

Food for Thought: Fertile Ground for ASEAN+3 Inflation?¹

July 21, 2023

“Every gun that is made, every warship launched, every rocket fired, signifies in the final sense a theft from those who hunger and are not fed, those who are cold and not clothed.”

~ Dwight D. Eisenhower
34th President of the United States, 1953–61

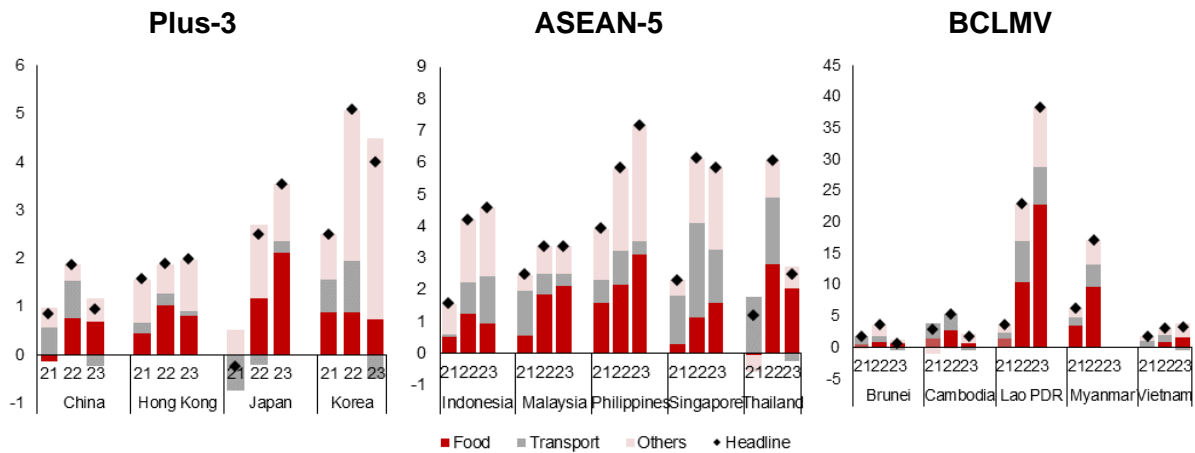
I. Introduction

1. **The surge in global food prices has made food a prominent driver of ASEAN+3 inflation.** World prices of food, along with energy, surged to record highs last year, as supply disruptions caused by the Russia-Ukraine crisis added to the supply chain bottlenecks induced by the pandemic ([del Rosario and Quach 2022](#)). Extreme weather and livestock diseases also pushed up global food prices ([Tan, Choo, and Chong 2022](#)). ASEAN+3 economies—the majority of which are net food importers—have not been spared, with domestic food prices pushing up inflation in many places (Figure 1). Food prices have continued to hold up in 2023 while the share of transport in inflation has diminished in line with the sharp decline in global crude oil prices.

2. **Although global food prices have fallen from their peaks, they remain well above historical levels and the decline is yet to be felt in the region.** The Food and Agriculture Organization’s (FAO’s) price index, which tracks the most traded food commodities (meat, dairy, cereals, vegetable oil, and sugar) globally, has fallen by 20 percent since reaching a record high in Q2 2022 following the breakout of the crisis. However, this relief in prices is yet to be transmitted materially, with China, Indonesia, Thailand, the Philippines, and Vietnam showing only modest declines in retail food prices in recent months, while the rest of the region is still facing rising prices (Figure 2). In fact, global and domestic retail food prices remain high by historical standards—world food price indices reported by the FAO, IMF, and World Bank are still 30–50 percent higher than their 2018–19 pre-pandemic averages, while food prices in the ASEAN+3 are 10–20 percent higher. Myanmar and Lao PDR are extreme cases, where retail food prices are 30–90 percent higher than their 2018–19 levels, attributable in part to their steeply depreciating currencies.

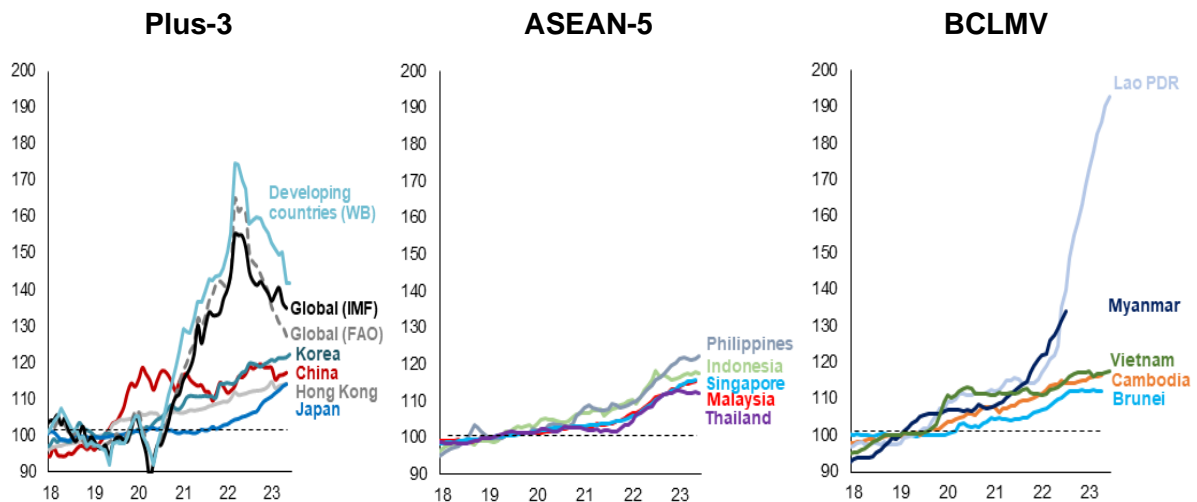
¹ Prepared by Diana del Rosario and Michael Wynn (both Macro-Financial Research Group); reviewed by Li Lian Ong (Senior Advisor). The views expressed in this note are the authors’ and do not necessarily represent those of the AMRO or AMRO management. The authors would like to thank Allen Ng for useful comments.

Figure 1. Food and Transport Contributions to Headline Inflation, 2021–23
(Percentage points)



Sources: National authorities via Haver Statistics; and AMRO staff calculations.
 Note: 2023 refers to data until April for Brunei Darussalam ("Brunei") and Cambodia; until May for China; Hong Kong, China (Hong Kong for short); Japan; Malaysia; and Singapore; and until June for Indonesia; Korea; Lao PDR; Philippines; and Thailand. Myanmar's data cover until July 2022 only.

Figure 2. World and ASEAN+3: Food Prices
(Seasonally adjusted, index 2018–19 = 100)



Sources: FAO, IMF, World Bank, and national authorities, all via Haver statistics; and AMRO staff calculations.
 Note: 2023 refers to data until April for Brunei and Cambodia; until May for China; Hong Kong, China (Hong Kong for short); Japan; Malaysia; and Singapore; and until June for Indonesia; Korea; Lao PDR; Philippines; and Thailand. Myanmar's data cover until July 2022 only. Price indices for Brunei, Cambodia, Lao PDR, Myanmar, and Thailand include non-alcoholic beverages, as the sole food price index is unavailable. The series has been seasonally adjusted by AMRO staff using X-12-ARIMA.

3. Still-high food commodity prices could weigh on ASEAN+3 growth. In particular, they could negatively affect private consumption in the near term, especially as COVID-19 pandemic support measures are unwound and pent-up demand dissipates. Low-income economies, such as Cambodia, Lao PDR, and Myanmar, are particularly vulnerable given the higher share of household income spent on food. Apart from increasing food insecurity, high food prices can strain government budgets faced with larger subsidy bills and greater social assistance spending to mitigate cost pressures, as is the case with Malaysia. Monetary policy may also have to be tightened further—in addition to the policy rate hikes in 2022 and 2023 to date—to prevent elevated costs from becoming entrenched.

4. **This note examines the near-term trajectory of both food and headline inflation across ASEAN+3 economies and assesses the risks to the outlook from both supply and demand factors.**² It investigates the transmission of global food prices to inflation across the region and explores the risks to the food price outlook. It concludes with a discussion on policy considerations to strengthen the region's defences from elevated global food commodity prices.

II. Transmission to ASEAN+3 Inflation

5. **The decline in global food prices since mid-2022 is set to bring welcome relief to inflation in ASEAN+3 economies, but the question is when that would happen.** Our vector autoregression (VAR) model suggests that the region is still dealing with the aftershocks of the global food price spike in Q2 2022, and its effects on domestic inflation are likely to dissipate only from Q3 2023.³ The impulse response functions from the model, which provide insights into how fast and long global price shocks propagate to domestic inflation, suggest that:

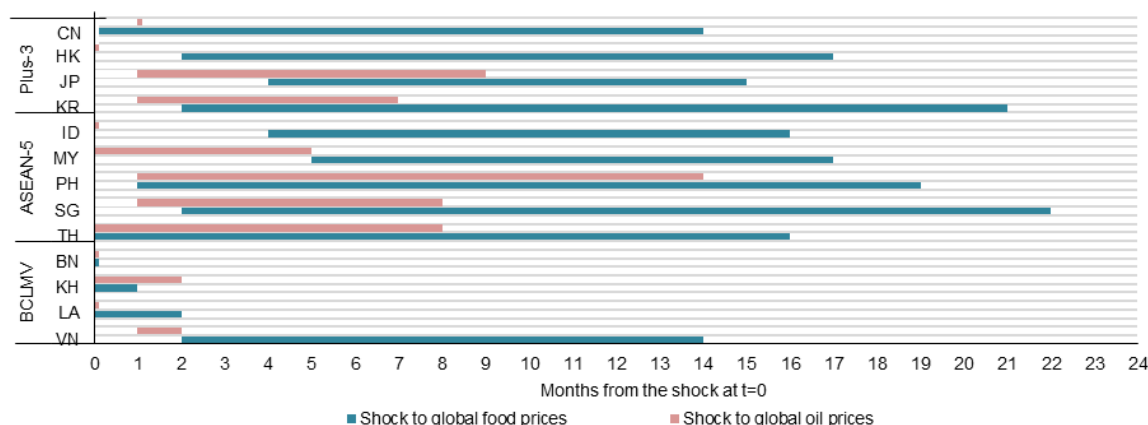
- Global food price shocks are transmitted to ASEAN+3 headline inflation within 3 months following the shock, except for Japan and Malaysia where it takes 4–5 months for the shocks to impact domestic inflation (Figure 3). By comparison, global oil price shocks are transmitted more quickly—in most cases, within a month of the shock. Food price shocks are persistent, typically lasting 14–22 months in many ASEAN+3 economies, compared to 2–14 months for oil price shocks.
- The transmission of global food price shocks to domestic food inflation tends to show up later than in headline inflation, with a delay of between 1–6 months in the case of China, Indonesia, Malaysia, Thailand, and Vietnam. The impact is also less persistent, at 1–4 months shorter than for headline inflation. These results suggest that global food price shocks can cause immediate broadening in price pressures across the economy, over and above its direct effect on consumer food prices. Indirect inflationary effects occur because global food price spikes can trigger depreciations in local currencies, giving rise to costlier imports or increases in inflation expectations, as shown by [Walsh \(2016\)](#) and [Peersman \(2022\)](#).

These findings imply that the nearly 30 percent year-over-year increase in the FAO food price index from May–June 2022 is only beginning to dissipate. Absent new adverse shocks, ASEAN+3 inflation is set to fall considerably from Q3 2023 following the trend decline in global food prices since mid-2022.

² Headline inflation is defined as total inflation within an economy, including the more volatile food and energy prices; core inflation excludes these items.

³ Historical global food price shocks are simulated in a vector autoregression (VAR) model after controlling for the impact of oil price shocks, domestic demand developments (proxied by the output gap), and changes in the nominal effective exchange rate on both food and headline inflation. The VAR is estimated for each of the ASEAN+3 economies using data from January 2000 to March 2023 in most cases, after interpolating quarterly GDP series into monthly frequency. A simple linear regression is applied to Lao PDR and Myanmar data in lieu of the VAR, owing to limited time series data. Shocks to domestic inflation are identified via Cholesky decomposition according to the order of variables adapted in [Jongwanich and Park \(2011\)](#).

Figure 3. ASEAN+3: Transmission Period of Global Commodity Price Shocks to Headline Inflation (Months after shock)



Sources: Bank for International Settlements, FAO, and national authorities, all via Haver statistics; AMRO staff calculations.

Note: CN=China; HK = Hong Kong, China; JP = Japan; KR = Korea; ID = Indonesia; MY = Malaysia; PH = Philippines; SG = Singapore; TH = Thailand; BN = Brunei; KH = Cambodia; LA = Lao PDR; VN = Vietnam. Results are based on the periods of significance from the VAR-derived impulse response functions. Results for Lao PDR are derived from a simple linear regression of the same set of variables as in the VAR, where only the contemporaneous (and not the lagged) effects of global oil and food price shocks are statistically significant at the 10 percent level. A simple linear regression for Myanmar yields inconclusive results owing to the insufficient number of observations. Economy-level VARs have a lag order of 2, except for Indonesia where a lag order of 11 following the Akaike Information Criterion (AIC) generates results in line with staff judgment.

6. Various factors explain the delayed and persistent impact of global food price shocks on domestic inflation. Aside from government price control and subsidy schemes, the extent of commodity price pass-through to inflation depends on the import intensity in private consumption, market competition, and availability of inventory buffers. Global food price developments can take time to affect the final consumer, given that they pass through multiple stages of the food supply chain—from the importation of food products and inputs, farming, processing, transportation and storage, and distribution (Bukeviciute, Dierx, and Ilzkovitz 2009; Asaad 2022). The stickiness of food prices to rapid adjustments is also related to the widespread use of contracts in the trade of agricultural commodities, where pricing is often set well ahead of delivery as part of the risk management strategy of both farmers and customers (Kunkel, Peterson Attorneys and Mooty 2015). In contrast, changes in global crude oil prices tend to manifest directly in local transportation and utility costs.

7. The extent to which global food price shocks are transmitted to ASEAN+3 inflation appears to be greatest for the lower-income economies, but the others are not exempt either. Our VAR estimates indicate that food inflation in Cambodia, Lao PDR, and Vietnam rises by over 3 percentage points (ppts), and headline inflation increases by 2–3 ppts, following a 10 ppt increase in global food inflation (Figure 4). The rest of the region—except for Brunei which provides substantial subsidies—also shows statistically significant but smaller pass-through to domestic food and headline inflation. For instance, Thailand is still exposed to global food price shocks even though it is a net food exporter—via increases in food input prices, such as fertilizers of which Thailand imports over 90 percent of its needs. Price controls in Brunei, Indonesia, Malaysia, Thailand, and Vietnam mitigate the pass-through to consumer prices. More generally, global food price shocks tend to have a greater impact on ASEAN+3 headline inflation compared to oil price shocks (Figure 5).

Figure 4. ASEAN+3: Average Response of Inflation to a 10 Percent Increase in Global Food Prices
(Percentage points)

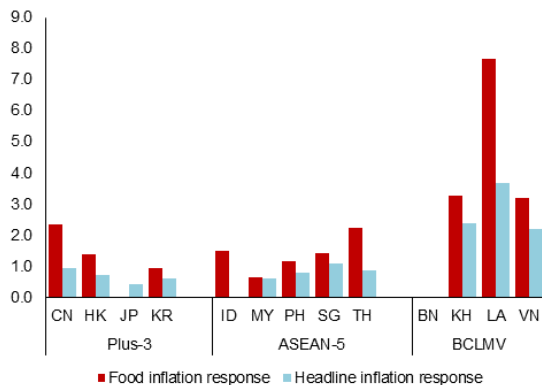
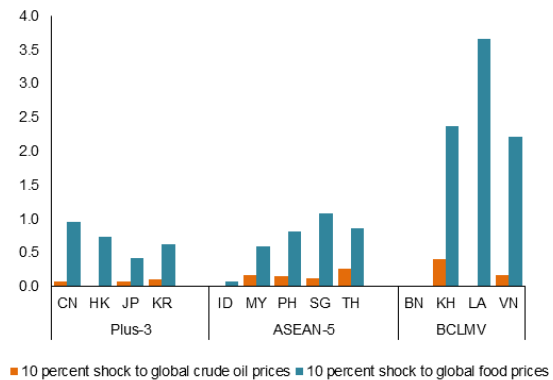


Figure 5. ASEAN+3: Average Response of Headline Inflation to Global Commodity Price Shocks
(Percentage points)



Sources: Bank for International Settlements, FAO, and national authorities, all via Haver statistics; and AMRO staff calculations.

Note: CN=China; HK = Hong Kong, China; JP = Japan; KR = Korea; ID = Indonesia; MY = Malaysia; PH = Philippines; SG = Singapore; TH = Thailand. Impact estimates correspond to the average over the period of significance as presented in Figure 3.

III. Risks to the Regional Outlook

8. **Nonetheless, it may be premature for ASEAN+3 economies to claim victory over food price inflation just yet.** The outlook for global food commodity prices remains precarious. The World Bank food price index is expected to remain 45 percent above its 2018–19 levels despite an anticipated 6 percent decline between April 2023 and end-2024 ([World Bank 2023a](#))—the real price index for 2023 is projected to stay at its second highest level since 1975, exceeded only by the 2022 level. Separately, food inflation in the US is expected to remain above its historical, 2010–19 average of 1.7 percent in 2023, at 6.0 percent, albeit down from 9.9 percent in 2022 ([US Department of Agriculture 2023](#)).

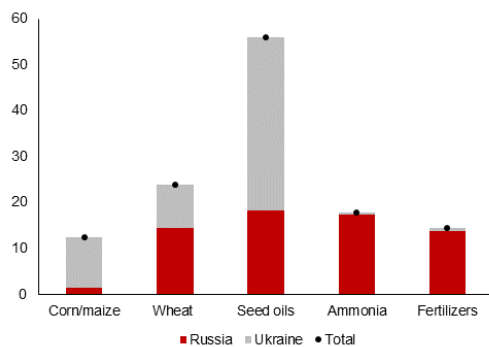
9. **Moreover, near-term risks to the global food price outlook are tilted to the downside.** The two key risks for the ASEAN+3 region comprise:

- **The Black Sea Grain Initiative.** Uncertainties relating to the Russia-Ukraine crisis, such as the collapse of the Black Sea Grain Initiative, could unsettle wheat, maize, oilseed, and fertilizer markets and potentially raise prices. Ukraine is one of the world's main breadbaskets, along with the Russian Federation (Figure 6), and the Initiative, signed on July 22, 2022, had been instrumental in improving global food trade and lowering global food commodity prices. The deal accounted for 60 percent of total Ukrainian export volumes of corn, wheat and barley during the first four months of operation ([UNCTAD 2023](#)). However, the Initiative's implementation has slowed since April 2023 as Russia limited cargo shipments out of the Ukrainian port of Pivdennyi ([United Nations 2023](#)) (Figure 7). Worse, the Initiative expired on July 17 after Russia suspended its participation in the deal unless obstacles to its own exports of grains and fertilizers are addressed ([Duggal 2023](#)).⁴
- **El Niño.** El Niño conditions that are forecast for mid-2023 through early-2024 could result in record-high temperatures and altered rainfall patterns, likewise affecting crop yields and prices ([World Bank 2023a](#)). Weak El Niño conditions have begun to

⁴ The Black Sea Grain Initiative had been extended thrice since July 2022, most recently in May 2023 when Russia consented to a 60-day extension until July 17.

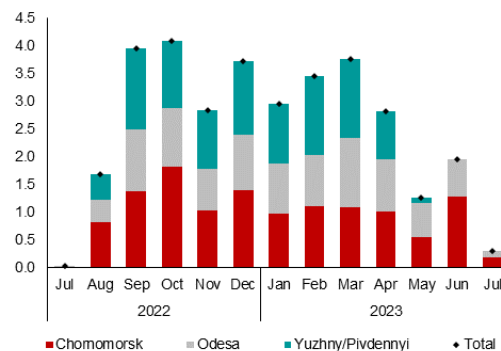
emerge in June 2023, following the above-average warming of atmospheric and oceanic temperatures in the equatorial Pacific Ocean (Figure 8). This weather pattern typically reaches its maximum strength between October through February of the following year, and persists for 9–12 months; occasionally, it could stretch out to two years ([International Research Institute for Climate and Society 2023](#)).⁵ Past El Niño events have lowered global yields of corn, rice, palm oil, and wheat, but improved soybean yields ([Iizumi and others 2014](#)). The impact across crop types varies as El Niño affects parts of the world differently—causing drier conditions in Southeast Asia and Australia, for example, and wetter conditions in East Asia, Brazil, and the US.

Figure 6. Ukraine and Russia: Selected Agriculture-related Exports, 2021
(Percent of world total)



Source: The Observatory of Economic Complexity.

Figure 7. Ukrainian Black Sea Ports: Outbound Vessel Shipments
(Million metric tons)



Source: UN Joint Coordination Centre (accessed on July 19, 2023). Note: Indicated ports are the three Ukrainian ports that operate under the Black Sea Grain Initiative. Port departure data is until July 15, 2023

10. The consequences of last year's spike in fertilizer prices also bears watching in terms of its lingering impact on global food supply. Fertilizers provide the necessary nutrients to boost crop yields, but their affordability for farmers has been affected as fertilizer prices have risen more sharply than crop prices, particularly between Q3 2021 and Q2 2022 (Figure 9). Fertilizer prices were pushed up by challenges associated with sanctions on Russia and Belarus, and export restrictions by China.⁶ Belarus, China, and Russia are major producers of various fertilizer nutrients, while Russia is also a key exporter of nitrogen-based fertilizer inputs (natural gas and ammonia) (Figure 10). On a positive note, fertilizer prices have fallen sharply since the start of 2023 (Figure 11), driven by declines in natural gas prices but worryingly, demand destruction as well ([International Fertilizer Association 2023](#)).

11. Fertilizer usage has in fact decreased globally over the last two years, including among several ASEAN+3 economies. It is estimated to have dropped by nearly 3 percent in 2021 and 5 percent in 2022; in the ASEAN+3, declines have been observed in China, as well as in oil palm and rice-producing countries in Southeast Asia ([International Fertilizer Association 2023](#)). All ASEAN+3 economies, with the exception of China, depend

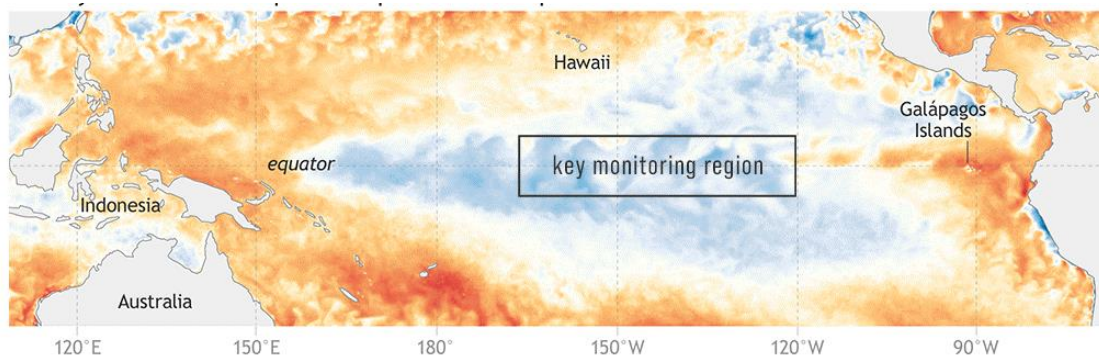
⁵ Moderate-to-strong intensity El Niño conditions is estimated to have an 82 percent chance of developing by Q4 2023. A strong event in the same period has been assigned a likelihood of 52 percent, as of July 2023 ([NOAA Climate Prediction Center 2023](#)).

⁶ While fertilizers are not officially restricted, sanctions on Russian individuals, entities, and sectors have led to logistical constraints and curtailed the flow of fertilizer exports. Sanctions on Belarus—starting in June 2021 in response to the government's domestic repression and later expanded in March 2022 following the country's role in the ongoing Russia-Ukraine crisis—include an explicit ban on imports of potash (potassium-based fertilizers), where Belarus is a major global supplier ([Curtis 2022](#)). Fertilizer export restrictions by China since September 2021 have also squeezed supply ([World Bank 2023b](#)).

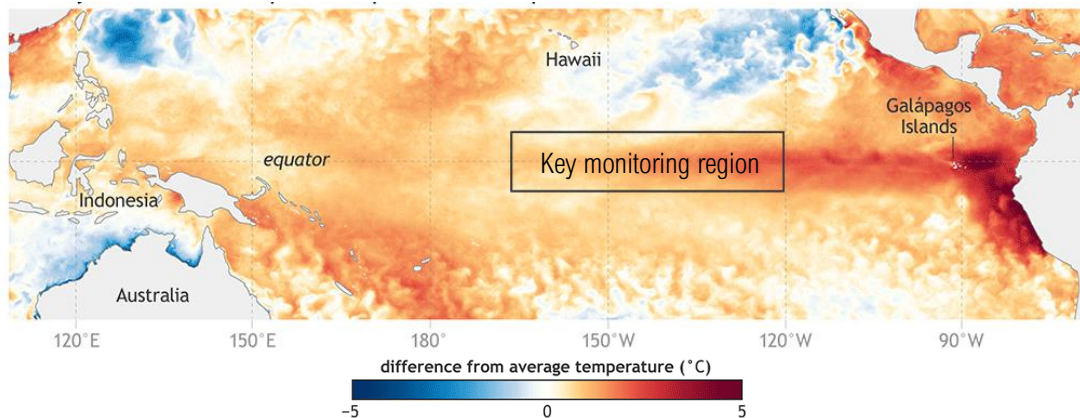
considerably on imported fertilizers for domestic agricultural production (Figure 12), and have thus had to deal with the global supply shortages and price surges. In this context, our estimates point to widespread declines in fertilizer import volumes in the ASEAN+3 in 2021 and 2022, with the reduction having been most acute in Cambodia, Indonesia, Lao PDR, Myanmar, Thailand, and Vietnam (Figure 13). The low-income economies severely cut down their imports of fertilizer blends, while the larger ASEAN-5 economies have reduced their use of potassium-based fertilizers through 2023 to-date in response to the supply constraints from Russia and Belarus.

Figure 8. Sea Surface Temperatures in Tropical Pacific

January 30 – February 5, 2023



May 29 – June 4, 2023

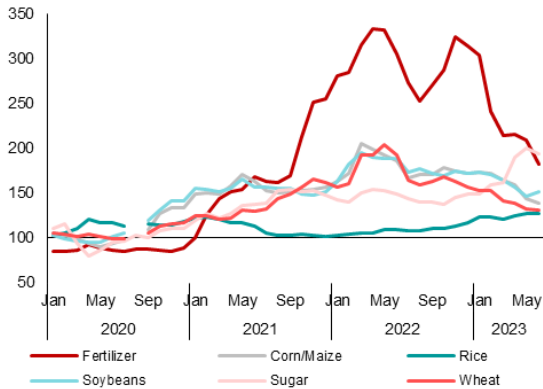


Source: [US NOAA Climate.gov](https://www.noaa.gov).

Note: Sea surface temperatures in the Pacific Ocean are compared to the long-term average over a five-day period. The waters in the box-enclosed key monitoring region, which scientists call "the Niño-3.4 region," start out cooler than average (blue) and progressively become warmer than average (red) as La Niña ends and El Niño arrives. La Niña and El Niño are the cool and warm phases of a recurring climate pattern across the tropical Pacific, called the El Niño-Southern Oscillation (ENSO). La Niña and El Niño events typically recur every 2–7 years.

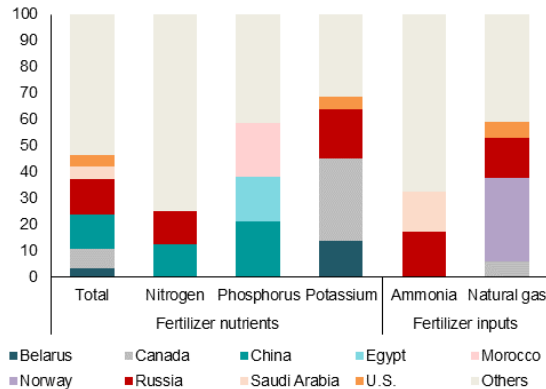
12. Going forward, depressed fertilizer usage could dampen domestic agricultural production and keep food prices elevated in the ASEAN+3. Modelling estimates by [Gro Intelligence](#) indicate that a 5 percent reduction in fertilizer application rates within one year leads to a 1–2 percent decline in corn and rice production in most ASEAN+3 economies (Table 1). Already, reduced fertilizer usage due to high import costs—alongside factors such as adverse weather conditions—has led to lower harvests and increases in international sugar and rice prices this year, which are also feeding into retail prices in Indonesia, Thailand, Singapore, Philippines ([FAO 2023](#)) (Figures 9 and 14). If not mitigated, rising sugar and rice prices could keep food inflation elevated, as sugar is an input for several processed food products while rice is a consumer staple in Asia.

Figure 9. World: Fertilizer, Cereal and Sugar Prices
(Index 2019 = 100)



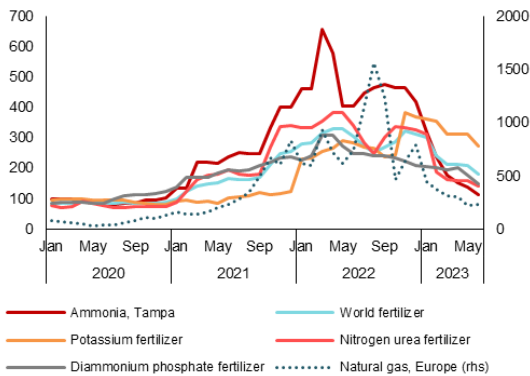
Sources: FAO, IMF, and International Grains Council, all via Haver Analytics.

Figure 10. Major Exporters: Fertilizer Nutrients and Inputs, 2021
(Percent of total)



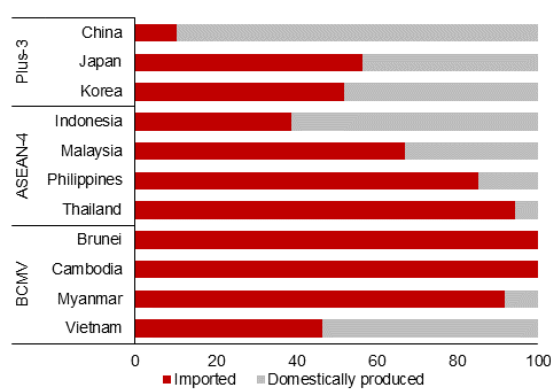
Source: The Observatory of Economic Complexity.
Note: Natural gas is in gaseous form, used to produce fertilizers.

Figure 11. Global Prices of Fertilizer Types and Fertilizer Inputs
(2019=100)



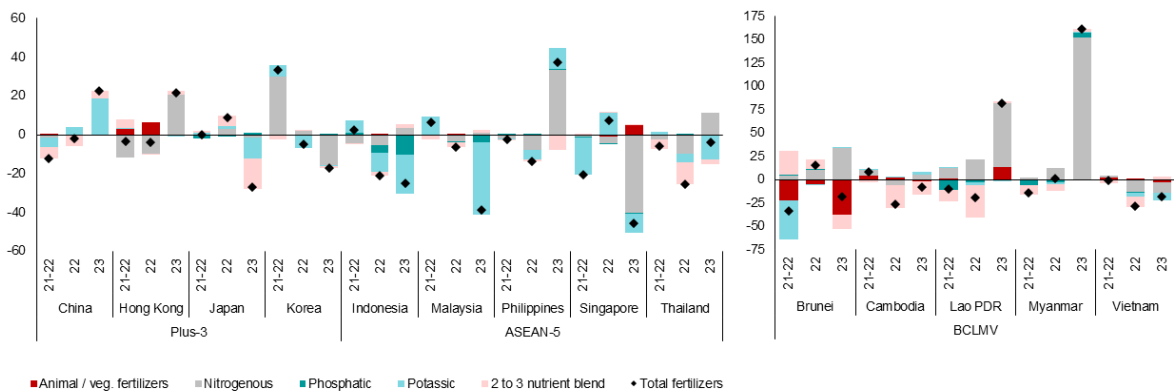
Sources: Bloomberg Finance LP; and IMF via Haver Analytics.
Note: Ammonia price is from Bloomberg, the rest from IMF.

Figure 12. ASEAN+3: Share of Imported Fertilizers to Domestic Consumption
(Percent of total)



Source: FAO via Haver Analytics.
Note: Data refer to the average for 2018–20 period, unavailable for Lao PDR, Hong Kong and Singapore.

Figure 13. ASEAN+3: Fertilizer Import Volume by Type
(Percentage points)



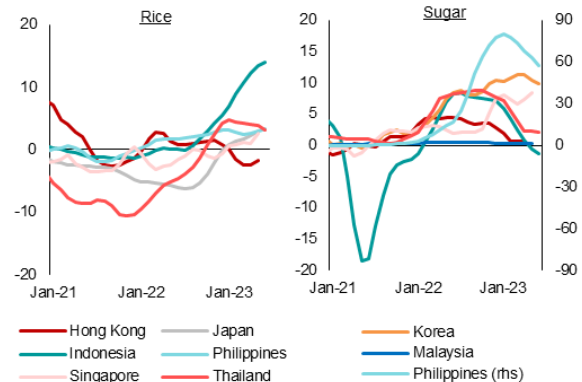
Sources: S&P Global Market Intelligence Global Trade Atlas; and AMRO staff estimates.
Note: The 21-22 figures refer to the percentage change of the average fertilizer import volumes in 2021 and 2022 relative to the average fertilizer import volumes in 2018 and 2019 (proxy for pre-pandemic period). The 22 figures refer to the percentage change of fertilizer import volumes in 2022 relative to the amounts in 2021. 23 refers to data until May 2023, except for Indonesia and Malaysia (until April), the Philippines (March); and Brunei (February).

Table 1. ASEAN+3: Production Impact from a 5 Percent Reduction in Nitrogen Fertilizer Application (Percent)

	Total*	Corn	Rice	Soybeans	Wheat
China	-2.39	-2.10	-1.73	-0.50	-3.71
Plus-3					
Japan	-2.24	0.00	-1.94	-0.54	-3.96
Korea	-0.05	0.00	0.00	-0.60	-4.13
ASEAN-4					
Indonesia	-1.91	-2.10	-1.82	-0.51	-
Malaysia	-1.82	-2.19	-1.81	-	-
Philippines	-2.00	-2.17	-1.84	-0.33	-
Thailand	-1.96	-2.16	-1.89	-	-
Brunei	0.00	-	0.00	-	-
Cambodia	-1.35	-1.65	-1.30	-	-
BCLMV					
Lao PDR	-1.04	-1.26	-0.96	-	-
Myanmar	-1.50	-1.80	-1.42	-0.20	-1.69
Vietnam	-1.92	-2.12	-1.87	-0.57	-

Sources: [Gro Intelligence](#); and AMRO staff compilations.
 Note: *Refers to the change in total caloric equivalents for each crop indicated above. Production changes for each crop are based on metric tons. Gro Intelligence does not provide analysis for Hong Kong and Singapore. Results are based on November 2022 data.

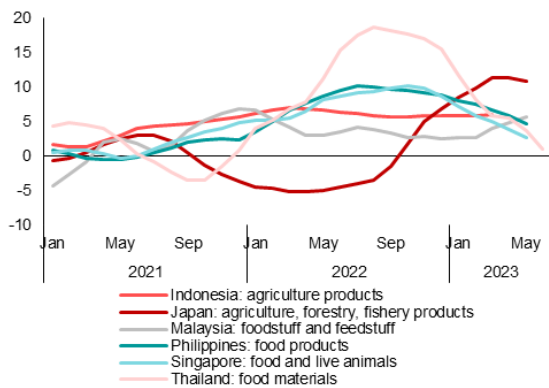
Figure 14. Selected ASEAN+3: Consumer Prices of Rice and Sugar (Percent year-on-year, 3-month moving average)



Source: National authorities via Haver Analytics.
 Note: The figure only includes economies with available consumer price series for rice and sugar.

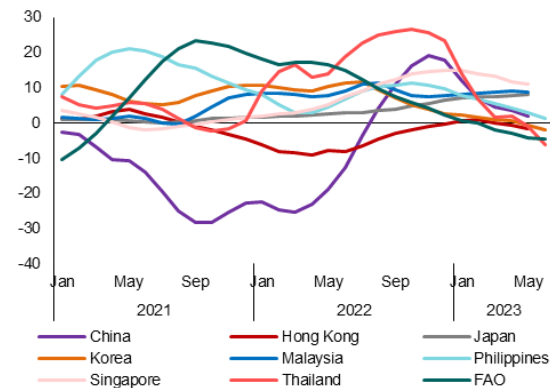
13. Domestic food production costs are still growing at a robust pace in several ASEAN+3 economies despite some easing of food inflation in recent months. Prices of agriculture products at the producer level continue to post strong increases in Japan, Indonesia, and the Philippines, while producer prices of foodstuff and feedstuff in Malaysia have gathered pace since the beginning of 2023 (Figure 15). These developments warrant monitoring as they could feed into consumer prices. For one, negative shocks to grain output can push up feed costs, with delayed effects on meat and dairy production—ranging from 2 months for poultry meat to 2 years for beef production ([Stillman, Haley, and Matthews 2009](#)). Year-to-date meat prices have either fallen or softened pace in several ASEAN+3 economies in line with global trends, but their pace of increases continue to hold up in Malaysia, Japan, and Singapore as local currency depreciations have added to the increase in the cost of imported animal feed (Figure 16) ([Gerden 2023](#); [Yeoh 2023](#)).

Figure 15. Selected ASEAN+3: Producer Prices of Agriculture Products (Percent year-on-year, 3-month moving average)



Sources: National authorities via Haver Analytics.
 Note: The figure only includes economies with available data.

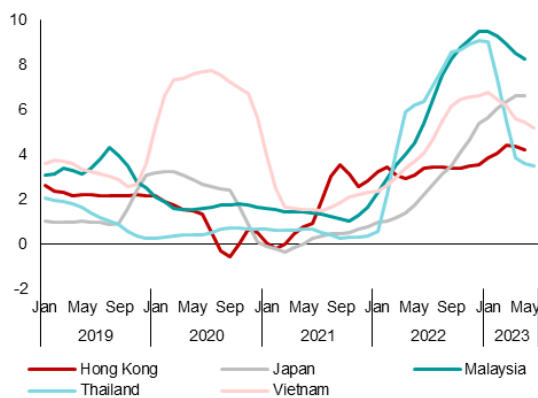
Figure 16. Selected ASEAN+3: Consumer Prices of Meat (Percent year-on-year, 3-month moving average)



Sources: National authorities via Haver Analytics.
 Note: The figure only includes economies with available consumer price series for meat.

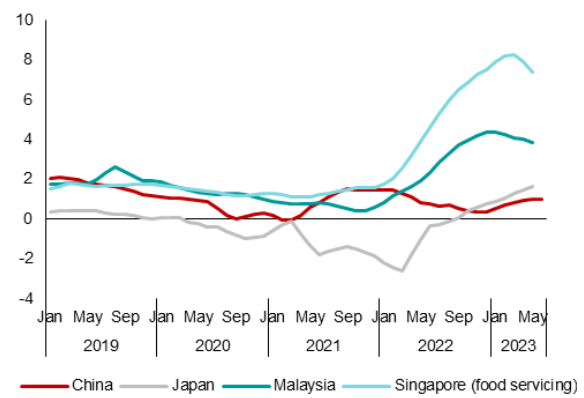
14. **Aside from cost and supply-side factors, ASEAN+3 inflation also faces upside risks from strong consumer demand.** Demand-driven price pressures are evident in the surge in consumer price inflation for services and food consumed outside the home or at commercial food establishments, as in the case with Japan, Malaysia, and Singapore since mid-2022 (Figures 17 and 18). These trends reflect, in part, robust private consumption following the lifting of mobility restrictions and the shift to COVID-19 endemicity. Such observations are confirmed by our econometric analysis, where both demand and supply shocks are shown to have prominent roles in driving food and headline inflation dynamics for Malaysia and the Philippines in 2022 through Q1 2023 (Figures 19 and 20).

Figure 17. Selected ASEAN+3: Prices of Food Consumed Away from Home
(Percent year-over-year, 3-month moving average)



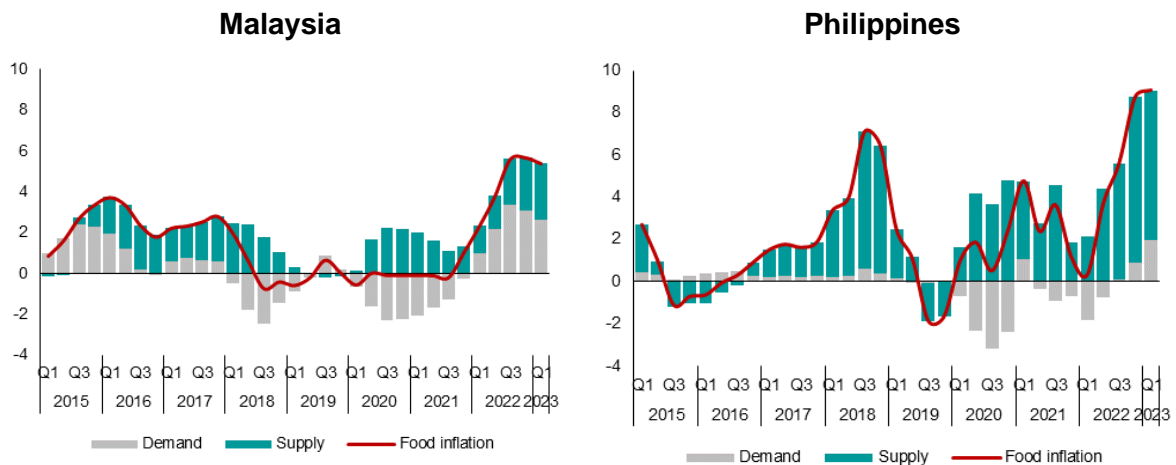
Sources: National authorities via Haver Analytics.
Note: The figure only includes economies with available data.

Figure 18. Selected ASEAN+3: Prices of Consumer Services
(Percent year-over-year, 3-month moving average)



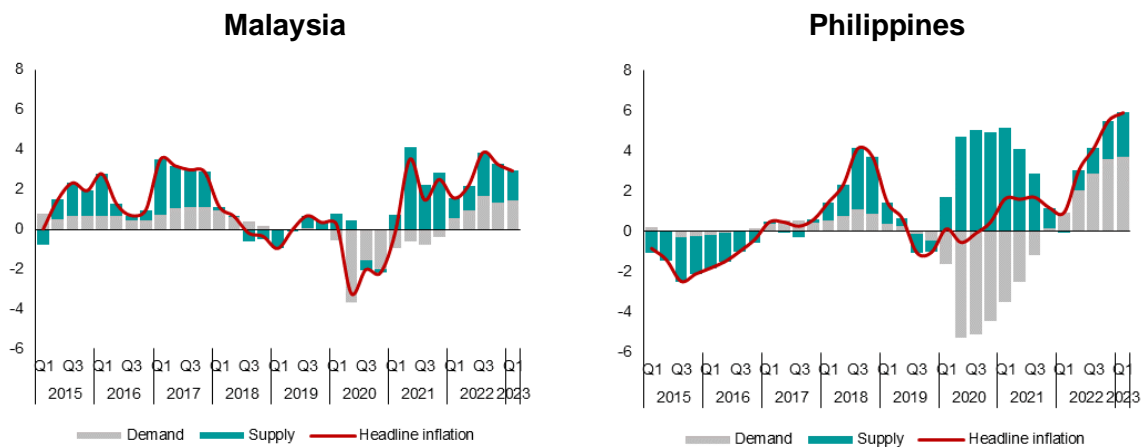
Sources: National authorities via Haver Analytics.
Note: The figure only includes economies with available data.

Figure 19. Malaysia and Philippines: Historical Decomposition of Food Inflation by Demand and Supply Shocks
(Percentage points, Index 2019=0)



Sources: National authorities via Haver Analytics; and AMRO staff estimates.
Note: The contribution of demand and supply shocks to inflation is quantified using a sign-restricted vector autoregression model with two variables: output gap (detrended real GDP using the Hodrick-Prescott filter) and inflation rate. The shocks are identified following the assumption that demand shocks push up output and inflation, whereas supply shocks lower output but push up inflation. Data are in quarterly frequency. Malaysia's food inflation model has a lag order of five following the Schwarz and Hannan-Quinn information criteria, whereas the Philippine model has an order of six following the Akaike information criterion. [Copestake \(2023\)](#) provides a detailed explanation of the estimation technique.

Figure 20. Malaysia and Philippines: Historical Decomposition of Headline Inflation by Demand and Supply Shocks
(Percentage points, 2019=0)



Sources: National authorities via Haver Analytics; and AMRO staff estimates.

Note: The contribution of demand and supply shocks to inflation is quantified using a sign-restricted vector autoregression model with two variables: output gap (detrended real GDP using the Hodrick-Prescott filter) and inflation rate. The shocks are identified following the assumption that demand shocks push up output and inflation, whereas supply shocks lower output but push up inflation. Data are in quarterly frequency. The two country models have a lag order of two as suggested by the Schwarz information criteria, and in line with Copestake (2023) but with year-on-year growth rates of global crude oil and food prices as additional exogenous variables.

IV. Policy Considerations

15. Inflationary pressures in the ASEAN+3 region could potentially arise from either tight supply or strong demand for food and food-related commodities. Although global food and energy commodity prices have fallen drastically from the highs in Q2 2022, multiple factors—from commodity supply constraints related to the Russia-Ukraine crisis, El Niño weather conditions, and affordability of fertilizers to the rebound in domestic demand following the lifting of COVID-19 containment measures—could surprise domestic inflation on the upside. Against this backdrop, a mix of administrative and monetary policy measures can be deployed to manage potential price pressures.

16. Monetary authorities in the ASEAN+3 would have to maintain their hawkish stance despite having raised policy rates since early 2022 in response to higher inflation. At this point in the inflation cycle, it is critical that monetary authorities maintain a tightening bias until underlying price pressures have clearly stabilized. Bloomberg data, for instance, show financial market traders pricing in another 25-basis point hike by the Bank of Thailand, and with a lower probability, the Bank of Korea and Bangko Sentral ng Pilipinas, within the next 3–6 months. Upside risks to inflation, recovering economic activity, and exchange rate stability are cited as key factors behind analysts' rate hike expectations and the hawkish position adopted by central banks (Banchongduang 2023; BusinessWorld 2023; Huh 2023). Market participants also expect the US Federal Reserve to raise rates by at least 25 basis points within the next three months to diffuse demand-driven inflation (Mena 2023).

17. Broad-based administrative measures have been critical in providing relief to inflation in the ASEAN+3 region, but they should be withdrawn once price pressures abate. Many ASEAN+3 economies have counted on price controls as well as subsidies and social assistance to manage the surge in food prices.⁷ Governments in several food commodity exporting countries in the region also introduced export restrictions to build

⁷ Tan, Choo, and Chong (2022) provide a list of measures implemented in the ASEAN+3 during 2021–22.

domestic buffer stocks following the food price spike in Q2 2022, such as Indonesia with its ban on palm oil exports in April–May 2022 and Malaysia with its ban on poultry exports in May 2022–July 2023. These measures can be beneficial in the short term, as they limit the pass-through of global price shocks to consumer prices and alleviate cost-of-living pressures. However, they can incur heavy fiscal burdens and discourage investment in the food-producing sector over the medium to long term, leading to a spiral of rising prices. Thus, such policies should be temporary, with a view to replacing them with targeted social assistance.

18. Over the medium term, supply-side policies would be crucial in strengthening food security and domestic resilience against global commodity shocks. In particular, concerted efforts are needed to enhance agricultural productivity and reduce reliance on imported fertilizers and food commodities. To this end, incentives and greater access to credit can facilitate investments in smart and climate-resilient agriculture technologies as well as efficient and resilient food supply chains. The inherent risks involved in agricultural production requires the need for risk-sharing, which can be achieved by promoting widespread adoption of agriculture insurance schemes and the government subsidizing insurance premia of small-scale farmers. And while the global supply of fertilizers is concentrated among a few economies, providing limited scope for import diversification, national authorities can forge cooperation agreements with external parties to ensure reliable supply at affordable rates, while taking steps to improve domestic production.

19. Regional cooperation, through resource sharing and risk management, can bolster food security, especially among the low-income economies disproportionately affected by the food crisis. An example is the ASEAN Plus Three Emergency Rice Reserve (APTERR) that serves as a regional mechanism for sharing and analyzing market information and coordinating the supply of rice to affected member economies in the event of calamities and other emergency situations. APTERR's effectiveness can be enhanced by increasing the current size of earmarked reserves ([Briones 2012](#)). At the same time, ASEAN+3 governments can leverage on the APTERR framework to create an emergency reserve pooling system for other food items and related commodities, such as fertilizers.

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