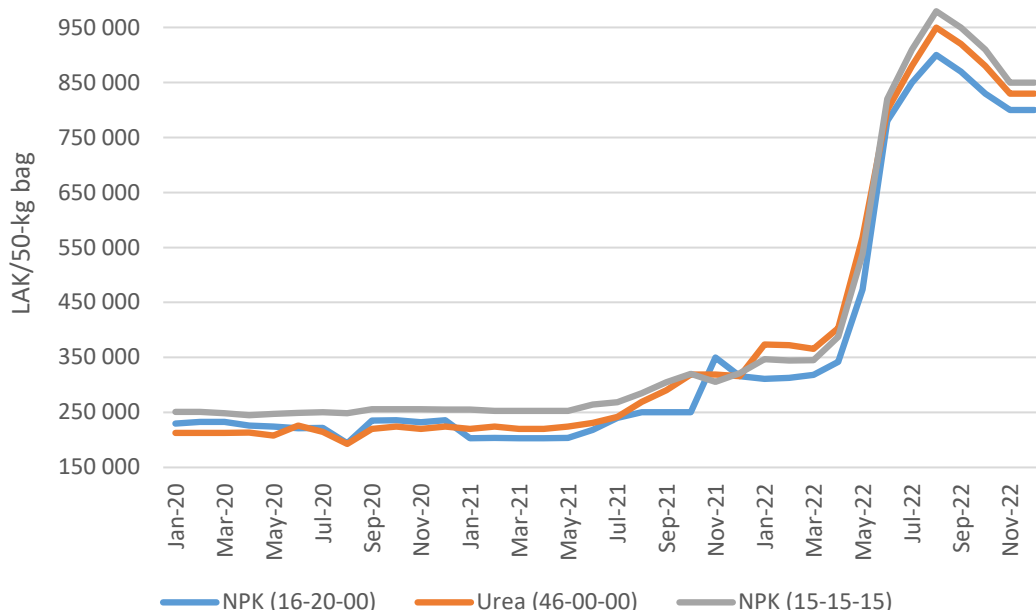
before transplanting the crops. Only farmers in the most productive southern and central provinces use high quantities of chemical fertilizers at the recommended rate of 250–300 kg per hectare of combined chemical fertilizers, namely nitrogen N, phosphorus P, potassium K. The rest of the farmers reported to use only 50-100 kg per hectare of urea or 150 kg per hectare of nitrogen, phosphorus and potassium (NPK). Chemical fertilizers are mostly imported, mainly from Thailand, and domestic prices reflect trends in the international market. International prices of fertilizers soared in 2021, driven by strong international demand and by high input costs. Prices of phosphates raw materials, particularly sulphur and ammonia, have increased sharply in 2021 as COVID-19 restrictions limited the supply of raw materials for their industrial production. International prices of fertilizers spiked in March–April 2022, reaching near-record high levels supply disruptions caused by sanctions imposed to the Russian Federation and Belarus, amid the war in Ukraine, and the suspension of exports from China (mainland) until June 2022.

International prices of fertilizers occurred at the same time of the strong depreciation of the national currency and dwindling foreign currency

reserves, which together severely constrained the country’s capacity to import. As a result, import volumes of fertilizers dropped in 2022 compared to previous years.

After being generally stable from 2020 to early 2022, domestic prices of the most common fertilizers, including NPK, urea and diammonium phosphate (DAP) surged between March and August 2022, and were almost three times above their levels in the previous year. For example, the price of a 50-kg urea bag that varied between LAK 750 000 (USD 43) to LAK 900 000 (USD 52) in remote areas, mostly reflecting higher transportation costs, amid elevated fuel prices, were more than 250 percent higher compared with last year (Figure 7). The price of NPK fertilizer varied from LAK 600 000 (USD 35) to LAK 800 000 (USD 46) in 2022, an increase of 270 percent year-on-year. In most visited areas, interviewed farmers informed the mission that due to the elevated prices they delayed the application of fertilizers and/or have reduced the amount required for the main (wet) season paddy by about 50 percent that negatively affected yields of 2022 crops. The high fertilizer prices particularly constrained fertilizer access for small-scale

Figure 7: Lao People’s Democratic Republic – Domestic fertilizer prices, 2020–2022



Source: Authors’ own elaboration based on the data provided by the Ministry of Agriculture and Forestry (MAF) to the 2022 FAO/WFP Crop and Food Supply Assessment Mission (CFSAM) to the Lao People’s Democratic Republic, 2022.

farmers and in many cases, they resorted to buying low quality and ineffective fertilizers in the black market.

Seeds

The availability of seeds for paddy, maize and other crops was generally adequate during the 2022 main (wet) season. Regarding paddy, about 90 percent of smallholder farmers used seeds retained from previous harvests (in some cases, seeds were retained for up to four years) and/or farmer-to-farmer exchanges, but the quality of these seeds is not always good and decreases productivity. Only 10 percent of the farmers had access to certified seeds from the District authorities such as the DAFO or the government-registered seed farmers. The domestic price of certified paddy seeds increased from LAK 6 000 per kg in 2021 to LAK 8 000 per kg in 2022. The seed paddy rate for direct seeding is 120 kg per hectare, while for transplanting is 50 kg per hectare.

Regarding maize and vegetable crops, hybrid seeds are widely used and are entirely purchased by farmers from markets. As the bulk of the hybrid seeds is imported, mostly from Thailand, domestic prices increased significantly in 2022 due to the sharp depreciation of the national currency against United States dollar and Thai baht. For example, the cost of a 5-kg package of long bean seeds was LAK 200 000 in 2022 compared with LAK 130 000 in 2021.

Pests and diseases

The use of chemical products to control pests and diseases is low, mostly due to the widespread concern about their impact on human health and the environment, but also due to their high prices and farmers' limited knowledge about their correct use in terms of quantity and time. The removal of insects by hands and the use of home-made pesticides with minerals and plants are the most common pest control method. Since 2016, government programmes have been promoting organic crop production through Good agricultural practices (GAP) and issued several regulations to control and limit the use of pesticides.

The most commonly used insecticides were chlorpyrifos, diazinon, fipronil, deltamethrin,

abamectin and imidacloprid, imported from Thailand. Farmers mostly purchase chemical pesticides from local shops or middlemen, except for farmers living next to the border with Thailand, who prefer to buy directly from abroad. However, in 2022 no major outbreak of pests and diseases on crops were reported as dryer-than-average weather conditions reduced their presence on crops. Minor infestations of brown plant hoppers, stem borers, thrips, leaf folders, snails, rodents and crabs to the paddy crops occurred, but most farmers reportedly managed to successfully control them. The mission observed the presence of bacterial leaf blight and rice blast in localized areas. Rodents caused minor losses, especially concentrated in upland paddy and maize crops in northern provinces. The mission was informed that farmers frequently resorted to buying ineffective or counterfeit products, which are smuggled in the country through cross-border trade. Although farmers use handbooks provided by agriculture officers, their capacity to identify pests and diseases on crops as well as to select appropriate chemicals (pesticide, fungicide and bactericide) is limited.

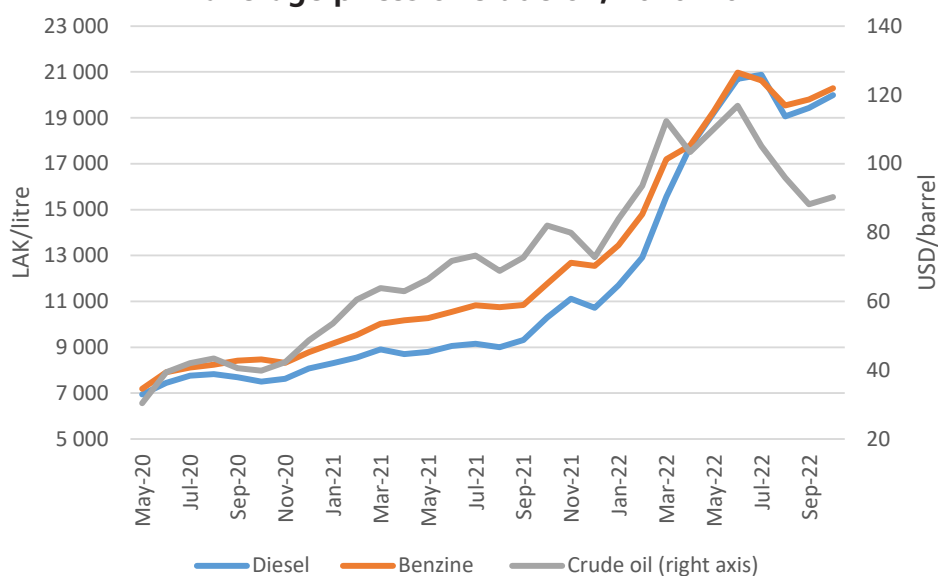
Labour

The average daily wage for farm labour increased from LAK 50 000 in 2021 to LAK 70 000 in 2022. In some areas, farmers indicated labour shortages, as many migrant workers resumed their work abroad (primarily in Thailand) to fetch better wages following the relaxation of COVID-19 travel restrictions.

Fuel

Domestic prices of fuel follow trends of international crude oil quotations (Figure 8) as all refined petroleum products required for transport, household, industrial and commercial uses are imported from Viet Nam, Thailand, Malaysia and Singapore. Fuel supply deficits grew sharply since April–May 2022, caused by the strong depreciation of the Lao kip and the dwindling foreign currency reserves that limited imports. Domestic prices of diesel and gasoline, an important input in local agriculture, surged by 77 and 56 percent, respectively, in the first six months of 2022. In June–July 2022, corresponding to the planting time for the main cereals, prices of

Figure 8: Lao People’s Democratic Republic – Domestic prices of fuel and international average prices of crude oil, 2020–2022



Sources: World Bank. 2022. *Commodity Markets*. World Bank Group. NW Washington. Cited November 2022. <https://www.worldbank.org/en/research/commodity-markets> and Authors’ own elaboration based on the data provided by the Market Analysis Division, Domestic Trade Department, Ministry of Industry and Commerce to the 2022 FAO/WFP Crop and Food Supply Assessment Mission (CFSAM) to the Lao People’s Democratic Republic, 2022.

diesel peaked at about LAK 20 750 per litre (about USD 1.23 per litre), a level almost twice as high as in the same month a year before (LAK 9 100 per litre). By October–November 2022, when the harvest of the main crops was ongoing, domestic prices remained at elevated levels. Fuel prices surged more in remote areas of the country, especially affecting the most vulnerable farmers and households.

Land preparation and planting activities are mostly mechanized throughout the country using mono axle tractors, while harvesting of paddy is usually done manually or using small cutting machines that operate on gasoline. Combined harvesters are used in the most productive central and southern areas. At the time of the field visits, farmers informed the mission about constraints to access fuel in 2022 that caused delays in planting operations in some areas and hampered harvesting operations. Some farmers informed the mission that they resorted to buying fuel from the black market at prices 200–300 percent higher than the official market value.

In 2022, the cost of hiring a mono-axle tractor was LAK 2.4 million per hectare for land preparation, doubling the previous year’s level when prices ranged between LAK 1.2 to LAK 1.3 million per hectare.

Production of cereals and other crops in 2022

Paddy area planted and harvested during the 2022 main (wet) season

The total area harvested of the 2022 main (wet) paddy crop is estimated at 827 000 hectares, 3 percent below the 2021 level and slightly above the five-years average. In northern and southern provinces of the country, floods/waterlogging led to crop wilting, reducing the overall area harvested by 7 and 8 percent, respectively, compared with the five-year average. The largest share of area losses was recorded in the provinces of Bokeo, Oudomxay and Huaphanh in the north and Saravan in the south, particularly in lowland areas (Table 3). In these areas, farmers reported that they did not replant these areas due to two reasons: either the land had been covered with sand and debris making it impossible to re-plant or water receded too late to justify replanting with paddy. In the central provinces of the country, which normally contribute to about 55 percent of the total main output, the area harvested is estimated at about 10 percent above the five-year average, almost entirely offsetting the area contractions in the north and south. The harvested area increased in all central provinces, except in Xiengkhuang that was affected by dry weather conditions.

Table 3: Lao People’s Democratic Republic – Comparison between main (wet) season 2022, 2021, five-year average, harvested area, yield and production of upland and lowland rice, combined

Province	Area harvested ('000 hectares)					Yields (tonnes per hectare)					Production ('000 tonnes)				
	2022	2021	Percent change: 2022 over 2021	Average	Percent change: 2022 over five-year average	2022	2021	Percent change: 2022 over 2021	Average	Percent change: 2022 over five-year average	2022	2021	Percent change: 2022 over 2021	Average	Percent change: 2022 over five-year average
North	165	174	-5	177	-7	3	3	-7	3.5	-11	514	583	-12	622	-17
Phongsaly	16	17	-5	16	-2	3	3	-14	3	-20	43	53	-18	55	-22
Luangnamtha	20	18	8	16	19	3	3	7	3	-5	60	52	16	53	13
Oudomxay	20	25	-20	27	-25	3	3	-10	3	3	63	87	-28	82	-23
Bokeo	14	16	-14	18	-22	4	4	-9	4	-10	50	63	-22	71	-30
Luangprabang	38	34	10	34	10	3	3	-6	3	-5	104	100	4	100	4
Huaphanh	14	17	-14	21	-33	3	4	-10	4	-11	50	65	-23	83	-40
Xayaboury	43	47	-7	44	-2	3	3	-4	4	-16	144	163	-12	176	-18
Centre	467	471	-1	425	10	4	4	-1	4	-4	1 836	1 871	-2	1 738	6
Vientiane	59	61	-2	57	4	4	4	-9	4	-16	210	235	-10	240	-13
Xiengkhuang	17	19	-14	19	-14	4	5	-22	4	-10	66	97	-33	85	-23
Vientiane	58	54	7	55	5	4	4	-9	4	-9	229	236	-3	239	-5
Borikhamxay	40	40	-1	38	4	4	4	-7	4	-1	152	165	-8	147	3
Khammuane	85	86	-2	74	14	4	4	6	4	7	338	322	5	275	23
Savannakhet	208	207	1	179	16	4	4	4	4	-4	814	780	4	734	11
Xaisomboun	94	88	6	95	-1	0	0	-25	0	-16	28	36	-21	34	-17
South	191	205	-7	208	-8	4	4	-2	4	-1	748	814	-8	825	-9
Saravane	56	55	2	66	-16	4	4	-7	4	-9	219	232	-5	285	-23
Sekong	8	8	-2	8	-2	4	4	8	5	-1	36	34	6	37	-3
Champasack	106	118	-10	107	-1	4	4	0	4	-3	415	464	-11	431	-4
Attapeu	22	26	-14	21	3	4	3	2	3	5	78	88	-12	71	9
Total	823	850	-3	811	2	3.76	3.85	-2	4	-4	3 098	3 268	-5	3 185	-3

Sources: Authors’ own elaboration based on the data provided by the Ministry of Agriculture and Forestry (MAF) to the 2022 FAO/WFP Crop and Food Supply Assessment Mission (CFSAM) to the Lao People’s Democratic Republic, 2022.

Paddy yields

At the time of the mission, standing crops in the fields were ready to be harvested or harvest was already ongoing and MAF estimated of the yields appeared to the mission to be acceptable. Based on the MAF data, the mission estimated the average national yields of lowland main (wet) paddy in 2022 at 4 tonnes per hectare, 5 percent below the five-year average, reflecting unfavourable weather conditions and reduced or delayed application of agrochemicals (tables 4 and 5). The average yield of upland paddy, mostly grown in the north, is estimated 2 tonnes per hectare, 7 percent lower than the past five-year average, mainly due to dry weather conditions.

Overall, the combined lowland and upland average paddy yields of the 2022 main (wet) paddy crop is estimated at 3.8 tonnes per hectare, 4 percent below the five-year average.

Paddy production of the 2022 main (wet) season

Mostly reflecting the decline in yields, 2022 main (wet) season paddy production in uplands and lowlands is estimated at 3.1 million tonnes, 3 percent below the five-year average. The highest declines in production, ranging between 20 and 39 percent year-on-year, were registered in the provinces of Phongsaly, Bokeo, Oudomxay, Huaphanh and Xayaboury in the

Table 4: Lao People's Democratic Republic – Comparison between main (wet) season 2022, 2021, five-year average, harvested area, yield and production of lowland rice

Province	Area harvested ('000 hectares)					Yields (tonnes per hectare)					Production ('000 tonnes)				
	2022	2021	Percent change: 2022 over 2021	Average	Percent change: 2022 over five-year average	2022	2021	Percent change: 2022 over 2021	Average	Percent change: 2022 over five-year average	2022	2021	Percent change: 2022 over 2021	Average	Percent change: 2022 over five-year average
North	93	107	-6	106	-5	4	4	-2	4	-8	372	447	-17	469	-21
Phongsaly	6	8	-23	8	-20	4.1	4.4	-7	5	-14	25	35	-29	36	-31
Luangnamtha	10	10	9	9	5	4.0	3.6	11	4	-1	42	34	22	37	-4
Oudomxay	10	16	-33	15	-32	4.2	4.3	-6	4	-2	44	67	-34	66	-5
Bokeo	10	12	-17	13	-20	4.2	4.5	-7	5	-11	43	56	-23	61	-29
Luangprabang	14	14	-1	13	1	4.1	4.3	-3	4	-5	56	58	-4	58	-3
Huaphanh	10	12	-19	13	-22	4.1	4.6	-9	5	-12	41	56	-26	59	-31
Xayaboury	32	36	-11	34	-7	3.8	3.9	-3	4	-14	121	141	-14	152	-20
Centre	454	459	-1	414	10	4	4	0	4	-3	1 823	1 842	-1	1 712	7
Vientiane	52	53	-2	51	2	4.1	4.4	-8	4	-9	210	235	-10	225	-7
Xiengkhuang	15	18	-16	18	-16	4.2	4.6	-9	5	-9	63	82	-24	82	-23
Vientiane	56	52	6	53	5	4.1	4.5	-9	4	-8	227	235	-3	233	-3
Borikhamxay	37	38	-3	35	5	4.1	4.3	-5	4	1	149	162	-8	141	6
Khammuane	83	85	-2	72	15	4.1	3.8	8	4	8	337	320	5	272	24
Savannakhet	206	206	0	178	16	3.9	3.8	5	4	-4	814	777	5	731	11
Xaisomboun	6	8	-23	7	-18	4.1	4.2	-5	4	5	24	32	-27	28	-16
South	191	205	-7	202	-5	4	4	-5	4	-5	742	814	-9	825	-10
Saravane	56	55	2	66	-16	4.0	4.2	-7	4	-9	219	232	-5	285	-23
Sekong	8	8	7	8	-2	4.1	4.5	-10	5	-9	33	34	-4	37	-11
Champasack	106	118	-10	107	-1	3.9	3.9	0	4	-3	415	464	-11	431	-4
Attapeu	22	25	-10	21	3	3.4	3.4	-2	3	0	74	84	-12	71	4
Total	739	771	-4	722	2	4	4	-1	4	-5	2 937	3 102	-5	3 005	-2

Sources: Authors' own elaboration based on the data provided by the Ministry of Agriculture and Forestry (MAF) to the 2022 FAO/WFP Crop and Food Supply Assessment Mission (CFSAM) to the Lao People's Democratic Republic, 2022.

north, the provinces of Xiengkhuang in the centre and the provinces of Saravan and Sekong in the south.

Production forecast for the 2022/23 secondary (dry) season paddy

Planting of the 2022/23 secondary (dry) season paddy, entirely irrigated, was planted between December and January, the mission estimates the area planted at 80 000 hectares, that is 8 percent below the five-year average. The mission considers that sowing has been constrained by limited amount of irrigation water following the damages to the irrigation infrastructure caused by the repeated floods that occurred in 2018,

2019 and 2022. In addition, farmers interviewed by the mission declared their intention to shift paddy land to cash crops that require less irrigation water and agrochemicals, amid high domestic prices. Electricity and fuel costs for pumping water remained high during the planting window. Average yields are forecast by the mission at 4.5 tonnes per hectare, 4 percent below the five-year average, as elevated prices of agrochemical and reduced water supplies for irrigation are expected to also have a negative effect on yields. Overall, production of the secondary (dry) season paddy crop is forecast by the mission at 360 000 tonnes, an 8 percent decline from the 2021 near-average level.

Table 5: Lao People's Democratic Republic – Comparison between main (wet) season 2022, 2021, five-year average, harvested area, yield and production of upland rice

Province	Area harvested ('000 hectares)					Yields (tonnes per hectare)					Production ('000 tonnes)				
	2022	2021	Percent change: 2022 over 2021	Average	Percent change: 2022 over five-year average	2022	2021	Percent change: 2022 over 2021	Average	Percent change: 2022 over five-year average	2022	2021	Percent change: 2022 over 2021	Average	Percent change: 2022 over five-year average
North	72	67	8	72	1	2	2	-3	2	-8	142	136	5	153	-7
Phongsaly	10	9	11	9	15	2	2	-5	2	-13	19	18	5	19	0
Luangnamtha	9	9	7	7	26	2	2	-2	2	-8	19	18	5	16	16
Oudomxay	10	10	0	12	-16	2	2	-5	1	42	19	20	-5	16	19
Bokeo	3	4	-6	5	-29	2	2	-6	2	-10	7	8	-12	10	-36
Luangprabang	24	20	17	21	15	2	2	-2	2	-1	48	42	15	42	14
Huaphanh	4	4	-2	9	-50	2	2	-2	3	-28	9	9	-4	24	-64
Xayaboury	11	11	4	10	16	2	2	0	2	-17	23	22	3	23	-3
Centre	13	12	9	13	-4	2	2	-2	2	0	25	23	7	26	-4
Xiengkhuang	8	8	2	7	16	2	2	-3	2	-14	15	15	-1	15	-1
Borikhamxay	2	1	13	1	10	2	2	-7	2	-7	3	3	5	3	2
Vientiane	1	1	45	1	-23	2	2	9	2	11	2	1	40	2	-20
Khammuane	0	0	-37	1	-92	2	2	1	2	2	0	0	-36	4	-94
Xaisomboun	2	2	28	2	-3	2	2	5	2	-16	5	4	34	6	-19
South	3	2	37	3	1	2	3	-23	2	-8	6	6	5	7	-7
Sekong	2	1	30	2	-5	2	2	-4	2	-11	3	2	24	3	-16
Attapeu	2	1	44	2	7	2	3	-36	2	-4	3	4	-8	3	3
Total	88	81	9	88	0	2	2	-3	2	-7	174	165	5	186	-7

Sources: Authors' own elaboration based on the data provided by the Ministry of Agriculture and Forestry (MAF) to the 2022 FAO/WFP Crop and Food Supply Assessment Mission (CFSAM) to the Lao People's Democratic Republic, 2022.

Table 6: Lao People's Democratic Republic – Rice production by season, 2017/18–2022/23

Year	Main (wet) season lowland			Main (wet) season upland			Secondary (dry) season irrigated			Total, main (wet) and secondary (dry) season		
	Area ('000 hectares)	Yield (tonnes/hectare)	Production ('000 tonnes)	Area ('000 ha)	Yield (tonnes/hectare)	Production ('000 tonnes)	Area ('000 hectares)	Yield (tonnes/hectare)	Production ('000 tonnes)	Area ('000 hectares)	Yield (tonnes/hectare)	Production (million tonnes)
Average (2017–2021)	723	4.2	3 005	82	2.2	183	87	4.8	416	892	3.9	3 604
2021/22	771	4.0	3 102	81	2.0	165	87	4.5	392	939	3.8	3 659
2022/23	780	3.8	2 937	86	2.0	174	80	4.5	360	946	3.8	3 471

Sources: Authors' own elaboration based on the data provided by the Ministry of Agriculture and Forestry (MAF) to the 2022 FAO/WFP Crop and Food Supply Assessment Mission (CFSAM) to the Lao People's Democratic Republic, 2022.

Aggregate paddy production 2022/23

At the aggregate level, the 2022/23 paddy production, including the 2022/23 secondary (dry) season crops, still to be harvested, is forecast at

3.47 million tonnes, 4 percent below the previous five-year average (Table 6). It should, however, be noted that the production in the country varies greatly year on year, depending on the weather

conditions, distorting the practical application of the average production for comparison. For example, the average (3.59 million tonnes) of the previous five years (2017–2021) includes three years (2018, 2019 and 2020) of sharply reduced harvests, as yields were constrained by unfavourable weather conditions (Figure 4), underlining that the estimated decline in production in 2022 is from an already low baseline. In the preceding five-year period (2013–2017), for example, production averaged 3.93 million tonnes.

Other crops

Maize

The area harvested with maize has gradually declined since 2017, reflecting the drop of import demand by China (mainland), after the Government of China in 2016 decided to release domestic stocks of maize in local markets. In addition, part of the area planted with maize was replaced with vegetables and cash crops, such as cassava and sugarcane, which have more attractive domestic prices linked to the strong international demand.

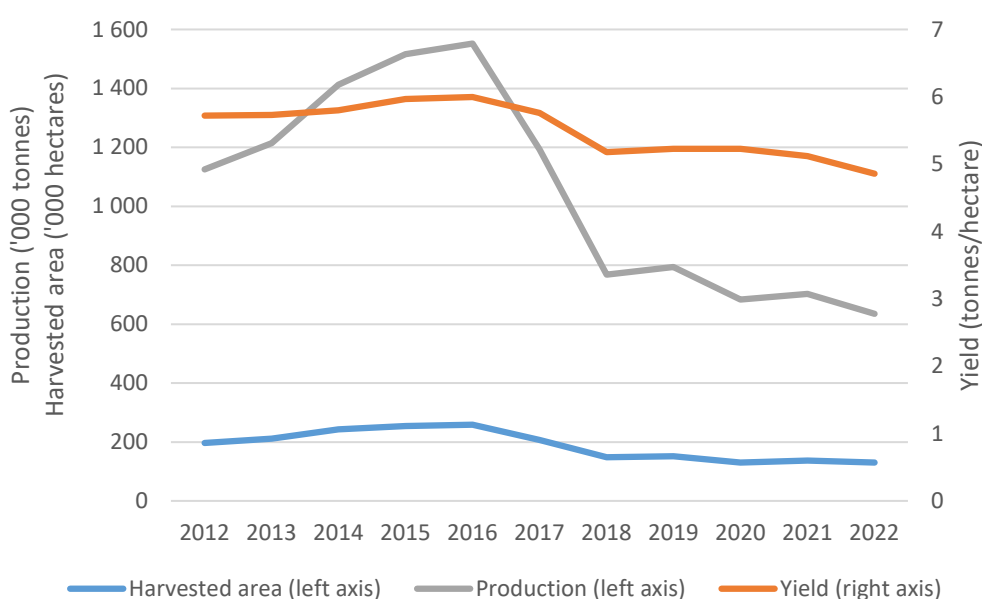
The 2022 maize output is officially estimated at about 635 000 million tonnes (Figure 9), 10 percent below the 2021 reduced level and 23 percent below

the five-year average. The area planted contracted in 2022 by 16 percent compared with the average levels, continuing the steady decrease observed in the previous year. Yields also declined from average levels due to dry weather conditions in the northern main producing areas, where 90 percent of the maize crop is grown. Reduced or delayed application of fertilizers, pesticides and herbicides also affected yields. Farmers mostly use hybrid and genetically modified (GM) varieties of maize seeds that require large quantities of inorganic fertilizers as well as pesticides. The area planted also contracted in 2022, continuing the steady decrease observed in the previous year.

Cassava

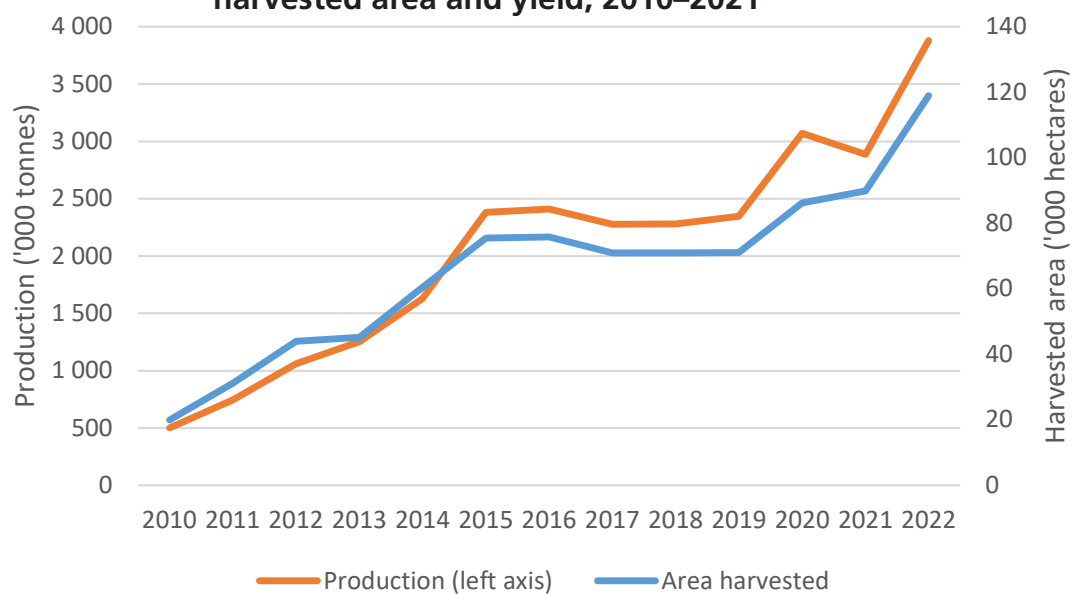
In recent years, cassava has become an important cash crop for export as it can be used for food, feed and industrial processing into starch, sweeteners and ethanol. Planted areas with cassava substantially increased over the last ten years, from 20 000 hectares in 2010 to 115 000 hectares in 2021 (Figure 10), driven by increasing import demand by neighbouring countries, namely China (mainland), Thailand and Viet Nam. Many farmers informed the mission that they stipulated seasonal contracts with foreign investors, who supplied agricultural

Figure 9: Lao People’s Democratic Republic – Total maize production, harvested and yield, 2010–2022



Sources: FAO. 2022. *Food and agriculture data*. Food and Agriculture Organization Corporate Statistical Database (FAOSTAT). Rome. Cited December 2022. <https://www.fao.org/faostat/en/> and Authors' own elaboration based on the data provided by the Ministry of Agriculture and Forestry (MAF) to the 2022 FAO/WFP Crop and Food Supply Assessment Mission (CFSAM) to the Lao People's Democratic Republic, 2022.

Figure 10: Lao People’s Democratic Republic – Total cassava production, harvested area and yield, 2010–2021



Sources: FAO. 2022. *Food and agriculture data*. Food and Agriculture Organization Corporate Statistical Database (FAOSTAT). Rome. Cited December 2022. <https://www.fao.org/faostat/en/> and Authors' own elaboration based on the data provided by the Ministry of Agriculture and Forestry (MAF) to the 2022 FAO/WFP Crop and Food Supply Assessment Mission (CFSAM) to the Lao People's Democratic Republic, 2022.

inputs on credit, such as seeds, fertilizers, plastic sheeting, as well as technical advice. This type of contract farming has expanded rapidly throughout the country in recent years for different cash crops. Cassava production in 2022 is officially estimated at a record level of 3.9 million tonnes, mostly reflecting the expansion in area. Yields in 2022 are estimated at 32.6 tonnes per hectare, close to the five-year average, since cassava is more tolerant to drought than other crops and it is mainly grown in upland that were not affected by the floods, while agrochemicals were provided by the contractors on credit.

Vegetables and other crops

The planted area with vegetables has increased rapidly from 100 000 hectares in 2010 to more than 185 000 hectares in 2021 due the strong local demand for consumption and the widespread adoption of contract farming implemented by foreign companies. At household level, vegetables are one of the main food sources for diet diversification. The area harvested with vegetables in 2022 is estimated at 175 900 hectares and total production is estimated at 1.4 million tonnes. Contract farming opportunities encourage farmers to shift from traditional rice cultivation to commercial vegetable production systems. The most cultivated leguminous crops are soybeans, peanuts, mung beans, black beans and red beans, while most common fruits are bananas,

watermelons, pineapples, lemons and cantaloupes. Tea, sugarcane and coffee ave recently gained importance as export-oriented crops.

Livestock production

The number of main livestock species (cattle, buffaloes and pigs) have steadily increased between 2017 and 2021 (Figure 11). Strong increases were registered in the number of poultry and pigs, which increased by about 30 and 10 percent, and are officially estimated at record levels of 48.1 million and 4.2 million, respectively, in 2021. Similarly, the number of cattle increased over the last five years, reaching record levels of 2.3 million, 16 percent above the 2017 level, supported by strong import demand of neighbouring countries, principally China (mainland) and Thailand. By contrast, the buffalo population has remained generally stable and it may be due to the increasing use of mechanization for land preparation.

Buffaloes and cattle are typically raised in free-range management systems, with continuous access to pasture. During the secondary (dry) season, due to the limited availability of pasture, paddy straw and concentrated feed is used to feed cattle and buffaloes. Usually, paddy straw from the main (wet) season crops is stored in a barn for later use. In the case of free range,

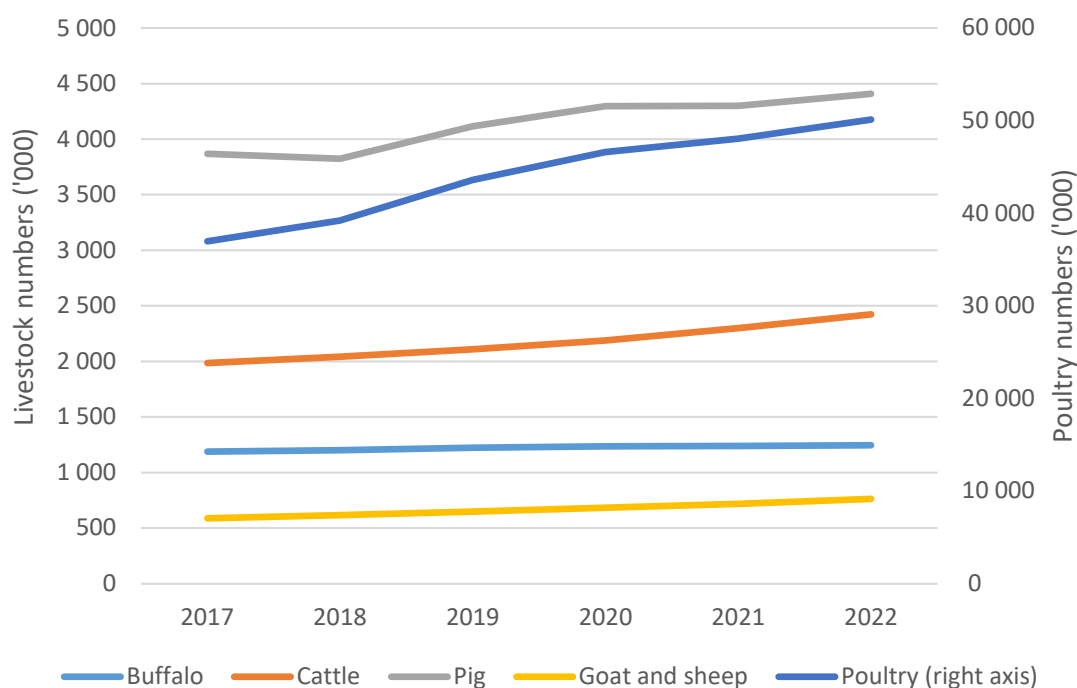
livestock exposed to wild-life and other animals increase the risk of transmission of diseases and hamper disease controls. Free-range and semi free-range systems are usually characterized by a small number of animals per household that are fed with kitchen waste and by-products of the milling process such as fine broken rice, rice germ and rice bran. The households involved in pig and poultry production manage animals in cages all year around. The topography of northern areas is dominated by uplands and plateau which constrain any expansion of grazing lands and, in many cases, farmers resort to fodder farming.

Livestock conditions at the time of the mission were reported to be satisfactory across most of the country. However, shortages and high prices of animal feed,

vaccines, veterinary drugs, fuel and electricity have negatively affected the production of poultry, pigs and cattle, important sources of protein in the local diet.

In June 2022, the prices of feed for cattle and pigs were LAK 280 000 per 30 kg and LAK 230 000 per 30 kg, with an increase of 65 to 100 percent year-on-year. The high price of animal feed is mainly due to increased production costs of raw materials such as maize, cassava and other grains, and to the high transportation costs. The cost of fodder seeds in 2021 was LAK 15 000 per kg and increased to LAK 50 000 per kg in 2022, limiting fodder production. Similarly, prices of veterinary vaccines and drugs soared on average by 130 percent, limiting vaccinations and veterinary treatments, with

Figure 11: Lao People’s Democratic Republic – Livestock numbers, 2017–2022



Sources: MAF. 2020. *Lao’s Agricultural Statistics Year book 2019*. Ministry of Agriculture. Division of Planning and Finance. Vientiane Capital. Cited November 2022. <https://ali-sea.org/aliseaonlineibrary/laos-agricultural-statistics-year-book-2019/> and Authors’ own elaboration based on the data provided by the Department of Livestock and Fisheries of Section Provincial Livestock and Fisheries, 2022.

Table 7: Lao People’s Democratic Republic – Comparison of prices of vaccines/medicines

Livestock	Type of vaccine	2022 prices (LAK per unit)	2021 prices (LAK per unit)	Change 2022 over 2021
Buffalo	Foot-and-mouth disease	20 000–25 000	10 000–15 000	67–100
Cow	Haemorrhagic septicaemia	10 000–15 000	5 000–8 000	88–100
Chicken	Newcastle disease/ Fowl cholera	25 000 (50 doses per vial)	8 000 (50 doses per vial)	310

Source: Authors’ own elaboration based on the data provided by the Ministry of Agriculture and Forestry (MAF) to the 2022 FAO/WFP Crop and Food Supply Assessment Mission (CFSAM) to the Lao People’s Democratic Republic, 2022.

consequent deterioration of animal health conditions (Table 7). Overall, prices of livestock inputs rose by 65–300 percent, whereas the sale price of livestock meat and poultry increased by 25–75 percent, resulting in lower income for livestock owners. Many farmers informed the mission that, due to the sharp increase in livestock input prices since April 2022, they resorted to distressed sales of animals. In addition, fuel prices constrained animal transportation, resulting in increased losses of perishable food items and declining income of farmers.

Several livestock diseases are prevalent in the country, but most of them are controlled by adequate veterinary services. The most common diseases among cattle and buffaloes are foot-and-mouth disease (FMD) and haemorrhagic septicaemia (HS). In 2022, no significant outbreaks of diseases for

buffaloes and cattle have been reported, with the exception of minor incidences of the lumpy skin disease in cattle in Vientiane and Bolikhamxay provinces. Villages are provided with veterinary services organized by the government and veterinary doctors' visits took place weekly (or monthly in remote areas) in previous years, but the occurrence declined in 2022 due to the high prices of fuel. Pigs and poultry are rarely vaccinated.

In some villages, the DAFO provides free vaccination services. Fowl cholera, Newcastle disease and the highly pathogenic avian influenza are common among the poultry population, although infected animal numbers are not always registered officially. Although few isolated cases of African swine fever (ASF) among pigs were recorded in the north in early 2022, the ASF has been successfully controlled and no new cases were reported since March 2022.

CEREAL SUPPLY AND DEMAND SITUATION

Market analysis

Despite the surge in agriculture input prices, such as fertilizers, pesticides, fuel and energy in 2022, farmgate prices of the most locally produced agricultural products increased comparatively less, offering low or no profit margins to farmers. By contrast, retail prices of locally produced food increased sharply in 2022 and reached record or near-record levels, reflecting elevated production and transportation costs as well as high charges by intermediaries. The strong depreciation of the national currency led to strong price spikes for a wide range of imported food commodities, such as wheat flour, salt, cooking oils and sugar. According to the Lao Statistics Bureau, the general and food inflation rates in January 2023 reached 40.3 and 47 percent, respectively, the highest levels since March 2000.

Rice

Prices of the glutinous type 2 rice variety, widely consumed in the country, started to soar in most markets since April 2022 and reached record highs in November 2022, averaging about 45 percent more than a year earlier. The price increase reflects the decline in the 2022 paddy production, high transportation costs and high prices of agricultural inputs. Price increases were also supported by an increase of the benchmark Thailand and Viet Nam export price for the same variety as the country relies on imports from both countries to cover its local needs. For example, the benchmark Thailand export price for glutinous type 2 rice variety in November 2022 was 13 percent above its year-earlier levels. Particularly strong price spikes were registered in northern rice deficit provinces, where the average retail prices of rice in November 2022 were more than 64 percent higher year-on-year, reflecting high transportation costs and poor road infrastructure. In the capital, Vientiane, rice prices in November 2022 were up 22 percent year-on-year (Figure 12).



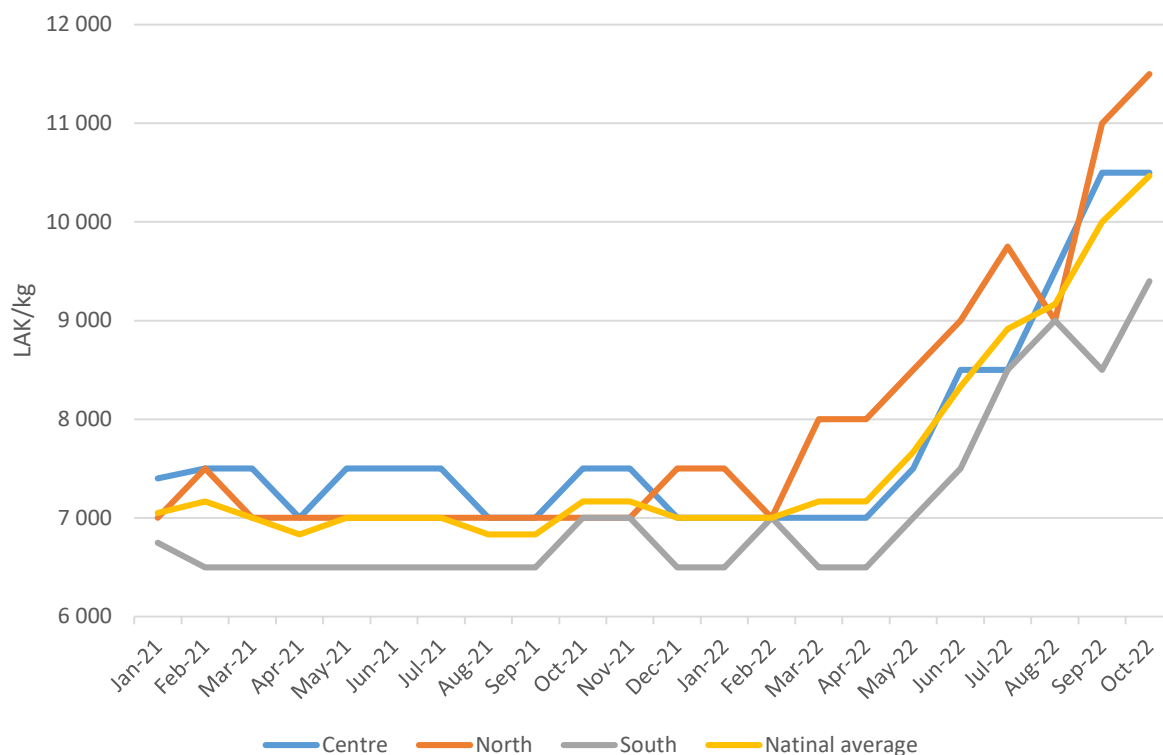
Discussions with rice traders, millers, farmers and DAFO officials during the mission confirmed the following key factors supporting the increase in rice prices in 2022 compared to 2021:

- Increased production costs and agricultural labour shortages.
- Concerns over the impact of unfavourable weather conditions on the 2022 main production in northern and southern provinces.
- Depreciation of the Lao kip.
- Increasing benchmark Thailand and Viet Nam export price for the same variety of rice.

Other food items

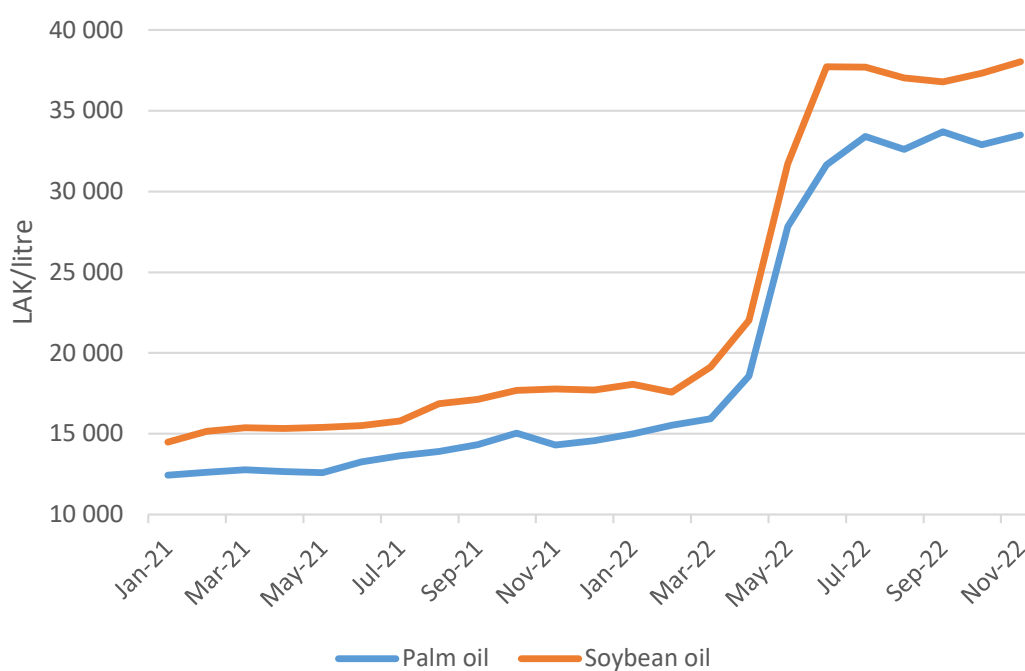
Similarly, prices of a wide range of imported and locally produced basic food commodities, including wheat flour, eggs, meat and cooking oils, rose throughout 2022 and reached, in many cases, record or near-record levels in November 2022, mainly reflecting the sharp depreciation of the Lao kip (Figure 13). The prices of wheat flour in November 2022 were about 80 percent higher compared to their year-earlier levels, while the prices of chicken and pork meat increased by 50 and

Figure 12: Lao People’s Democratic Republic – Retail prices of glutinous rice, 2nd quality (south, centre, north and national average), January 2021–October 2022



Source: Ministry of Industry and Commerce, 2022. Source: WFP. 2022. *Prices. The vulnerability analysis and mapping (VAM) of the World Food Programme (WFP). Rome. Cited November 2022. https://dataviz.vam.wfp.org/economic_explorer/prices.*

Figure 13: Lao People’s Democratic Republic – Retail prices of palm oil (south, centre, north and national average), January 2021–October 2022



Source: WFP. 2022. *Prices. The vulnerability analysis and mapping (VAM) of the World Food Programme (WFP). Rome. Cited November 2022. https://dataviz.vam.wfp.org/economic_explorer/prices.*

Table 8: Lao People's Democratic Republic – Comparison of prices of livestock and chicken meat (June 2022 compared with June 2021)

Type of livestock meat	2022 prices (LAK per kg)	2021 prices (LAK per kg)	Change 2022 over 2021
Buffalo meat	90 000	70 000	29
Beef	90 000	70 000	29
Pork	70 000	40 000	75
Duck	55 000	45 000	22
Chicken	45 000	30 000	50

Source: Authors' own elaboration based on the data provided by the Market Analysis Division, Domestic Trade Department, Ministry of Industry and Commerce, 2022.

Table 9: Lao People's Democratic Republic – Cereal supply/demand balance sheet for marketing year 2022/23 (September/August), '000 tonnes

	Rice (milled) ^{1/}	Maize	Total
Domestic availability	2 075	680	2755
Main (wet) season farm production	2 075	680	2 755
Secondary (dry) season production	1 859	635	2 494
Maize	216	45	261
Total utilization	2 350	680	3 029
Food use	1551	0	1551
Feed use	62	525	587
Seed requirements	75	3	78
Post harvest losses	311	48	359
Industrial	250	-	-
Exports	100	104	-
Stock build-up	0	0	0
Import requirements	275	0	275
Anticipated commercial imports	275	0	275

Note: Figures may not add up due to rounding.

^{1/} Paddy to rice milling rate of 60 percent.

Source: Authors' own elaboration based on the data collected during the 2022 FAO/WFP Crop and Food Supply Assessment Mission (CFSAM) to the Lao People's Democratic Republic, 2022.

75 percent, respectively, year-on-year (Table 8). In November 2022, the prices of vegetables, such as long beans, cucumbers, chillies, eggplants and shallots were considerably above their year-earlier levels.

Cereal supply/demand balance for marketing year 2022/23 (September/August)

The national cereal supply/demand balance for marketing year 2022/23 (September/August) is

summarized in Table 9, considering separately rice (in milled terms) and maize. In drawing up the national food crop balance, the following assumptions were made:

- **Paddy production** in 2022 is estimated at 3.4 million tonnes (in paddy terms), while maize production is estimated at 635 000 tonnes.
- An average **milling rate** of 60 percent used by the government has been adopted to derive the milled equivalent production figure used in the balance sheet.

- **Cereal stocks** are expected not to change during the 2023 marketing year (January/December).
- **Food use** is estimated at about 1.57 million tonnes, using the projected 2023 mid-year population of 7.53 million (UN-DESA, January 2023) and a per capita average consumption of 206 kg of milled rice. The use of maize for food is negligible.
- **Feed use** is estimated at about 587 000 tonnes, mostly maize plus a minimal quantity of rice, estimated by the mission at 3 percent of the total production.
- **Seed requirements** for 2023 are estimated at 94 000 tonnes on the basis of the recommended seed rates used in the country and the last three-year average planted area of about 950 000 hectares of rice and 150 000 hectares of maize. The following seed rates have been used: 80 kg per hectare for lowland paddy, 60 kg per hectare for upland paddy and 20 kg per hectare for maize.
- **Post-harvest** losses from harvesting to processing and during storage, are estimated at 359 000 tonnes, with rates of 15 percent for rice and 7 percent for maize.
- **Other uses** are estimated at 250 000 tonnes of rice used by the domestic brewing industry.

During the last five years, rice exports amounted on average to about 150 000 tonnes, mostly to Viet Nam and China (mainland). Rice exports in the 2022/23 marketing year (September/October) are expected to decline to 100 000 tonnes, mostly semi-milled/wholly milled rice polished or glazed. Despite the need to cover the domestic consumption requirements, this small quantity is expected to be still exported as some traders prefer to sell to neighbouring countries and not to the areas experiencing shortfalls, due to high transportation costs associated with high fuel prices and poor local road infrastructure. Maize exports in 2022/23 are forecast at 100 000 tonnes, half the level exported in 2021/22 and considerably below the five year average.

In the 2022/23 marketing year (September/August), import requirements of rice are anticipated at an above-average level of 275 000 tonnes. As requirements are expected to be fully covered by commercial imports, the mission does not forecast any uncovered food deficit.

HOUSEHOLD FOOD AND SECURITY SITUATION

Background information and food insecurity

The current acute food insecurity situation is tenuous owing to multiple factors, including high food, fuel and agricultural input prices, disruptions to livelihoods, reduced household income and purchasing power, and climatic shocks that led to localized disasters (flooding and typhoons) in 2022. These drivers are exacerbated by inequality and poverty. The cumulative effects of the global food and fuel crisis, and the COVID-19 pandemic have left many households more exposed to high food prices and declines in agricultural production, leaving them less resilient and more vulnerable to acute food insecurity. The situation is likely to worsen during the lean season from May to October 2023 (or sooner) should the macroeconomic situation deteriorate further and/or households' exhaust less severe means of coping. Policy makers, institutions and development partners are encouraged to remain vigilant and be prepared should a more severe situation materialize.

Since early September 2022, WFP has been monitoring the food security situation across the 18 provinces of the country using a remote household assessment approach. Based on November 2022 data, approximately 1.04 million



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people (13.9 percent) are estimated to be moderately acute food insecure and 71 000 people (0.9 percent) to be severely acute food insecure.^{1,2,xii} The highest levels of acute food insecurity are found in Attapeu (30 percent) and Louangnamtha (27 percent) provinces.^{3,xiii} One out of six households (17 percent) in rural areas are acutely food insecure compared to just 9 percent in urban areas. Households headed by a member with no formal education (24 percent) and those whose main source of income derived from the informal sector (29 percent) were also comparatively more likely to be food insecure.⁴ Figure 14 presents the acute food insecurity findings from the November 2022 round of data collection.

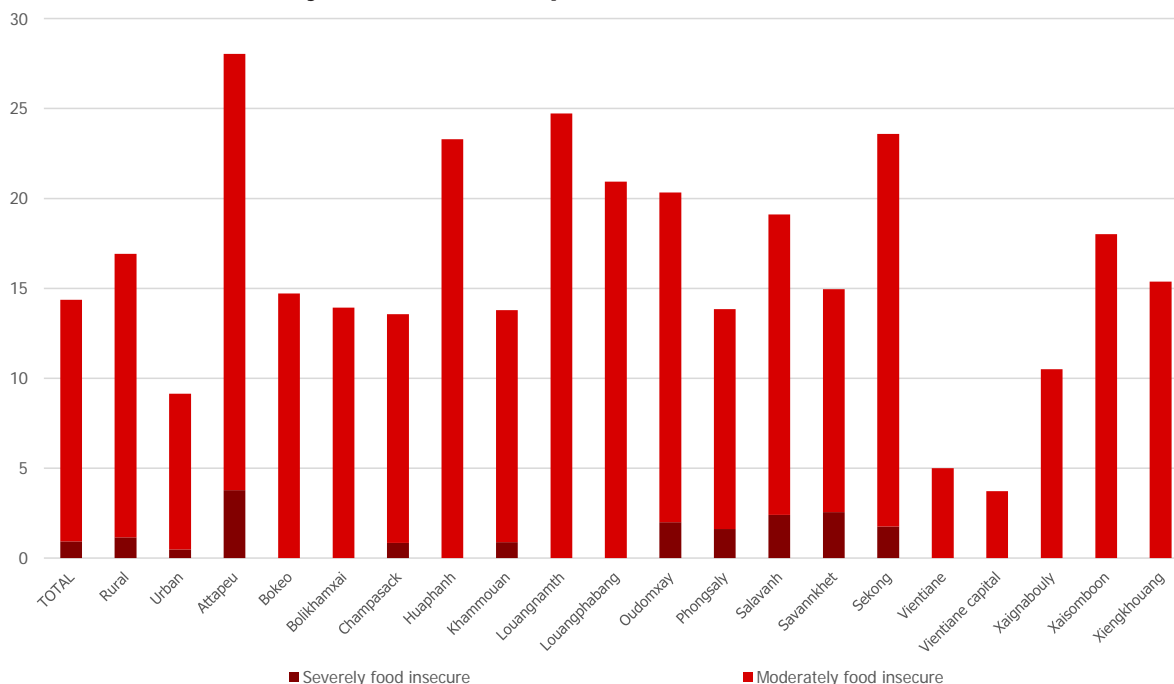
¹ The remote household food security data collected between 11 November and 10 December 2022 (sample size = 1 766 households) is the primary source of findings presented in this section; it has been abbreviated as "November 2022" in the text for clarity and brevity.

² LECS 2018/19 found that, nationally, 19 percent of households were moderately or severely food insecure according to a different measure of food insecurity. Due to the differences in methodology (footnote 3), readers are cautioned against inferring too much from these differences.

³ This estimate of food insecurity is based upon a modified version of WFP's Consolidated Approach for Reporting Indicators of Food Security (CARI) methodology. The calculation methodology does not require the collection of a lengthy expenditure module which is impractical for high frequency, phone-based surveys. Readers are, therefore, cautioned when interpreting direct comparisons between the food insecurity findings from these phone-based survey findings and those collected from traditional face-to-face survey methodologies.

⁴ Incomes derived from the informal sector include, daily wage labour (agricultural and non-agricultural), fishing/hunting, handicrafts, remittances, sale of firewood/charcoal, etc..

Figure 14: Lao People’s Democratic Republic – Acute food insecurity by residence and province, November 2022



Source: Authors’ own elaboration based on the data collected during the 2022 FAO/WFP Crop and Food Supply Assessment Mission (CFSAM) to the Lao People’s Democratic Republic by the World Food Programme (WFP) Lao People’s Democratic Republic, Remote food security monitoring system (mVAM), 2022.

Food access and coping mechanisms

Food consumption

November 2022 data reveal that almost one out of five households (19 percent) are consuming an inadequate diet.^{5,xiv} This represents a material deterioration compared to the Lao Expenditures and Consumption Survey (LECS), 2018/19 findings which found just 6 percent of the households nationally consuming an inadequate diet.^{6,xv} Data indicate that diet inadequacy is twice as high among households in rural areas as compared to those living in urban areas (23 percent and 10 percent, respectively), with the highest levels found in Xaisomboun Province (38 percent), among

households headed by a member with no education (32 percent) and households with 7 and more members (23 percent), Figure 15.

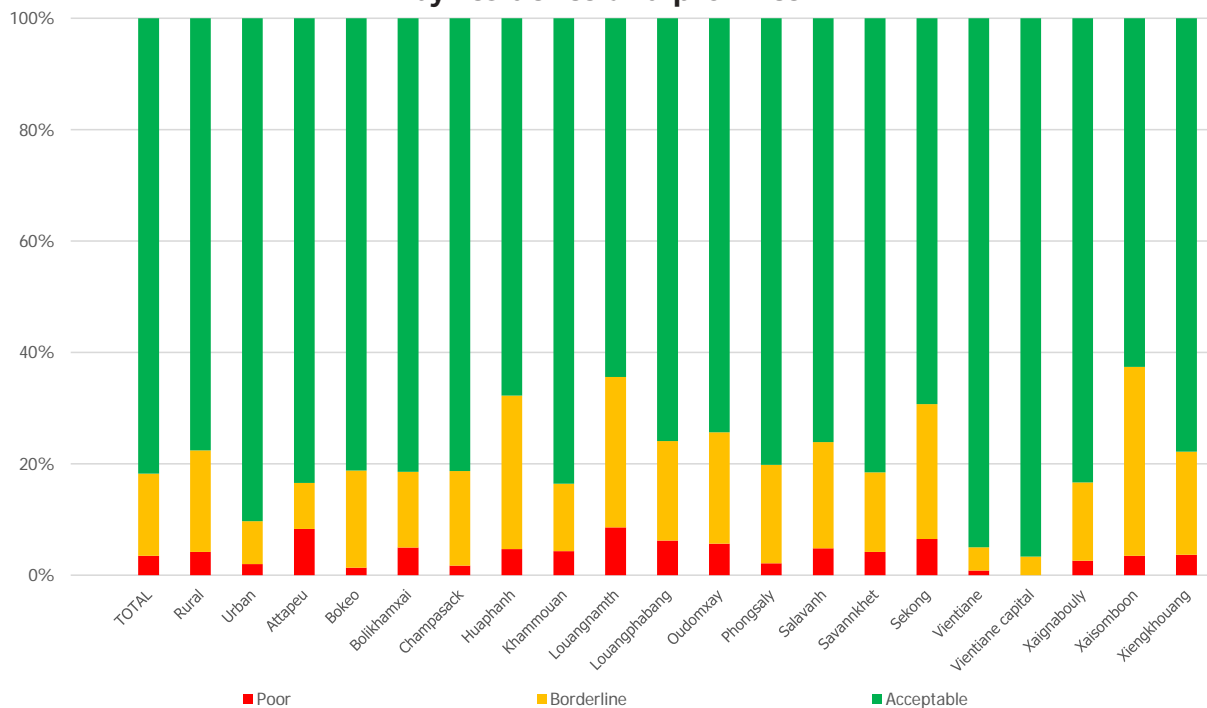
The November 2022 survey also collected information on the diet of children in the household. According to these data, approximately 54 percent of children aged 6–23 months were fed according to the global recommendations, meeting the minimum dietary diversity (MDD) in the 24 hours before the survey.^{7,xvi} Meaning about 46 percent of the children aged 6–23 months did not consume a minimum of nutrient-rich food groups during the previous day. Consumption of these poor diets is likely to affect the child’s development process as young children need energy and nutrient dense foods for growth. The proportion of children meeting the MDD was

⁵ This estimate is based on the food consumption score (FCS) indicator which measures dietary diversity and food frequency. A household FCS is calculated according to the types of foods consumed during the previous seven days, the frequencies with which they are consumed and the relative nutritional weight of the different food groups.

⁶ The findings are more comparable given that the FCS methodology was used in both surveys. However, the LECS 2018/19 collected data over an entire year, therefore, seasonality issues must be considered.

⁷ MDD is a core indicator for assessing infant and young child feeding (IYCF) and is calculated as the percentage of children 6–23 months of age who consumed foods and beverages from at least five out of eight defined food groups during the previous day (1. Breastmilk, 2. grains, roots and tubers, 3. legumes and nuts, 4. dairy products [milk, yogurt, cheese], 5. flesh foods [meat, fish, poultry and liver/organ meats], 6. eggs, 7. vitamin-A rich fruits and vegetables, and 8. other fruits and vegetables).

Figure 15: Lao People’s Democratic Republic – Food consumption by residence and province



Source: Source: Authors’ own elaboration based on the data collected during the 2022 FAO/WFP Crop and Food Supply Assessment Mission (CFSAM) to the Lao People’s Democratic Republic by the World Food Programme (WFP) Lao People’s Democratic Republic, Remote food security monitoring system (mVAM), 2022.

higher among those in urban areas compared to rural areas (70 vs. 48 percent, respectively). These findings compare with the values found in the Lao People’s Democratic Republic multiple indicator cluster survey (MICS), 2017 in which 45 percent of the children aged 6–23 months were consuming the recommended MDD (63 vs. 38 percent, respectively, in urban and rural areas).^{xvii}

Food-based coping strategies

At the time of the mission, households were using a variety of strategies to cope with reduced access to, and availability of, food resulting from the myriad challenges faced in 2022. The assessed households made considerable adjustments to the households’ consumption patterns in order to address food insecurity or imminent shortages. According to the November 2022 data, early attempts by households to minimize households’ food insecurity, shows that more than two out of five households (43 percent) regularly use food-based coping strategies because of insufficient amounts of food or money to buy food (Figure 16).⁸ Reduction in meal sizes was employed by one out of five households (21 percent)

and 18 percent reduced the consumption of food per adult members of the family to prioritize their children at least once in the previous week. Roughly one of two households (47 percent) in rural areas were regularly using food-based coping strategies as a buffer against food insecurity (Table 10).

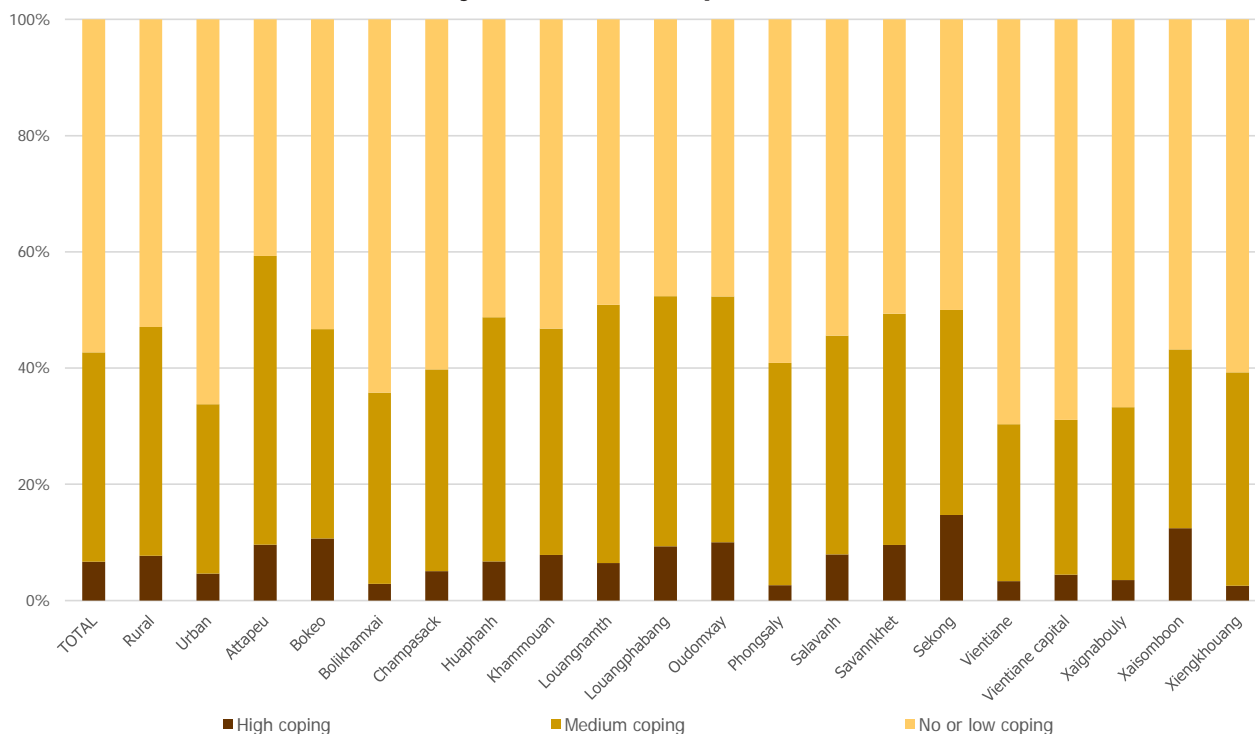
Importantly, large households (seven and more members) and those with four and more children aged 0–17 years appeared much more likely to resort to food-based coping strategies than smaller households.

Livelihood-based coping strategies

In addition to adjusting their food consumption patterns, households resorted to various livelihood-based coping strategies to cope with insufficient food access and availability, some of which may have a negative impact on their ability to generate income or respond to future shocks. According to the November 2022 data, a majority of households (59 percent) are using livelihood coping strategies, including spending household savings, borrowing money and reducing healthcare expenses. The reason

⁸ “Regularly” defined as using one or more of five separate food-based coping strategies at least four times in the past seven days.

Figure 16: Lao People’s Democratic Republic – Food-based coping by residence and province



Source: Authors’ own elaboration based on the data collected during the 2022 FAO/WFP Crop and Food Supply Assessment Mission (CFSAM) to the Lao People’s Democratic Republic by the World Food Programme (WFP) Lao People’s Democratic Republic, Remote food security monitoring system (mVAM), 2022.

Table 10: Lao People’s Democratic Republic – Food-based coping strategies according to background characteristics

	Ate less preferred food	Borrowed food	Limited portion sizes	Reduced adult consumption	Reduced number of meals
TOTAL	45.7	10.4	21.5	18.1	7.6
Rural	48.6	12.8	24.7	21.2	9.0
Urban	39.8	5.7	14.8	11.9	4.8
Sex_HoH: Female	45.3	10.0	21.2	20.1	10.0
Sex_HoH: Male	45.7	10.5	21.5	17.9	7.3
Edu_HoH: None	51.1	13.1	26.8	24.6	16.4
Edu_HoH: Primary	49.3	10.2	20.7	18.1	6.5
Edu_HoH: Secondary or higher	39.3	9.3	18.5	14.9	4.9
HH Size: 1 - 2	33.9	8.0	24.2	2.7	8.0
HH Size: 3 - 4	48.4	12.4	17.9	15.4	5.3
HH Size: 5 - 6	43.5	9.7	21.8	19.1	7.6
HH Size: > 7	48.7	9.8	24.7	24.2	10.4
Children (0-17): None	43.1	11.1	16.3	0.0	5.7
Children (0-17): 1	44.4	10.8	19.4	16.2	6.5
Children (0-17): 2-3	44.7	9.4	20.8	22.8	6.6
Children (0-17): 4+	55.8	12.5	36.3	33.7	16.7

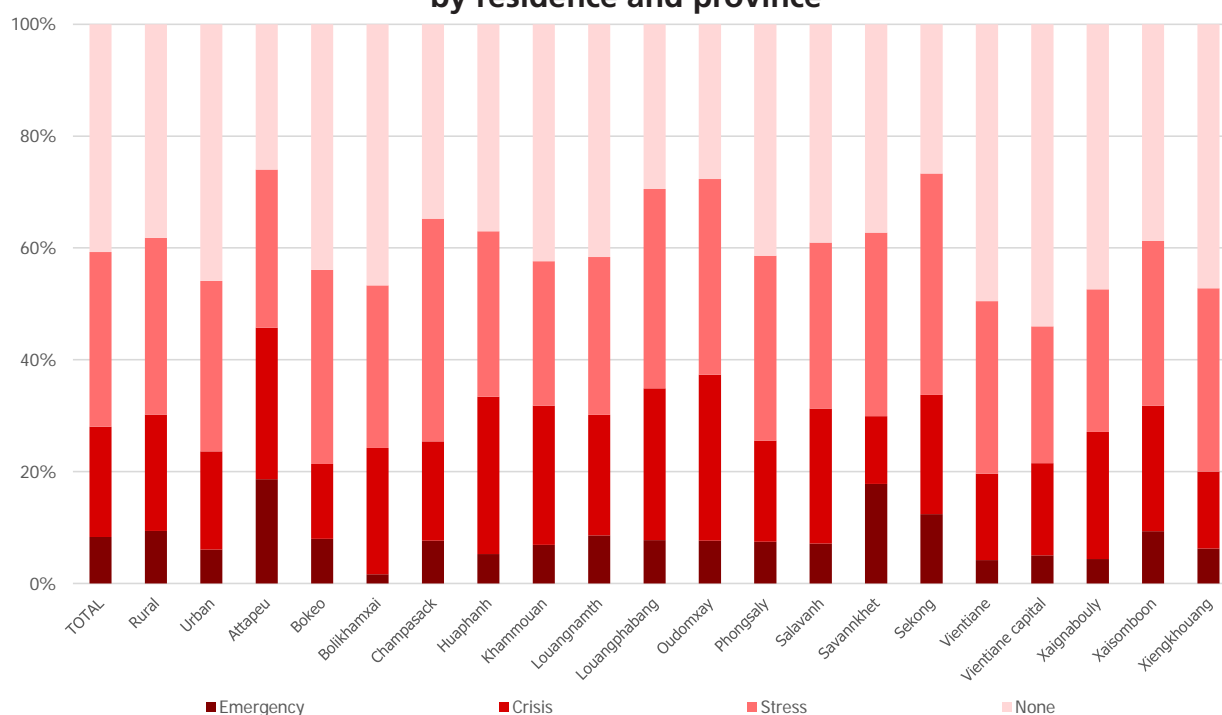
Source: Authors’ own elaboration based on the data collected during the 2022 FAO/WFP Crop and Food Supply Assessment Mission (CFSAM) to the Lao People’s Democratic Republic by the World Food Programme (WFP) Lao People’s Democratic Republic, Remote food security monitoring system (mVAM), 2022.

most commonly cited for resorting to these strategies was “to buy food” followed by “to cover health expenses” (34 and 11 percent, respectively).

A small but substantial subset of households (28 percent) reported applying crisis or emergency strategies, including selling productive assets (e.g. farming equipment or vehicles), reducing essential

healthcare expenses and sending school-aged children to work. Households with four and more children (41 percent), households reporting a significant decrease in income compared to the same month in 2021 (40 percent) and those whose main income source derived from the informal sector (39 percent) were the most likely to be resorting to these more severe forms of livelihood coping over the past 30 days.

Figure 17: Lao People’s Democratic Republic – Livelihood-based coping strategies by residence and province



Source: Authors’ own elaboration based on the data collected during the 2022 FAO/WFP Crop and Food Supply Assessment Mission (CFSAM) to the Lao People’s Democratic Republic by the World Food Programme (WFP) Lao People’s Democratic Republic, Remote food security monitoring system (mVAM), 2022.

Table 11: Lao People’s Democratic Republic – Livelihood-based coping strategies according to background characteristics

Strategy	Total	Urban	Rural	Regular	Informal	No Education	Secondary +
Sold HH assets	2.0	2.1	1.9	1.7	2.8	1.6	2.4
Spent savings	37.0	33.5	38.6	39.4	30.6	30.2	38.3
Purchase on credit	14.2	12.0	15.3	12.7	19.0	20.5	11.2
Borrow from formal lender	17.5	15.6	18.5	17.1	18.0	22.7	14.2
Sold productive assets	1.6	1.0	1.9	1.7	1.7	2.8	0.7
Reduced essential health expenses	15.4	13.9	16.2	13.3	21.4	16.4	14.5
Reduced education expenses	10.8	8.7	11.9	9.1	16.7	14.1	9.8
Children sent to work	6.2	3.7	7.4	5.2	9.7	10.5	2.9
Begged from strangers	1.1	0.5	1.4	1.0	1.7	2.8	0.8
Sold house or land	0.5	0.3	0.7	0.6	0.4	0.9	0.6

Source: Authors’ own elaboration based on the data collected during the 2022 FAO/WFP Crop and Food Supply Assessment Mission (CFSAM) to the Lao People’s Democratic Republic by the World Food Programme (WFP) Lao People’s Democratic Republic, Remote food security monitoring system (mVAM), 2022.

The types of livelihood-based coping strategies that households are applying depend on their livelihood profiles and underlying demographic characteristics (Figure 17). The most common strategy employed was spending of savings (37 percent) followed by borrowing from formal lenders (18 percent), (Table 11). However, households deriving their income primarily from the informal sector, as well as those headed by a member without formal education, were less likely to draw upon savings or more likely

to borrow/purchase on credit due, in large part, to their weaker financial situation.

Unless macroeconomic conditions improve, it is possible that households will begin resorting more and more to crisis and extreme livelihood coping strategies during the upcoming lean season with negative implications for food security and income-earning potential in the medium to longer term.

Factors constraining food availability

High costs/low availability of agricultural inputs

As noted above, the prices for seeds, fertilizers, pesticides, animal feed, vaccines/medicines have all increased in 2022 (more than doubling in some cases). In interviews with agriculture input traders during the mission, many reported steep declines in the amount of agricultural input sales to farmers compared to the previous year (especially in the north of the country). Similarly, the high cost of fuel has translated into logistical bottlenecks and higher transportation costs, leading to market disruptions and reduced food availability in some markets. Field visits confirmed that large price discrepancies for staples existed even between markets in neighbouring districts. High prices for inputs also encouraged some farmers to switch from paddy production to cash crops which serves to further constrain domestic production available for markets.

Destruction of farmland by natural hazards

During August 2022, flooding associated with tropical storms Mulan and Ma-om in Salavan, Oudomxay and Xayabouly provinces affected approximately 12 331 households. In addition to the impacts on agricultural land (landslides, erosion and sedimentation by rocks and sand), the flooding also destroyed critical agricultural infrastructure, including irrigation systems, resulting in losses to lowland rice production. Rains stopped early in the north which further reduced production of main (wet) season paddy in these areas. Similarly, Typhoon Noru affected agricultural activities in Champasack and Attapeu in the south in late September/early October.

Labour shortages

Discussions with farmers during the mission indicated that many were unable to plant/harvest more crops due to insufficient labour availability. Following the relaxation of COVID-19 travel restrictions, many migrant workers resumed their work abroad (primarily in Thailand) to fetch better wages.

Factors constraining food access

The combination of a depreciating national currency and rapid food and non-food inflation currently impacting the country is reducing purchasing power and contributing to the deterioration of household food security observed for some vulnerable households. Headline inflation reached 39.3 percent in December 2022 and food inflation surged to 45 percent during the same time.

High food prices

Prices of most food items are higher than the same time last year as a result of inflationary pressure. Reduced paddy production in the north and the south combined with higher fuel and transportation costs will continue to drive subnational price discrepancies. Many rural households have some protection from these higher prices given the relatively low level of market dependence during the harvest/post-harvest season. According to November 2022 data, while more than 80 percent of the urban households surveyed reported that their main source of food in the past week was purchases from the market, only 45 percent of the rural households reported the same (the majority reporting food from own production). However, poor households and those not engaged in agricultural production, e.g. those without access to land, are more susceptible to these high food prices (see also wage constraints below). Supporting this finding is the November 2022 data showing that, overall, while concerns over food prices have moderated somewhat since September, the proportion of non-agricultural households concerned over food prices has not eased as much.

Change in income/constrained wages

The November 2022 data reveal about one out of four households (27 percent) reported that their income had decreased compared to the same month last year. This finding is coherent with a context in which farmers are realizing reduced main (wet) season profits in 2022 owing to reduced paddy production figures (reported above) and higher input costs. Additionally, even while the price of food has nearly doubled in some cases, wages for daily labourers has not kept pace: the reported average

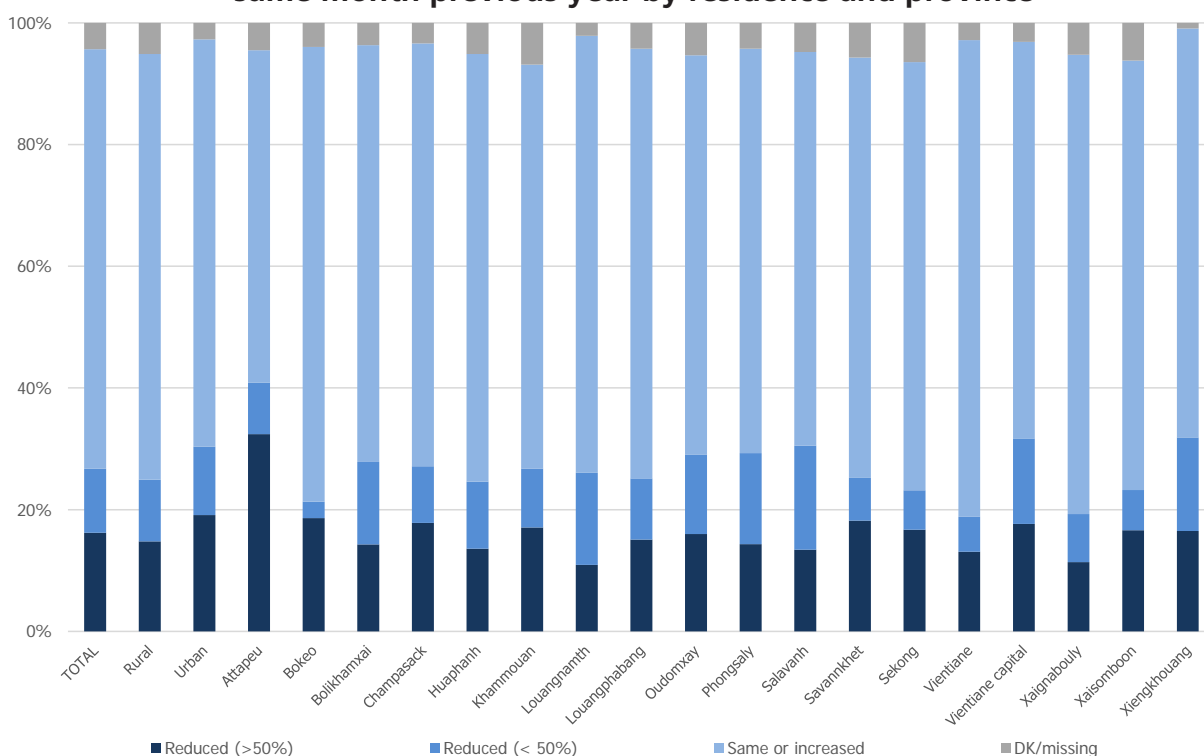
daily wage for agricultural workers in 2021 was approximately LAK 60 000, rising only 15 percent to approximately LAK 70 000 in 2022. Figure 18 presents the self-reported change in income compared to 2021 from the November 2022 data.

Constrained access to markets

The November 2022 survey also asked households about their access to markets. Overall, 25 percent

of the households reported having trouble accessing markets in the two weeks prior to the survey, reflecting a slight increase from September 2022 (21 percent). Rural households were more likely to report difficulties accessing markets than urban households (31 percent vs. 12 percent, respectively). The main reason provided by both urban and rural households was “lack of money” (45 and 61 percent, respectively).

Figure 18: Lao People’s Democratic Republic – Change in income compared to same month previous year by residence and province



Source: Authors’ own elaboration based on the data collected during the 2022 FAO/WFP Crop and Food Supply Assessment Mission (CFSAM) to the Lao People’s Democratic Republic by the World Food Programme (WFP) Lao People’s Democratic Republic, Remote food security monitoring system (mVAM), 2022.



RECOMMENDATIONS

In the short-term, the mission recommends to immediately scale up food and livelihood assistance support for households suffering from moderately or severely acute food insecurity. The 2023 main (wet) crops will be planted between May and July, and it is crucial to provide urgent support to farmers in order to strengthen domestic agricultural production, prioritizing the most vulnerable smallholder farmers in southern and northern provinces that experienced severe crop losses in 2022.

The following immediate actions are recommended:

Agriculture

- Support the 2023 cropping season by providing subsidized agricultural inputs, such as seeds and fertilizers, with priority given to farmers that had severe crop losses in 2022, particularly in northern and southern provinces.
- Scale up the domestic production of certified seeds and ensure the timely delivery of seeds to farmers by establishing seed distribution centres close to farming communities.
- Implement pre- and post-harvest measures to reduce losses of food crops and to strengthen the food value chain.
- Facilitate the rehabilitation and maintenance of irrigation infrastructure that has been damaged by floods during past years.
- Expand the irrigation system and water harvesting techniques for the cultivation of secondary (dry) season crops, in line with MAF's national strategic goals.
- Introduce new cropping patterns, promote diversification into cash crops and adapt to climate changes.
- Scale up training and technical support to promote the efficient use of organic and chemical fertilizers, including provision of guidance on land preparation techniques that enhance soil health and fertility.
- Strengthen the capacity of the Veterinary Vaccine Product Centre in order to meet national requirements. The decentralized veterinary services should be reinforced to guarantee that vaccination campaigns are effective.
- Promote production of animal feed, by encouraging the cultivation of crops, such as maize and legumes and to improve pastures.
- Promote measures to add value to exportable agricultural commodities, including livestock and cash crops.
- Implement measures to strengthen the capacity of the Plant Protection Centre and agricultural extension services to identify and treat pests, and to provide technical assistance to farmers.



Food security

- The government and its partners should provide coordinated support for 1.1 million people estimated to be moderately or severely food insecure through existing social assistance mechanisms and expanded food assistance and livelihood programmes for the most vulnerable. Support should be prioritized for rural households, particularly in northern and southern areas that were affected in 2022 by climate shocks, and for households that have been unable to cultivate crops during the main (wet) and secondary (dry) seasons due to land access issues.
- Considering that one-third of children in the country are stunted, food assistance and livelihood programmes should be complemented by investments to improve access to child health and nutrition services, promotion and counselling on adequate child feeding practices, both breastfeeding and complementary feeding practices, and to water, sanitation and hygiene (WASH) interventions to prevent the deterioration of the nutrition situation for women and children.
- The government is advised to continue to protect access to nutritious food for school-aged children through prioritizing support to the school meal programme.
- The government and partners are encouraged to consider and prioritize anticipatory actions, including livelihood support to smallholder farmers, especially those that rely on upland paddy cultivation, and daily wage labourers, and implement measures to boost resilience that are likely to i) reduce food assistance needs during the 2023 lean season period and ii) reduce the adoption of negative livelihood coping behaviours.
- The government and partners could consider an informal activation of the Food Security Cluster, similar to the establishment of the Health Sector Working Group during the COVID-19 pandemic, to support coordination efforts, to identify service capacities and gaps and to undergo anticipatory action planning.
- The government and partners are strongly encouraged to continue supporting a food security monitoring system to track the situation as the global food and fuel crisis continues into 2023.
- In the medium-term, government and partners should continue to strengthen investments in sustainable and diverse food systems, nutrition-sensitive and shock-responsive social protection systems, impact-based forecasting and early warning early action for climate hazards. These investments should consider the intersection of emerging shock responsive social protection mechanisms and financial inclusion.
- Given recent developments by the Ministry of Agriculture and Forestry in developing the building blocks of a National Social Protection Registry, the ministry is encouraged to facilitate access to such a registry for government and development partners to support improved targeting for food assistance interventions and enabling shock-responsive social protection.

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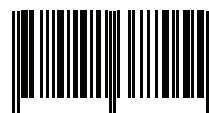
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