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Food Security UPDATE

Update April 20, 2023

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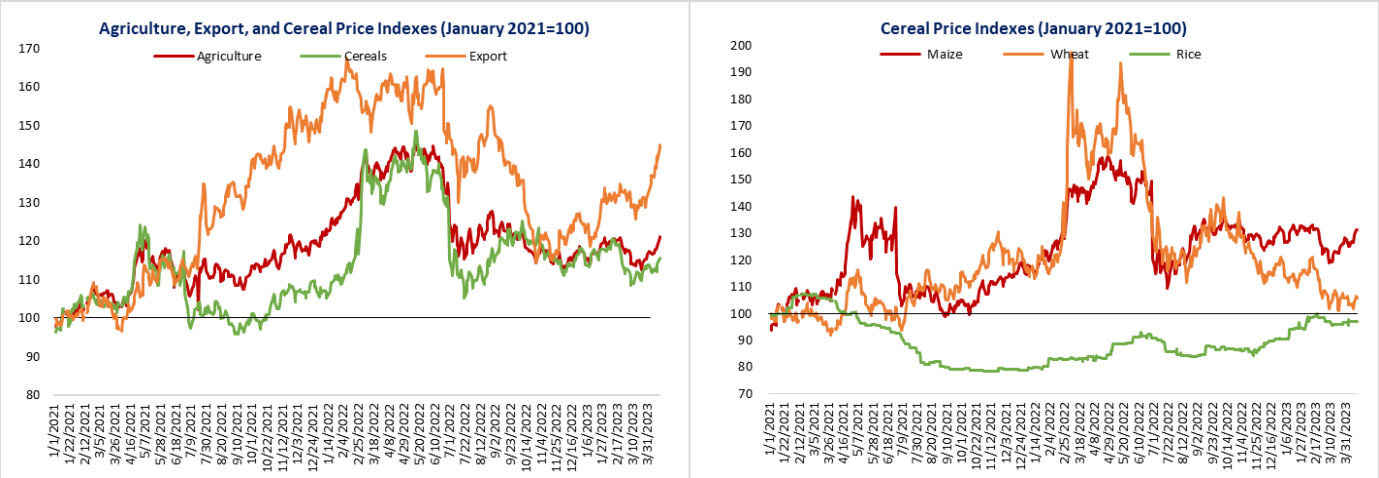
AT A GLANCE

- Since the last update on April 06, 2023, the agricultural, cereal, and export price indices closed 3 percent, 2 percent, and 8 percent higher respectively
- Domestic food price inflation remains high in almost all low-, middle-, and high-income countries.
- The Food and Agriculture Organization of the United Nations (FAO) benchmark index of international food commodity prices declined for the 12th consecutive month in March 2023—2.1 percent lower than in February 2023
- A recent blog from the International Food Policy Research Institute (IFPRI) discusses developments in biofuel production, provides arguments for and against the policies that support and promote it, and considers alternative mechanisms that could mitigate the impacts of such policies on food prices.
- A World Bank blog outlines a machine-learning method developed to track food prices in real time.
- The El Niño weather pattern could exacerbate the impacts of recent extreme weather events.

GLOBAL MARKET OUTLOOK (AS OF APRIL 18, 2023)

Trends in Global Agricultural Commodity Prices

Figure 1: Agricultural and Cereal Price Trends (Nominal Indexes)



Source: World Bank commodity price data.

Note: Daily prices from January 1, 2021, to April 18, 2023. The export index includes cocoa, coffee, and cotton; the cereal index includes rice, wheat, and maize.

The agricultural, cereal, and export price indices closed 3 percent, 2 percent and, 8 percent higher respectively compared to two weeks ago. The increase in export price index was driven by a rise in coffee prices which increased by 11 percent. Among the cereals, maize prices closed 4 percent higher, wheat prices closed 1 percent lower, while rice prices closed at the same level compared to two weeks ago. On a year-on-year basis, maize and wheat prices are 14 percent and 36 percent lower, respectively, while rice prices are 16 percent higher. Compared to January 2021, maize and wheat prices are 31 percent and 6 percent higher respectively, while rice prices are 4 percent lower (Figure 1).

Food Price Inflation Dashboard

Domestic food price inflation (measured as year-on-year change in the food component of a country's Consumer Price Index (CPI)) remains high. (See the dashboard in Annex A.) Information from the latest month between December 2022 and March 2023 for which food price inflation data are available shows high inflation in almost all low- and middle-income countries, with inflation levels greater than 5 percent in 70.6 percent of low-income countries, 90.9 percent of lower-middle-income countries, and 87.0 percent of upper-middle-income countries and many experiencing double-digit inflation. In addition, 84.2 percent of high-income countries are experiencing high food price inflation. The most-affected countries are in Africa, North America, Latin America, South Asia, Europe, and Central Asia (Figure 2a). In real terms, food price inflation exceeded overall inflation (measured as year-on-year change in the overall CPI) in 86.5 percent of the 163 countries for which food CPI and overall CPI indexes are both available (Figure 2b). This week's 10 countries with the highest food price inflation, in nominal and real terms, are listed in Table 1 (using the latest month for which data are available between December 2022 and March 2023).

Figure 2a: Food Inflation Heat Map

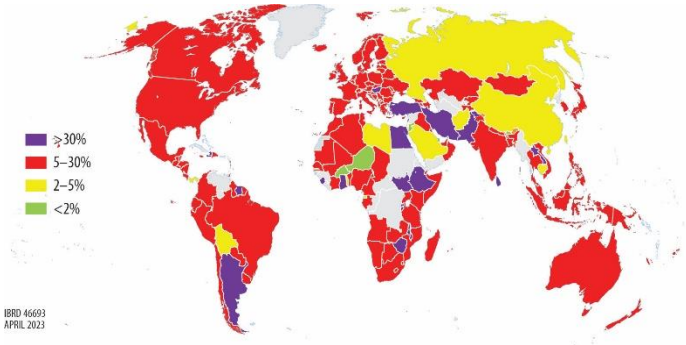
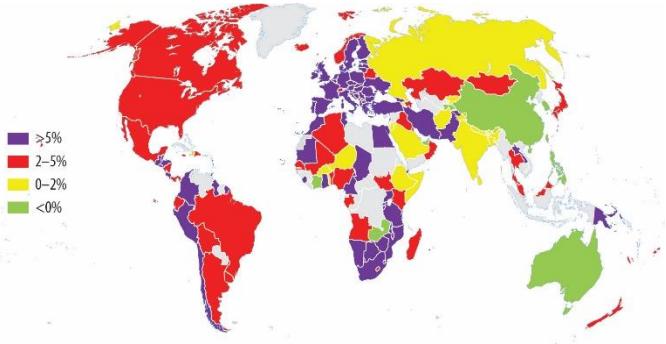


Figure 2b: Real Food Inflation Heat Map



Source: International Monetary Fund, Haver Analytics, and Trading Economics.

Note: Food inflation for each country is based on the latest month from December 2022 to March 2023 for which the food component of the Consumer Price Index (CPI) and overall CPI data are available. Real food inflation is defined as food inflation minus overall inflation.

Table 1: Food Price Inflation: Top 10 List

Country	Nominal food inflation (%YoY)	Country	Real food inflation (%YoY)
Lebanon	261	Lebanon	71
Zimbabwe	128	Zimbabwe	40
Argentina	107	Rwanda	32
Iran, Islamic Republic of	73	Egypt	30
Türkiye	67	Iran, Islamic Republic of	20
Egypt	63	Uganda	18
Rwanda	63	Hungary	18
Suriname	59	Türkiye	17
Lao People's Democratic Republic	51	Burundi	16
Ghana	51	Germany	15

Source: International Monetary Fund, Haver Analytics, and Trading Economics.

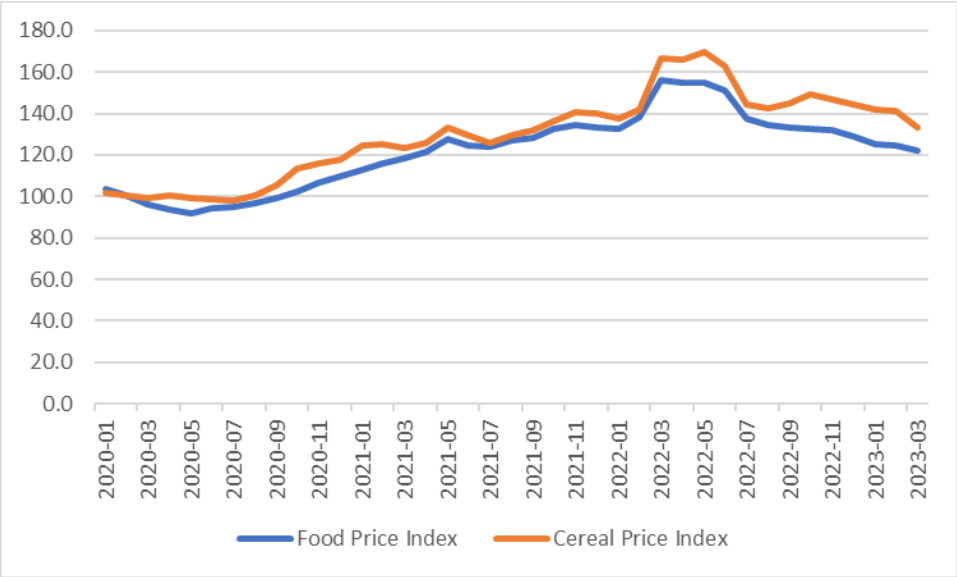
Note: Food inflation for each country is based on the latest month from December 2022 to March 2023 for which the food component of the Consumer Price Index (CPI) and overall CPI data are available. Real food inflation is defined as food inflation minus overall inflation.

EMERGING ISSUES

FAO Food Price Index Marks 12th Consecutive Monthly Decrease

According to a recent report from the FAO, the benchmark index of international food commodity prices declined for the 12th consecutive month in March 2023. The FAO Food Price Index averaged 126.9 points in March 2023—2.1 percent lower than in February 2023 and 20.5 percent lower than its peak in March 2022 (Figure 3). The index, which tracks monthly changes in international commodity prices, indicated that a combination of factors, including ample supplies, subdued import demand, and extension of the Black Sea Grain Initiative, contributed to the decrease.

Figure 3: Food and Agriculture Organization Food and Cereal Price Indexes



Source: Food and Agriculture Organization Food Price Index.

The FAO Cereal Price Index is 5.6 percent lower than in February 2023, with international wheat prices experiencing the sharpest decrease, dropping 7.1 percent, driven by ample global supplies and strong competition among exporters. Higher estimates for Australia's production, along with better crop conditions in the European Union in April 2023, boosted the global supply outlook further. International rice prices declined by 3.2 percent in March, influenced by ongoing or imminent harvests in major exporting countries, including India, Thailand, and Vietnam. World barley and sorghum prices declined by 6.7 percent and 5.7 percent, respectively, influenced by spillover from weakness in international maize and wheat markets. World maize prices also fell, by 4.6 percent, in March, pressured by seasonal availability from harvests in South America, expectations of record output in Brazil, and extension of the Black Sea Grain Initiative.

According to FAO's most recent Cereal Supply and Demand Brief, it has revised its projection for world cereal production in 2022 upward to 2,777 million tonnes, albeit still 1.2 percent lower than in 2021. The forecast for world cereal consumption in 2022/23 is 2,779 million tonnes, a decrease of 1.0 million tonnes since February, indicating a decline of 0.7 percent from 2021/22. Lower anticipated feed use of maize and minor adjustments made for several importing countries because of smaller expected imports are the main drivers behind this month's 1.5-million-tonne downward revision to global coarse grain consumption.

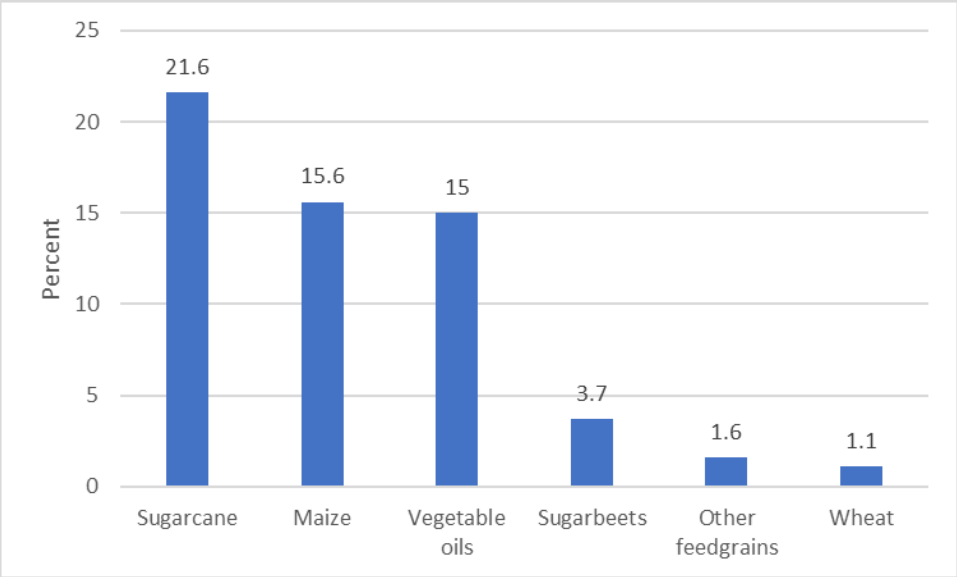
IFPRI Blog Examines Biofuel Policies in Relation to Current Food Crisis

During the food price spikes of 2007/08, 2010/11, and 2012/13, policies that boost biofuel production and use, such as crop subsidies, mandates, and other measures, came under intense scrutiny. Critics suggest that increasing production of biofuels is a major factor in high global food prices. In the context of the price spikes in the wake of

Russia's February 2022 invasion of Ukraine, a recent blog post from IFPRI discusses recent developments in biofuel production and arguments for and against the policies that support and promote it, and considers alternative mechanisms that could mitigate the impacts of such policies on food prices.

Global ethanol consumption has grown steadily since 2006, totaling 126 billion liters in 2021. About 59 percent of ethanol is produced from maize; 22 percent from sugarcane; 2 percent from molasses; 2 percent from wheat; and the rest from other grains, cassava, and sugar beets. Biodiesel consumption has increased steadily over the past 15 years, at an annual rate of almost 15 percent per year, with approximately 73 percent of biodiesel based on vegetable oils and 21 percent on used cooking oils. To the extent that production is diverted to biofuels, less is available for food or feed purposes. Almost 22 percent of sugarcane production and 16 percent of maize production is used for ethanol production, with 15 percent of vegetable oil production going into biodiesel production (Figure 4). Wheat and other feed grains account for less than 2 percent of total biofuel production.

Figure 4: Percentage of Global Production Used for Biofuel Production, 2019-2021



Source: IFPRI

Although there are clear benefits of biofuel policies, including increasing supplies of transportation fuels, enhanced energy security, and benefits for producers in the form of higher farm prices and income, the blog highlights the significant costs that governments must absorb in various forms of support or consumers must absorb in higher fuel costs. In addition, the degree to which biofuels reduce greenhouse gas emissions is controversial, with recent research concluding that the carbon intensity of maize-based ethanol in the United States is no less than that of gasoline and probably "at least 24 percent higher." Moreover, when indirect land use change is considered (e.g., deforestation) greenhouse gas emissions for palm- and soy-based biodiesel may also be substantial.

The blog suggests that biofuel policy mandates can create economic distortions during times of food price shocks by hindering a market-stabilizing response that would divert supplies from fuel to food use. In addition, when biofuel mandates increase domestic food prices, countries may try to reduce the impact of further price increases by imposing export restrictions, which further increase global market prices. To mitigate the effects of these policies, countries can implement triggers that would suspend these mandates when food prices are high, or stocks-to-use ratios are low and can reverse them when prices begin to decline. For example, in 2022, the European Union responded to the decrease in sunflower oil imports from Ukraine by reducing biofuel production from traditional feedstocks.

The blog suggests that, despite criticism expressed during previous price spikes, biofuel policies will continue to increase in popularity. Given ongoing concerns regarding the war in Ukraine, the blog suggests that it is important to verify the contribution of biofuels to mitigation of climate change and develop greater flexibility when markets are tight, and prices are high. In addition, development of waste products and crop residues as feedstock for biofuels would allow for all the benefits associated with biofuel mandates without increasing competition for food use. Although this is technically feasible, such feedstocks remain costlier than food crops, and more research must be conducted to increase commercialization of waste and crop residue.

Using Machine-Learning Methods to Estimate Food Prices in Crisis Situations

Governments, humanitarian actors, and other development organizations track inflation rates to identify trends and inform their support to affected households, especially those in crisis-affected areas, but in many settings of fragility, conflict, and violence, detailed price data cannot be regularly collected. Lack of information on periods and locations of high price instability makes it difficult to assess price movements accurately and formulate appropriate interventions. In addition, monitoring food price inflation is a major challenge because, although prices of individual foodstuffs may rise dramatically, inflation reflects an increase in the general price level of a broad range of goods in addition to food items. In crisis situations, monitoring even a small basket of key staples can be difficult if not impossible.

A World Bank blog outlines a machine-learning method developed to track food prices in real time that uses an innovative approach by constructing multiple machine-learning models for different prices of food items and predicting missing data based on available prices. The method uses surveys from nearby markets and prices of related commodities to estimate unobserved or incomplete local market prices, filling in gaps in area-specific price data for a basket of commodities.

The blog finds that the machine-learning models have high predictive accuracy, with robust results across a wide range of missing data settings, although prediction performance deteriorates when price volatility increases. The results are presented as a dataset that covers the prices of 43 food items in more than 1,200 markets in 25 countries and provides new insights into significant inflation events, including the world food price crisis of 2007/08 and the surge in inflation following the COVID-19 pandemic. The blog also compares predicted price data with observed data and demonstrates that imputations using the machine-learning approach are often almost as accurate as direct measurement of prices. On average, the approach captured 85 percent of observed price variation across 25 fragile

countries, even when 60 percent to 80 percent of survey data were missing. The results accurately captured all major price trends across a variety of settings of fragility, conflict, and violence, showing that, even with limited ground truth data (where the food price data is complete and the true inflation of a basket of food items is fully known), accurate inflation tracking is possible.

The blog offers critical insights for decision makers in low-income and data-poor regions. Local estimates overcome certain limitations of the traditional CPI, because national CPIs are calculated using prices in major urban markets and may not reflect inflation in rural zones. The World Bank-machine learning–driven price monitor will be extended to cover prices of nonfood items, which could reduce the cost of gathering new macroeconomic information in data-limited countries.

El Niño Likely to Increase Global Average Temperatures and Alter Rainfall Patterns

The National Oceanic and Atmospheric Association (NOAA) Climate Prediction Center has issued an El Niño Watch as part of its April 2023 El Niño Southern Oscillation (ENSO) Outlook. The watch was issued in response to favorable conditions in the development of El Niño within the next six months. Currently, the world is still in an ENSO-neutral phase, in which neither El Niño nor La Nina is present. However, NOAA indicates that there is a 62 percent chance El Niño will develop sometime between May and July, and more than an 80 percent chance of El Niño developing by the fall. The likely return of an El Niño weather phenomenon, exacerbated by global climate change, could increase the odds of record-breaking average global temperatures in 2023 or 2024, according to a recent blog by the National Oceanic and Atmospheric Association (NOAA).

In addition to temperature impacts, the development of El Niño will also alter global precipitation patterns. According the GEOGLAM Crop Monitor for AMIS, should El Niño materialize, average to above-average rainfalls could occur in Central Asia, southern North America, south-eastern South America, southern Europe, eastern East Africa, and southern and eastern China. Average to drier-than-average conditions could occur in Central America, the Caribbean, northern South America, Southern Africa, the Maritime Continent, and Australia.

The El Niño weather pattern could exacerbate the impacts of recent extreme weather events. In a recent report, The European Commission's Copernicus Climate Change Service highlighted that in 2022, Europe experienced its hottest summer on record, with drought heavily impacting agricultural yields. The combination of heat and low rainfall affected more than a third of the continent, lowering the flows of almost two-thirds of Europe's rivers, and reducing surface soil moisture to the second lowest level experienced in Europe in the last 50 years. Without global warming, extreme climatic events such as the 2022 record northern hemisphere drought would be expected to occur only once every four centuries. As such, experts are increasingly calling for increased investment in climate adaptation and mitigation to reduce the impacts of extreme weather patterns on global agriculture and food security.

REGIONAL UPDATES

East and Southern Africa

Fertilizer prices are high, and use is low in East and southern African countries. Globally, limited supply and high prices have decreased demand for fertilizer, which has caused prices to decline from their peak in early 2022, although they remain historically high. Before the Russian invasion of Ukraine, fertilizer application rates were low in sub-Saharan Africa, with an average of 22 kilograms per hectare, compared with the world average of 146 kilograms per hectare. About 90 percent of fertilizers used in sub-Saharan Africa are imported. In Africa, removing what little fertilizer is traditionally applied decreases crop production, resulting in food shortfalls that are compounded by drought (see the section below on climate). There is an immediate challenge because farmers are unable to afford fertilizer because the cost in most local currencies has increased dramatically, which increases the likelihood of reductions in food crop production. In the long term, the tight fiscal situation, exacerbated by deepening foreign debt and the accumulated import cost of food, energy, and fertilizers, is a challenge. Governments face difficulties providing the support that consumers and farmers need, and it is critical that these costs fall quickly and stay low in the long term. Policy actions on food and fertilizers have surged, including export taxes and bans. There have been some positive developments regarding fertilizer production plans and innovative fertilizer support programs in Kenya, Tanzania, and Zambia. More African governments, including Kenya's and Tanzania's, are seeking investments to establish their own fertilizer production, and blending facilities. Access to foreign currency is a challenge. Still, larger multinationals have found creative ways around the problem by importing into one country and shipping to others in the region.

Several East and southern African countries have increased actions to get fertilizers to farmers; however, little is done to get farmers organic fertilizers, which do not increase soil acidity. Governments, including in Kenya, Malawi, Rwanda, Tanzania, and Zambia, increased support (at a fiscal cost). Tanzania imports approximately 750,000 tonnes of fertilizer, approximately 550,000 tonnes of which is used in the country and 200,000 tonnes is exported to landlocked countries. Tanzania imports 70 percent to 90 percent of its fertilizer. In 2020, Tanzania imported 13 percent of fertilizers from Russia and 11 percent from Ukraine. The fertilizers were applied to an estimated 2.8 million hectares, or 20.2 percent of the planted area. Of this planted area using fertilizers, 60.4 percent was synthetic, and 39.6 percent was organic. The government of Tanzania introduced a temporary fertilizer subsidy program in July 2022 of 150 billion shillings that uses a digital platform to register farmers and facilitate access to subsidized fertilizer at approximately half the market price). The program has reached 2.9 million registered farmers. The target is to reach 5 million to 7 million this season. Farmer registration on the digital platform is the only subsidy access criterion. The subsidy program has significantly reduced fertilizer prices; by March 2023, the price for DAP 70,000 shillings was 37 percent lower than the market price of 111,251 shillings in August 2022. Kenya requires 700,000 tonnes of fertilizer per year, almost all of which is imported. For the current long rain season, fertilizer availability is satisfactory, with stable, but very high, retail prices. Nearly 100,000 farmers have accessed e-vouchers this season. In Zambia, approximately 800,000 tonnes (50 percent) of fertilizers are imported, creating price concerns during the peak season (September/October), which has led to the government to delay the reform

process of the Farmer Input Support Program and revert to the traditional approach of physical distribution of input (fertilizers and maize seeds) vouchers to smallholder farmers. The cost of inputs was 80 percent higher than at the same time in 2022 and is subsidized; farmers pay only 12 percent of the price. Half of the fertilizer used in Zambia is through the Farmer Input Support Program, with the private sector mainly supplying the other 50 percent. The government of Ethiopia has partnered with Morocco's Office Chérifien des Phosphates to build a fertilizer plant, taking advantage of significant potassium and limestone deposits available for commercial exploitation, although no fertilizers are produced in Ethiopia, with demand met through imports. All fertilizer imports are procured through a single tender that the government agency Ethiopian Agricultural Business Corporation issues. Government policy on intervening in the fertilizer markets is anchored in these centrally planned imports to take advantage of economies of scale in bulk procurement and ultimately lower farmers' fertilizer cost. Import planning begins with assessing fertilizer demand through a bottom-up approach, with extension agents collecting demand data directly from farmers. Once the imports arrive in the country, they are distributed through the government cooperative structure according to estimated demand.

East Asia and the Pacific

Governments in East Asia and the Pacific are introducing a range of measures to address country-specific challenges to food security such as inflation and drought. Inflation in Lao People's Democratic Republic dropped slightly—from 41.3 percent in February 2023 to 42.0 percent in March 2023, according to the Lao Statistics Bureau. Prices for food and nonalcoholic beverages were 51 percent higher in March 2023 than in March 2022, and prices for medical care and medicines were 41.8 percent higher (Vientiane Times, April 6, 2023). Considering higher demand with the approaching Lao New Year holiday, the government has ordered relevant sectors to ensure sufficiency of food and other goods. Authorities are keeping prices under check at local markets to minimize the impact on the poorest people. To manage inflation, especially in the face of depreciation of the kip, the government is focusing on boosting domestic production, decreasing imports, and encouraging investment in areas that could bring revenue into the country (Vientiane Times, April 3 and 6, 2023). Meanwhile, farmers in many areas of the country, such as Bolikhamxay, Oudomxay, and Savannakhet, have reported insufficient water, which is affecting dry-season crops. According to local officials, drought has destroyed dry-season rice crops in Champhone, Nong, and Xonnabouly districts (Vientiane Times, April 3, 2023; March 23, 2023; Laotian Times, March 31, 2023). District officials have been pumping water from nearby wetlands and waterways to reservoirs and delivering it to agricultural land as a temporary solution to the problem. In Indonesia, food inflation had moderated in annual terms—from 7.2 percent in February 2023 to 5.7 percent in March 2023—but increased slightly from 0.28 percent to 0.29 percent month to month. Rice prices have begun to decline at the farm level (7.6 percent for dry harvested paddy, 6.0 percent for dry milled paddy) and at the rice milling stage (1.3 percent) as the country entered its main harvest season, although wholesale and retail prices for rice in March increased slightly (0.43 percent and 0.70 percent, respectively, month to month). Rice mill, wholesale, and retail prices are 19.1 percent, 15.1 percent, and 11.4 percent higher, respectively, than at the same time last year. To manage food prices ahead of the upcoming Eid al-Fitr holidays, the National Food Agency, in collaboration with local governments and the state-owned food enterprises Bulog and ID Food, is organizing affordable food markets, which is expected to involve the sale of basic food commodities at prices not exceeding the government-stipulated retail ceiling price. As of April 15, 2023, 410 affordable food

markets had been organized across 108 districts and municipalities in 26 provinces. The National Food Agency has requested that all 514 district and municipal governments in Indonesia organize affordable food markets and announced that it will accelerate procurement of 12 strategic commodities from farmers through state-owned food enterprises to supply government food reserves. The targeted stock levels correspond to 5 percent to 10 percent of domestic demand. The Ministry of Finance issued a regulation on March 24, 2023, to enable state-owned food enterprises to access subsidized credit through state-owned banks to finance procurements for the government food reserves. The initial credit ceiling provided to Bulog and ID Food is 3 trillion kip (US$204 million).

The Myanmar State Administration Council has implemented strict trade inspections and introduced several provisions related to trade. Stricter product inspections at the Myanmar-China border are causing difficulties for traders in Myanmar. Since the beginning of March 2023, the State Administration Council has implemented rigorous checks, imposed fines, and confiscated imported goods from China entering Myanmar through the Kyin San Kyawt gate in Muse (Shan State). Traders report that the strict checks are causing delays and that fines and seizures of goods have brought some import operations to a halt. Meanwhile, the Ministry of Commerce notified all exporters via its export/import newsletter 6/2023 dated March 22, 2023, that licenses would be mandatory for all exports from Myanmar as of April 1, 2023. Imports to customs warehouses will also require import licenses before the ship arrives in port. Separately, the Ministry of Agriculture, Livestock, and Irrigation has banned fishing and export of marine products during the fish spawning season between April 1 and June 30, 2023, to protect fisheries from being overfished.

Europe and Central Asia

The global food crisis and subsequent high inflation, declining remittance inflows, and growing poverty levels continue to undermine households' resilience as they resort to food- and asset-depletion coping strategies. In Kyrgyz Republic, according to the latest mobile vulnerability survey that the World Food Programme (WFP) conducted in March 2023, 12 percent of the country's population is acutely food insecure, and 53 percent is marginally food secure. The highest levels of food insecurity were found in Talas (34 percent), Osh (19 percent), and Batken provinces (15 percent). For food and nonfood items, the key factor hindering purchases was lack of money and high food prices.

On April 5, 2023, the European Commission responded to the European Citizens' Initiative "Save bees and farmers! Towards a bee-friendly agriculture for a healthy environment." The commission welcomes the initiative and acknowledges its importance, because the interlinked crises of climate change, pollution, and biodiversity loss constitute growing challenges for Europe's agricultural and food security. In the European Union, one-third of bee, butterfly, and hoverfly species are in decline, and 80 percent of crop and wild flowering plant species depend on animal pollination. Half of agricultural land in the European Union already runs the risk of a pollination deficit. The threat to the existence of pollinators is a threat to food security and to life on the planet. The success of the citizens' initiative is a clear sign of public support for action in favor of pollinators, biodiversity, and sustainable farming. In this context, the commission is calling on the European Parliament and European Council to reach swift agreement on already-submitted legislative proposals that will help protect and restore pollinators and translate citizens' efforts into law.

Latin America and the Caribbean

According to FAO's most recent Food Price Monitoring and Analysis report (March 10, 2023), moderate domestic price warnings are flagged for wheat flour in Argentina (prices were at new record highs in January 2023) and white maize in Mexico (prices remained well above their values one year earlier in Puebla).

Save the Children reports that almost half of Haiti's children are facing acute hunger, with violence, climate stress and soaring inflation all exacerbating the situation since a devastating earthquake struck the Caribbean Island nation 18 months ago. The latest Integrated Food Security Phase Classification (IPC) figures show that 4.9 million people – nearly half the population—including 1.9 million children, are classified as acutely food insecure. According to an updated analysis conducted in March 2023, this is a slight increase over the already high projection of 4.7 million estimated in the September 2022 analysis, confirming that acute food insecurity remains extremely troubling in Haiti. Of the 4.9 million people, 1.8 million are estimated to be in Emergency (IPC Phase 4), up from 1.7 million in the September 2022 analysis. The number of people in Crisis (IPC Phase 3) has also increased slightly, from 3.04 million to 3.08 million.

A new study published in the journal Nature Water employs quantitative methods to assess the effects of climate-driven food insecurity on conflict. According to the findings, reductions in food production in rural areas of Central America significantly increased food insecurity in adjacent urban areas because of the critical role of food trade. The study establishes a correlation between droughts, food accessibility and availability, and urban conflict in the Central American Dry Corridor, an ecological zone stretching from southern Mexico to Panama and encompassing El Salvador, Guatemala, Honduras, and Nicaragua, from 1996 to 2016.

Middle East and North Africa

In Lebanon, the economic situation is continuing to deteriorate fast, with the Lebanese pound now fluctuating around 100,000 LBP/US$, a 98 percent loss in value since the onset of the crisis in late 2019. According to WFP, food inflation contributed 40 percent to the monthly CPI increase in January 2023. As the economic crisis continues to worsen and food prices increase, food insecurity is expected to affect 1.46 million Lebanese and 800,000 Syrian refugees (42 percent of the total population) by April 2023 (WFP). The European Commission announced that EUR 60 million will be made available in 2023 as humanitarian aid (i.e., food assistance, cash support, education, and health services) for the most vulnerable populations in Lebanon (both Lebanese nationals and refugees). The package will also help prepare for disasters and provide emergency response. In Morocco, inflationary pressures increased in the first quarter of 2023, with consumer prices rising by 9.4 percent versus 8.3 percent in the previous quarter and 4 percent a year earlier. This was due mainly to food prices, which experienced a historic increase of 18.2 percent, while non-food prices grew by 3.5 percent. The continuing rainfall deficit and the increase in production costs (seeds, animal feed, etc.) have particularly affected the production of fresh vegetables, meats, and oils, which experienced some of the highest price hikes in Morocco. Some improvements in rainfall are expected in 2023, but this remains below historic average. As of March 30, 2023, the cumulative rainfall is up 15.6 percent compared to the previous campaign, but 17.3 percent less compared to the last five years average. The dam filling rate is low, at 34.3 percent on April 7, 2023, against 33.9 percent in 2022 and 50.9 percent in 2021. The low rainfall,

combined with unavailability and high cost of nitrogen fertilizers, will limit the recovery of agricultural production, and will likely have a negative impact on overall economic growth in Morocco. However, some improvement in cereal production is expected in 2023 versus 2022; after a 15 percent decline in 2022, cereal production is forecast to grow by 1.6 percent in 2023 and, even more, by 6.9 percent in 2024.

South Asia

In Afghanistan, continued support for critical humanitarian operations is required to prevent further deterioration of the food security situation. With severe hunger affecting nearly 20 million Afghans—6 million of them one step away from famine—the basic needs of the most vulnerable people must be prioritized, but funding shortfalls have forced the WFP to reduce its lifesaving assistance to 4 million Afghans as they emerge from another freezing winter and are battling one crisis after another. Climate change remains the biggest driver of poverty and food insecurity in Afghanistan. Given that climate change will exacerbate the frequency and severity of droughts, investments in resilience and shock-responsive social protection are vital to supplement urgent humanitarian assistance.

In Bangladesh, the WFP reports that food inflation was 8.1 percent in February 2022 from January 2022, which represents a 33 percent year-on-year increase in food prices. A survey that the U.S. Agency for International Development funded found that high prices had spread to most essential food commodities by February 2023, reducing the purchasing power of poor consumers and increasing their expenditures on food. There were 1.9 million tonnes (1.5 million tonnes of rice, 0.38 million tonnes of wheat) in national food grain stocks in March 2023, which is 4 percent lower than in March 2022. By March, Bangladesh had imported 1,020 tonnes of rice and 1,996 tonnes of wheat in 2023, of which the private sector procured 41 percent and 71 percent, respectively. The target for the public food distribution system is approximately 3 million tonnes of food grains in fiscal year 2023. According to the WFP Remote Household Food Security Survey, high food prices were the main driver of the reported increase in moderate food insecurity (23 percent) and deficiency in iron-rich foods intake (10 percent) for low-income households. In Pakistan, the WFP Market Monitor Report reported year-on-year CPI food inflation of 43 percent in January 2023, with wide variation between individual commodities, such as onions, wheat flour, and bananas. Food prices have increased for 11 consecutive months, eroding the purchasing power of households by as much as 38 percent. The WFP's most recent assessment is that the floods of last year are affecting 33 million people, 14.6 million of whom require emergency food assistance. Malnutrition rates in children have reached critical rates and are greater than 30 percent in Sindh and 40 percent in Balochistan.

West and Central Africa

All Sahelian countries had greater cereal production in 2022/23 than the 5-year average, except for Chad, where production decreased by 1 percent. At the Regional System for Food Crisis Prevention and Management meeting held in March 2023, it was estimated that final cereal production in the Sahel and West Africa for the 2022/23 season was 77 million tons—8 percent more than the previous season and 6 percent more than the average of the previous 5 years (FEWS NET 2020).

Current conditions for livestock are generally satisfactory, thanks to sufficient availability of fodder and water resources, with a few exceptions in Chad, Mali, Niger, and Nigeria. In Niger, forage production was low in the pastoral zone because of rainfall shortages at the end of August and during September. In addition, persistent insecurity in the regions of Lake Chad (on the border of Chad, Cameroon, Niger, and Nigeria), Liptako-Gourma (on the border of Burkina Faso, Mali, and Niger), the far north of Cameroon, northwestern Nigeria, and the Tibesti region of Chad makes certain pastoral areas inaccessible to herders, which could lead to early degradation of resources in areas where herds are concentrated, particularly along the Niger River in Mali and in the southern areas of Niger (FEWS NET 2023).

Largely favorable seasonal forecasts indicate that precipitation during the 2023/24 agricultural season across West Africa is likely to be average or above average. In the Gulf of Guinea countries, the rainy season started at the end of February and beginning of March. Low rainfall has been observed in some areas of Cameroon and Nigeria. The forecast for 2023 that AGRRYMET (a specialized agency of the Permanent Interstate Committee for Drought Control in the Sahel, the African Centre of Meteorological Applications for Development, and national meteorological services of the Gulf of Guinea countries) prepared indicates that rainfall is expected to be generally average from March to June. The forecast also suggests a normal start, a normal to late end, average to short dry sequences, and generally average to surplus runoff in the coastal basins. For the Sahelian countries, the U.S. National Oceanic and Atmospheric Administration predicts normal to above-normal rainfall over the same period (FEWS NET 2023)

TRADE POLICY RESPONSES

Trade policies are a major source of risk for global food price stability. This section tracks recent trade policy announcements as potential sources of such risk. For regular tracking of trade measures, see the Macroeconomics, Trade, and Investment Global Practice COVID-19 Trade Policy Database for Food and Medical Products, the World Trade Organization COVID-19 Agriculture Measures Database, and the IFPRI COVID-19 Food Trade Policy Trade Tracker.

Trade policy actions on food and fertilizer have surged since the beginning of the war in Ukraine, and countries actively used trade policy to respond to domestic needs when faced with potential food shortages at the beginning of the COVID-19 pandemic. Active export restrictions on major food commodities are listed in Table 2 and restrictions on other foods in Table 3. As of March 13, 2023, twenty-three countries had implemented 29 food export bans, and 10 had implemented 14 export-limiting measures.

Table 2: Food Trade Policy Tracker (Major Food Commodities)

Jurisdiction	Measure	Products	Announcement	Expected end date
Afghanistan	Export ban	Wheat	5/20/2022	12/31/2023
Algeria	Export ban	Sugar, pasta, oil, semolina, all wheat derivatives	3/13/2022	12/31/2023
Argentina	Export taxes	Soybean oil, soybean meal	3/19/2022	12/31/2023
Azerbaijan	Export ban	Onions	2/3/2023	12/31/2023

Bangladesh	Export ban	Rice	6/29/2022	12/31/2023
Burkina Faso	Export ban	Millet, maize, sorghum flours	2/28/2022	12/31/2023
Belarus	Export licensing	Wheat, rye, barley, oats, corn, buckwheat, millet, triticale, rapeseed, sunflower seeds, beet pulp, cake, rapeseed meal	4/13/2022	12/31/2023
Cameroon	Export ban	Cereals, vegetable oil	12/27/2021	12/31/2023
China	Export ban	Corn starch	10/2/2022	12/31/2023
Georgia	Export ban	Wheat, barley	7/4/2022	7/01/2023
India	Export ban	Wheat	5/13/2022	12/31/2023
India	Export ban	Sugar	6/1/2022	10/31/2023
India	Export licensing	Wheat flour and related products	7/6/2022	12/31/2023
India	Export ban	Wheat flour, semolina, maida	8/25/2022	12/31/2023
India	Export taxes	Rice in the husk (paddy or rough), husked (brown) rice, semi-milled or wholly milled rice (other than parboiled rice and basmati rice)	9/9/2022	12/31/2023
Kazakhstan	Export ban	Onions	2/8/2023	5/8/2023
Kosovo	Export ban	Wheat, corn, flour, vegetable oil, salt, sugar	4/15/2022	12/31/2023
Kuwait	Export ban	Grains, vegetable oil, chicken meat	3/20/2022	12/31/2023
Kyrgyzstan	Export ban	Onions	1/31/2023	4/30/2023
Lebanon	Export ban	Processed fruits and vegetables, milled grain products, sugar, bread	3/18/2022	12/31/2023
Mexico	Export taxes	Maize	1/16/2023	6/30/2023
Morocco	Export ban	Tomatoes, onions, potatoes	2/8/2023	12/31/2023
Pakistan	Export ban	Sugar	4/15/2022	12/31/2023
Russia	Export ban	Rice, rice groats	6/30/2022	12/31/2023
Russia	Export taxes	Soya beans	4/14/2022	8/31/2024
Russia	Export taxes	Sunflower oil, sunflower meal	4/15/2022	12/31/2023
Russia	Export taxes	Wheat, barley, corn	4/8/2022	12/31/2023
Serbia	Export ban	Corn flour, sunflower oil	3/10/2022	12/31/2023
Tunisia	Export ban	Fruits and vegetables	4/12/2022	12/31/2023
Türkiye	Export licensing	Poultry meat, eggs, vegetables, fruits	1/27/2022	12/31/2023
Türkiye	Export ban	Cooking oils	3/9/2022	12/31/2023
Türkiye	Export ban	Beef meat, sheep meat, goat meat	3/19/2022	12/31/2023
Uganda	Export taxes	Maize, rice, soya beans	6/2/2022	12/31/2023
Uzbekistan	Export ban	Onions	1/20/2023	5/20/2023

Table 3: Food Trade Policy Tracker (Other Commodities)

Jurisdiction	Measure	Products	Announcement	Expected end date
Argentina	Export ban	Beef meat	1/1/2022	12/31/2023
Azerbaijan	Export licensing	Flour-grinding industry goods, starch, wheat gluten, oilseeds and other seeds, medicinal and industrial crops, feed	3/19/2022	12/31/2023
China	Export ban	Phosphate rock	9/28/2021	12/31/2023
China	Export licensing	Fertilizers	9/24/2021	12/31/2023
Lebanon	Export ban	Meat products, fish, potatoes, fruits and vegetables, oil, animal fat, ice cream, cacao, mineral water, milk	3/11/2022	12/31/2023
Russia	Export licensing	Nitrogenous fertilizers	11/3/2021	12/31/2023
Türkiye	Export ban	Beans, lentils, olive oil	2/27/2022	12/31/2023
Ukraine	Export ban	Nitrogenous fertilizers	3/12/2022	12/31/2023
Vietnam	Export taxes	Mineral fertilizers	5/6/2022	12/31/2023

Source: International Food Policy Research Institute COVID-19 Food Trade Policy Tracker and Macroeconomics, Trade, and Investment Global Practice COVID-19 Trade Policy Database for Food and Medical Products.

ANNEX A: FOOD INFLATION APRIL 2022–MARCH 2023 (PERCENT CHANGE, YEAR ON YEAR)

Country/Economy	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23
Low Income												
Afghanistan				24.9	23.2	17.6	12.3	10.8	5.2	3.2		
Burkina Faso	25.6	25.2	28.9	30.8	29.8	26.4	23.7	19.6	14.7	10.8	7.7	1.4
Burundi	19.3	22.9	21.0	24.4	24.2	26.3	29.5	39.8	39.1	41.3	40.9	48.9
Chad	8.2	10.8	12.9	13.0	14.4	12.3	16.6	21.6	16.2	17.2	16.6	
Ethiopia	42.9	43.9	38.1	35.6	33.3	31.0	30.7	34.2	32.9	33.6	29.6	32.8
Gambia	15.5	14.2	13.7	13.9	14.9	15.7	17.1	16.6	17.4	16.9	17.5	
Guinea	12.6		12.8	12.7								
Liberia	-2.4		-1.1	-1.0	-3.9	-5.1	3.1					
Madagascar			8.6	9.9	10.3	10.9	11.7	12.3	12.6	13.8	14.2	
Malawi	19.5			32.5	33.4	33.7	34.5	33.4	31.3	30.5	31.7	
Mali	12.3	14.1	12.8	16.7	20.1	16.3	16.3	14.4	12.1	8.8	7.9	
Mozambique	10.5	13.9	16.3	17.7	17.8	17.9	19.6	20.2	14.6	16.1	17.0	18.5
Niger	9.6	9.6	8.1	5.9	5.2	4.9	4.0	5.2	3.9	1.4	-0.6	
Rwanda	13.2	23.8	26.1	32.7	34.5	41.2	56.9	64.4	59.2	57.3	59.8	62.6
Sierra Leone	23.0		28.5	30.6	31.6	35.2	40.1	43.6	46.7	47.5	50.2	
Somalia	11.9	14.7	16.9	17.5	16.7	16.1	15.0	12.7	9.4	6.7	5.4	5.0
South Sudan	0.1		2.3	1.7	-5.3			-10.5	-25.0	11.4	34.8	
Sudan												
Togo	13.6	13.7	10.2	7.7	7.2	8.6	6.1	9.1	6.7	5.5	1.6	3.6

Uganda	5.3	13.6	14.5	16.5	18.8	21.6	25.6	27.8	29.4	27.6	27.3	26.8
Lower Middle Income												
Algeria	15.7	13.4	17.3	14.5	14.5	11.3	10.5	11.6	13.3	13.5	13.9	
Angola	25.9	25.8	25.2	24.6	23.9	22.9	21.8	20.3	18.9	17.1	15.8	14.9
Bangladesh	6.2	8.3	8.4	8.2	9.9	9.1	8.5	8.1	7.9	7.8	8.1	9.1
Belize	7.1	7.3	7.5	8.0	8.2	9.4	9.6	10.3	13.8	15.3	14.5	
Benin	-1.0	-1.7	-9.0	-5.3	-3.9	-7.2	-0.8	1.2	-0.4	-1.9	8.9	10.9
Bhutan	3.7	3.5	5.1	5.8	5.2	4.3	2.9	2.2	1.5	1.5	1.9	
Bolivia	-0.5	0.9	2.2	2.3	0.8	2.2	5.7	6.4	6.6	6.8	4.6	5.0
Cabo Verde	15.8	15.2	16.2	16.7	17.6	17.9	17.8	17.2	15.8	15.6	16.6	
Cambodia	6.2	5.5	6.5	5.0	4.3	4.6	4.3	4.1	3.8			
Cameroon	12.0	12.4	12.1	15.9	14.4	15.7			13.8			
Cote d`Ivoire	7.4	5.2	9.8	9.0	10.9	10.8	9.6	8.5	6.7	6.0		
Djibouti			25.7	10.9	12.5				8.4	9.9		
East Timor	7.3	8.0	8.6	8.5	8.3	8.2	7.6	7.2				
Egypt	26.0	24.8	22.4	22.4	23.1	21.7	23.9	30.0	37.3	47.9	61.8	63.0
El Salvador	10.9	13.3	14.4	14.1	14.5	13.6	12.8	12.1	12.2	12.2	12.6	11.6
Eswatini		5.4	6.7		10.8	12.1	12.5	14.7	15.1			
Ghana	26.6	30.1	30.7	32.3	34.4	38.8	43.7	55.3	59.7	61.0	59.1	50.8
Haiti	27.7	29.1	30.7	32.7		44.3	53.1		47.7	48.6		
Honduras	10.6	13.0	15.6	17.6	18.0	17.2	18.0	18.1	16.2	17.2	18.2	17.3
India	8.1	7.8	7.6	6.7	7.6	8.4	7.0	5.1	4.6	6.2	6.3	5.1
Indonesia	5.3	5.8	9.1	10.3	8.3	8.4	7.0	5.8	5.7	5.7	7.2	5.7

Iran, Islamic Republic of	44.3	50.9	85.5	90.2	84.0				67.8	72.0	73.3	
Kenya	11.1	12.2	13.4	15.2	15.3	15.5	15.8	15.5	13.9	12.9	13.3	13.5
Kyrgyzstan	18.0	17.1	14.8	16.0	18.9	18.7	17.2	17.2	15.8	16.8	18.3	12.7
Lao People`s Democratic Republic	5.7	8.1	16.9	21.6	30.2	35.5	38.8	42.7	45.9	47.1	49.3	51.0
Lesotho	7.2	7.4	8.4	10.2	10.2	10.2	10.0	9.9	10.3	16.1	16.3	
Mauritania	13.4		16.0	17.4	11.8	12.6	13.7	14.7	15.4	15.9	16.2	16.2
Mongolia	16.8	18.0	19.5	21.6	18.7	17.0	16.4	16.8	15.4	14.0	16.1	
Morocco	9.1	8.4	10.6	12.0	14.1	14.7	13.8	14.4	15.0	16.8	20.1	
Myanmar	15.4	15.7	16.0	17.1	18.4							
Nepal	7.4	7.1	7.4	6.9	7.1	8.2	8.1	7.4	5.8	5.6	6.2	5.6
Nicaragua	16.2	16.9	15.5	18.3	18.9	17.1	18.6	16.6	15.9	15.7	15.2	13.9
Nigeria	18.4	19.5	20.6	22.0	23.1	23.3	23.7	24.1	23.8	24.3	24.4	24.5
Pakistan	17.0	17.3	25.9	28.8	29.5	31.7	36.2	31.2	35.5	42.9	45.1	47.2
Palestine, State of	9.7	8.1	6.7	4.6	3.6	4.9	6.8	6.3	6.9	4.2	5.4	2.9
Papua New Guinea			5.1			8.1			9.5			
Philippines	4.0	5.2	6.4	7.1	6.5	7.7	9.8	10.3	10.6	11.2	11.1	9.5
Samoa												
Senegal	11.3	12.1	14.1	17.1	17.1	18.1	19.6	21.4	18.8	13.7	11.6	11.9
Sri Lanka	45.1	58.0	75.8	82.5	84.6	85.8	80.9	69.8	58.5	53.6	49.0	47.6

Tajikistan	8.1		9.6	9.7	8.0	7.9	6.1			5.3	5.5	
Tanzania, United Republic of	6.6	5.5	5.9	6.5	7.8	8.3	9.1	9.5	9.7	9.9	9.6	9.7
Tunisia	8.9	8.4	9.9	11.4	12.3	13.3	13.2	15.7	15.1	14.6	16.1	16.3
Ukraine	23.1	24.1	28.3	29.5	31.3	32.1	36.1	35.2	34.4	32.8	31.5	26.5
Vietnam	2.1	2.4	2.9	2.9	3.9	4.9	5.9	6.9	7.9	8.9	9.9	10.9
Zambia	14.1	12.3	11.9	12.0	11.4	12.1	12.7	12.1	11.9	11.6	11.6	11.8
Zimbabwe	104.0	155.0	255.0	309.0	353.0	340.0	321.0	376.0	285.0	264.0	137.0	128.0
Upper Middle Income												
Albania	10.4	11.8	13.2	13.9	14.9	14.6	15.2	15.4	14.8	13.9	14.0	11.5
Argentina	62.1	64.2	66.4	70.6	80.0	86.6	91.6	94.2	95.0	98.4	102.6	106.6
Armenia	14.5	14.7	17.3	13.5	12.5	13.7	12.5	11.1	10.0	9.4	9.9	5.1
Azerbaijan	18.3	20.1	20.5	20.3	20.8	21.7	21.0	20.2	19.1	17.5	17.2	16.9
Belarus	19.0	19.3	19.6	19.6	18.9	18.3	15.9	14.4	13.8	12.9	12.8	9.0
Bosnia and Herzegovina	15.0	23.5	24.2	25.6	26.6	27.2	27.3	26.0	24.5	23.0	22.1	
Botswana	6.2	8.3	9.7	11.9	13.3	14.8	15.8	16.3	17.0	17.2	17.3	17.8
Brazil	13.5	13.5	13.9	14.7	13.4	11.7	11.2	11.8	11.6	11.1	9.8	7.3
Bulgaria	20.7	22.1	23.2	23.6	23.6	24.9	25.7	26.1	25.6	24.6	23.5	
China	1.7	2.2	2.7	6.2	5.9	8.8	7.1	3.7	4.8	6.2	2.7	2.5
Colombia	27.0	22.0	24.1	25.1	26.0	27.0	27.3	27.3	28.0	26.2	24.0	21.6
Costa Rica	11.1	13.0	15.1	20.7	22.3	20.3	20.6	19.9	19.1	18.6	14.5	12.4
Dominica												

Dominican Republic	12.9	13.1	13.2	12.5	10.4	10.3	9.9	10.0	11.8	12.0	10.2	9.1
Ecuador	2.5	4.1	7.7	6.7	6.5	7.9	8.0	8.2	8.4	6.2	5.7	6.5
Equatorial Guinea		6.7	7.8	5.8	7.0	6.3	5.2	4.5	5.0	4.5	4.3	
Fiji	7.2	3.6	3.3	4.7	6.9	6.0	9.1	9.6	7.1	7.0	3.2	5.3
Gabon	3.9	3.9	5.8	6.7	8.1	8.8	8.0		8.8	8.5		
Georgia	21.4	22.0	21.8	16.4	15.8	17.7	15.7	16.8	16.4	15.1	14.1	11.7
Grenada												
Guatemala	5.6	7.2	10.7	12.7	13.3	13.1	13.6	12.1	11.8	13.3	15.4	14.6
Guyana	13.8	11.5	7.3	9	10.6	11.2	12.3	13.4	14.1	12	12.6	
Iraq	9.0	9.0	7.1	6.7	2.9	5.7	6.7	6.5	6.7	9.9	9.5	
Jamaica	6.3	13.9	13.7	12.7	12.6	10.5	10.1	14.2	13.7	12.7	11.3	
Jordan	4.3	5.8	4.1	3.9	3.0	3.2	3.5	3.1	0.6	-0.4	1.0	0.7
Kazakhstan	17.9	19.0	19.2	19.9	21.0	22.2	23.3	24.4	25.6	26.0	26.2	20.5
Kosovo, Republic of	16.4	18.6	19.2	22.0	21.1	21.2	22.5	19.6	19.4	19.7	18.8	14.6
Lebanon	374.4	363.8	332.3	240.2	198.1	208.1	203.2	171.2	142.9	138.5	260.5	
Libya	5.1	4.9	4.5			3.9	3.6	3.8	4.2			
Malaysia	4.2	5.3	6.3	7.0	7.3	6.9	7.3	7.4	6.8	6.8	7.1	
Maldives	3.7	4.7	5.2	6.0	6.2	5.5	5.9	5.7	6.6	7.8	7.6	
Mauritius	17.8	11.9	6.5	13.6	16.0	18.5	17.8	17.0	16.9	16.0	11.4	7.4
Mexico	12.8	12.5	13.6	14.2	14.2	14.6	14.5	12.4	12.7	12.8	12.3	11.0

Moldova, Republic of	30.2	32.5	34.3	36.4	38.4	37.1	36.2	33.1	31.8	28.6	26.5	22.2
Montenegro	19.8	21.3	23.1	25.4	26.1	27.7	30.3	31.0	29.8	26.4	24.3	14.8
Namibia	5.8	6.8	7.2	8.4	8.8	9.5	9.2	9.5	12.0	14.3	14.4	14.9
North Macedonia, Republic of	15.1	17.4	21.5	24.3	25.9	29.8	32.5	30.8	28.0	25.9	26.1	22.3
Panama	3.0	3.6	4.2	4.8	5.1	4.4	4.6	4.7	5.2	5.3	5.2	4.9
Paraguay	19.8	18.4	18.6	16.7	16.1	12.9	10.9	11.1	9.2	7.7	6.8	7.2
Peru	11.8	13.7	11.9	11.6	11.4	11.7	11.3	12.0	15.2	15.9	16.3	15.6
Romania	13.5	14.2	14.7	16.1	18.2	19.1	20.6	21.5	22.0	22.5	22.3	21.6
Russian Federation	20.5	20.1	18.0	16.8	15.8	14.2	12.1	11.1	10.3	10.2	9.3	2.6
Saint Lucia												
Saint Vincent and the Grenadines												
Serbia	16.1	16.3	19.3	29.4	20.9	20.8	23.9	23.5	24.4	24.7	26.0	27.0
South Africa	6.2	8.1	9.2	10.4	11.8	12.3	12.3	12.9	12.8	14.1	14.1	
Suriname	60.9	55.1	38.3	32.6	36.7	40.0	51.3	54.9	61.4	58.4	58.7	
Thailand	4.8	6.2	6.4	8.0	9.4	9.8	9.6	8.4	8.9	7.7	5.7	5.2
Turkey	90.8	93.1	94.3	94.5	89.3	92.4	98.7	102.0	76.8	70.1	68.6	67.1
Venezuela	192.9	154.6	146.1	131.4	108.8	157.9	157.7					
High Income												

Antigua and Barbuda												
Aruba	8.3	9.7	11.1	11.0	12.1	12.1	11.5	13.6	13.3	12.8	11.8	
Australia			5.9			9.0			9.2			
Austria	8.2	8.8	11.5	12.1	13.0	13.5	14.5	15.2	16.3	17.4	16.5	
Bahamas												
Bahrain	9.7	11.6	7.3	8.5	10.4	10.7	9.9	12.7	11.5	6.6	4.3	
Barbados			18.6	17.4	11.2	7.6	12.9	18.8	19.5			
Belgium	5.1	6.3	8.4	9.2	9.7	10.4	12.3	14.5	14.5	15.6	16.1	17.0
Bermuda	5.4	6.4	8	9	9.5	10.6	10.5	10.4	10.3			
Brunei Darussalam	4.7	6.0	6.4	7.4	7.6	7.3	6.7	6.3	5.5	5.1	4.8	
Canada	8.8	8.8	8.8	9.2	9.8	10.3	10.1	10.3	10.1	10.4	9.7	
Cayman Islands			7.9			10.3			14.0			
Chile	15.9	18.1	19.2	20.7	22.8	23.0	22.7	24.7	25.2	24.8	22.0	17.9
Croatia	13.4	15.9	17.4	19.0	19.8	19.6	20.4	19.6	19.6	17.8	17.7	18.2
Cyprus	11.2	8.5	7.8	7.4	1.6	7.4	13.2	15.5	12.2	10.3	9.3	6.5
Czech Republic	11.1	15.5	18.7	20.0	20.2	21.8	26.2	27.1	26.4	25.6	24.6	24.0
Denmark	7.7	10.6	13.6	15.6	16.7	15.9	16.5	16.0	15.6	15.0	15.3	16.1
Estonia	14.6	17.0	19.2	19.7	21.4	24.4	28.0	28.2	29.8	27.4	25.2	24.7
Faroe Islands		2.6	6.2			9.9			13.2			
Finland	6.0	9.0	10.9	12.3	12.5	14.5	15.7	16.0	16.0	15.3	16.3	16.2
France	4.3	4.6	6.4	7.4	8.5	10.9	13.2	13.3	13.1	14.4	16.1	17.2

Germany	8.6	11.1	12.7	14.8	16.6	18.7	20.3	21.0	20.4	20.2	21.8	22.3
Greece	11.3	12.4	12.9	13.4	13.5	13.7	15.1	15.3	15.7	15.7	15.0	14.5
Hong Kong	4.0	4.0	4.0	4.1	3.8	3.7	3.4	3.5	3.8	5.0	2.5	
Hungary	15.6	18.6	22.1	27.0	30.9	35.2	40.0	43.8	44.8	44.0	43.3	42.6
Iceland	5.0	6.2	7.3	8.1	8.6	8.4	9.7	10.4	10.2	11.0	12.2	12.4
Ireland	3.5	4.5	6.8	8.1	9.2	10.2	10.8	11.7	12.1	12.9	13.3	13.3
Israel	4.7	5.5	4.0	4.6	4.5	3.3	4.4	5.2	4.6	4.0	3.9	4.5
Italy	6.7	7.6	9.2	10.2	10.7	11.8	13.8	13.7	13.3	12.5	13.2	13.3
Japan	3.2	3.1	3.7	4.3	4.5	5.1	6.4	7.5	7.9	7.8	8.1	
Korea, Republic of	4.3	5.9	6.4	8.1	8.1	7.9	7.6	4.7	5.2	5.5	5.5	6.1
Kuwait	9.8	8.7	8.6	8.2	7.3	6.9	7.0	7.1	7.8	7.8	7.4	
Latvia	17.8	18.7	22.5	24.5	26.1	27.8	29.9	30.0	29.3	28.4	25.2	24.3
Lithuania	22.0	25.5	28.9	30.4	31.0	31.2	34.5	36.1	35.0	33.4	30.7	28.0
Luxembourg	5.4	5.5	6.8	7.5	8.0	8.8	10.5	10.4	10.9	11.8	13.1	13.3
Macao	1.5	1.7	1.9	2.2	1.9	1.8	1.8	1.6	1.9	2.4	2.2	
Malta	9.2	9.9	10.0	11.5	11.1	11.8	13.7	12.5	12.7	10.6	12.2	
Netherlands	8.5	9.1	11.2	12.3	13.1	12.8	14.0	15.7	17.0	17.6	18.4	18.4
New Caledonia	3.7	4.6	5.7	5.6	7.5	9.8	10.6	8.7	10.9	8.7	7.3	6.8
New Zealand	6.4	6.8	6.8	7.4	8.3	8.3	10.1	10.7	11.3	10.3	12.0	12.1
Norway	2.1	3.1	5.6	10.2	10.1	11.9	12.9	12.6	11.1	12.0	9.0	8.8
Oman	5.5	5.0	6.1	6.1	4.9	5.1	4.6	5.0	5.0	4.8	5.1	

Poland	13.4	14.2	14.9	15.9	18.1	20.0	22.9	23.0	22.1	21.2	24.8	24.7
Portugal	10.7	12.8	13.4	14.3	15.8	16.9	19.2	20.6	20.4	21.0	21.9	20.0
Qatar	4.1	6.7	4.9	4.8	6.4	4.6	1.3	0.3	1.5	-0.6	-1.9	1.1
Saint Kitts and Nevis												
Saudi Arabia	4.6	4.6	4.8	4.2	4.3	4.7	4.6	3.7	4.3	4.3	3.1	2.3
Seychelles	-0.8	1.3	2.2	1.8	0.9	1.7	2.5	2.6	2.9	3.1	1.9	2.0
Singapore	4.1	4.5	5.4	6.1	6.4	6.9	7.1	7.3	7.5	8.1	8.1	
Slovakia	13.9	16.0	17.9	19.1	21.0	23.3	26.0	27.8	28.1	27.5	27.8	28.1
Slovenia	9.4	11.1	12.8	13.5	14.1	14.7	17.7	19.4	18.9	19.4	18.3	19.1
Spain	10.4	11.2	13.3	13.9	14.1	14.7	15.8	15.7	15.9	15.5	16.7	16.5
Sweden	6.4	8.5	10.9	13.6	14.2	16.3	17.6	18.6	18.6	20.4	22.1	20.6
Switzerland	-0.3	0.9	1.8	1.9	2.3	2.9	4.2	4.4	4.0	5.6	6.5	6.7
Taiwan	6.9	7.4	7.3	7.2	4.9	5.3	5.2	4.1	4.9	5.3	4.3	4.9
Trinidad and Tobago	8.7	8.1	7.8	10.3	11.7	11.6	12.0	13.8	17.3	17.3		
United Arab Emirates			9.0		9.1	7.5	8.4	6.7	6.1			
United Kingdom	6.7	8.6	9.9	12.9	13.5	14.9	16.7	16.7	17.0	17.0	18.5	
United States	9.4	10.2	10.4	10.9	11.4	11.2	11.0	10.6	10.4	10.1	9.5	8.5
Uruguay	12.2	10.8	11.5	12.2	12.1	14.0	11.5	11.3	11.8	12.4	10.9	

Source: International Monetary Fund, Haven, and Trading Economics data. Food inflation is calculated from the food and non-alcoholic beverages component of the Consumer Price Index for each country.

Color code	Indicator
	Price increase less than 2 percent
	Price increase between 2 and 5 percent
	Price increase between 5 and 30 percent
	Price increase 30 percent or higher

Note: The **food price inflation tracker** shows monthly food inflation (year on year) from January 2022 for countries for which data are available; blank (white) cells indicate missing data. The International Monetary Fund is the core data source for food inflation, supplemented by Trading Economics. A traffic light approach was adopted to show the severity of food inflation, and the color coding was determined based on historical food price inflation targets and expert consultation with the World Bank Agriculture and Food Unit. Purple indicates price increases greater than 30 percent, red indicates a year-on-year increase of 5 to 30 percent, yellow indicates a year-on-year increase of 2 to 5 percent, and green indicates a year-on-year increase of less than 2 percent.

The heat map shows the latest available nominal and real monthly food inflation (year on year) data for countries for which data are available. The International Monetary Fund is the core data source for food inflation, supplemented by Trading Economics. Real food inflation is calculated as the difference between food inflation and overall inflation. A traffic light approach was adopted to show the severity of nominal food inflation, and the color coding was determined based on historical food price inflation targets and expert consultation with the World Bank Agriculture and Food Unit. Blank (gray) cells indicate countries with no data in the last 4 months. For nominal food price inflation, purple indicates inflation increases greater than 30 percent, red indicates a year-on-year increase of 5 to 30 percent, yellow indicates a year-on-year increase of 2 to 5 percent, and green indicates a year-on-year increase of less than 2 percent. For real food inflation, purple indicates inflation increases greater than 5 percent, red indicates a year-on-year increase of 2 to 5 percent, yellow indicates a year-on-year increase of 0 to 2 percent, and green indicates a year-on-year change of less than 0 percent.

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