



The Conflict in the Persian Gulf Compared to Previous Food Price Crises

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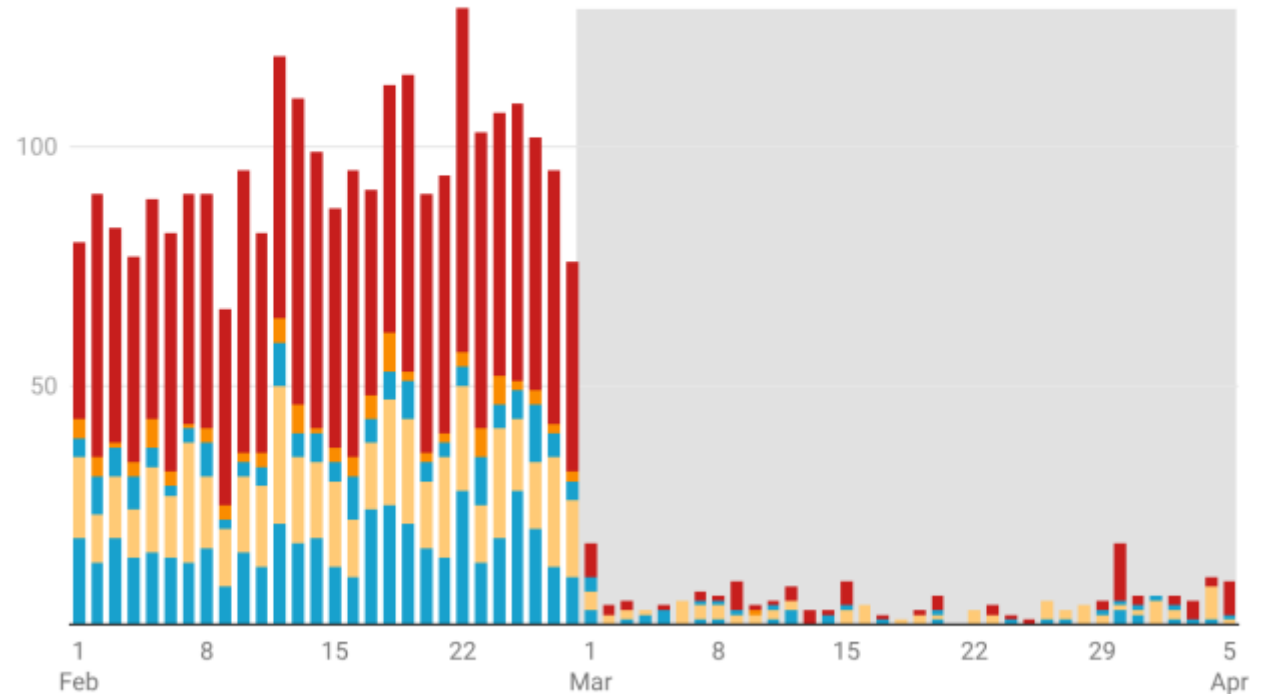
Disruption in oil and fertilizer markets

- Strait of Hormuz:
 - 25-30% of world oil exports
 - 20% of liquified natural gas exports
 - Nitrogen, Phosphate, Sulphur
- Almost 90% decline in shipping since the attacks began
- Iran had been allowing some oil tankers to transit
- Ceasefire, now US blockade?
- What happens next?

Arrivals of ships through Strait of Hormuz

Number of ships

Container Dry Bulk General Cargo Roll-on/roll-off Tanker



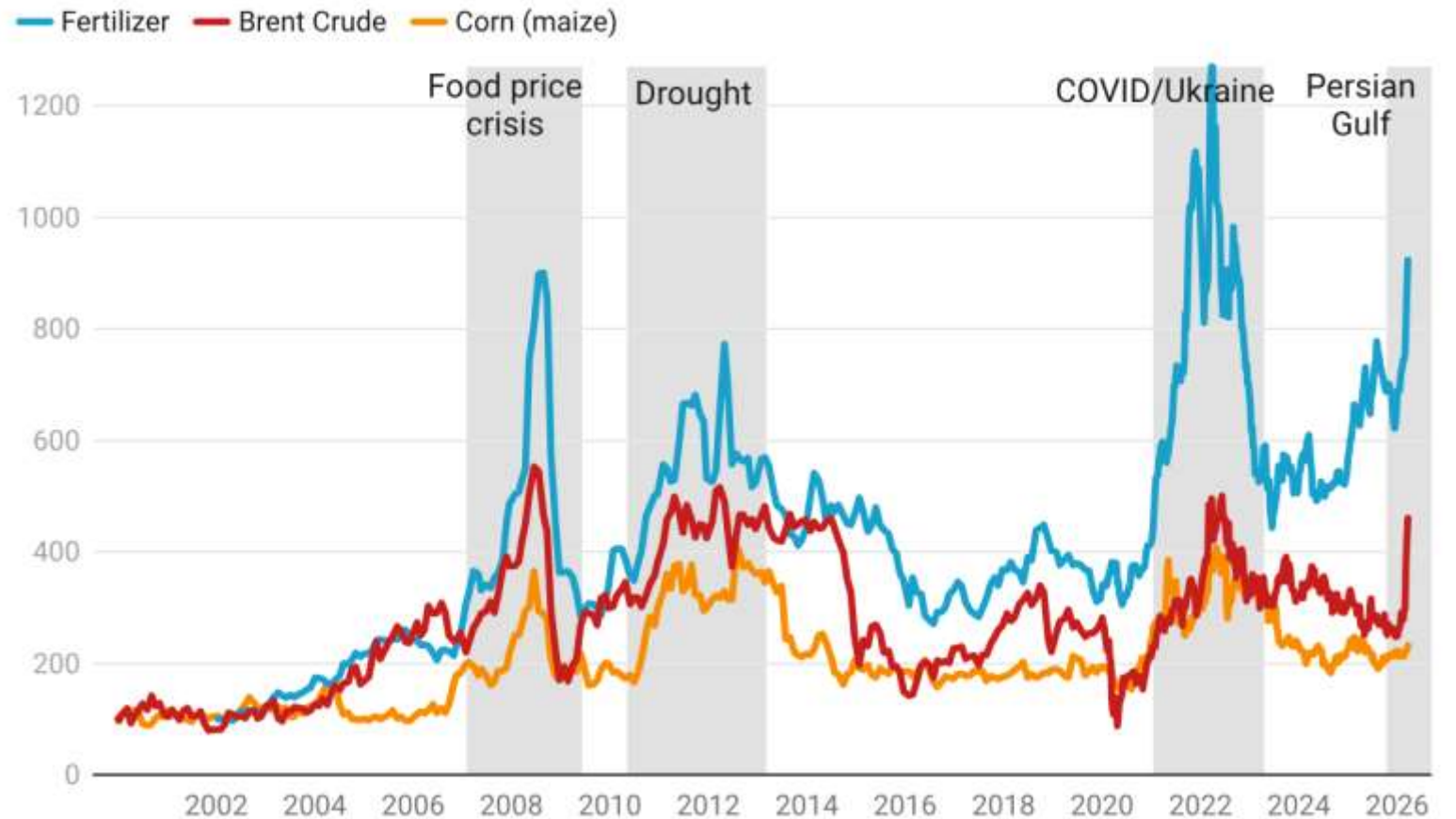
IMF Portwatch database

Prices

- Energy and fertilizer prices rise following closure of the Strait of Hormuz
- Below 2022 highs (thus far)
- Crop price movements remain constrained (at least for now)

Energy, grain and fertilizer price movements

January 2000 = 100



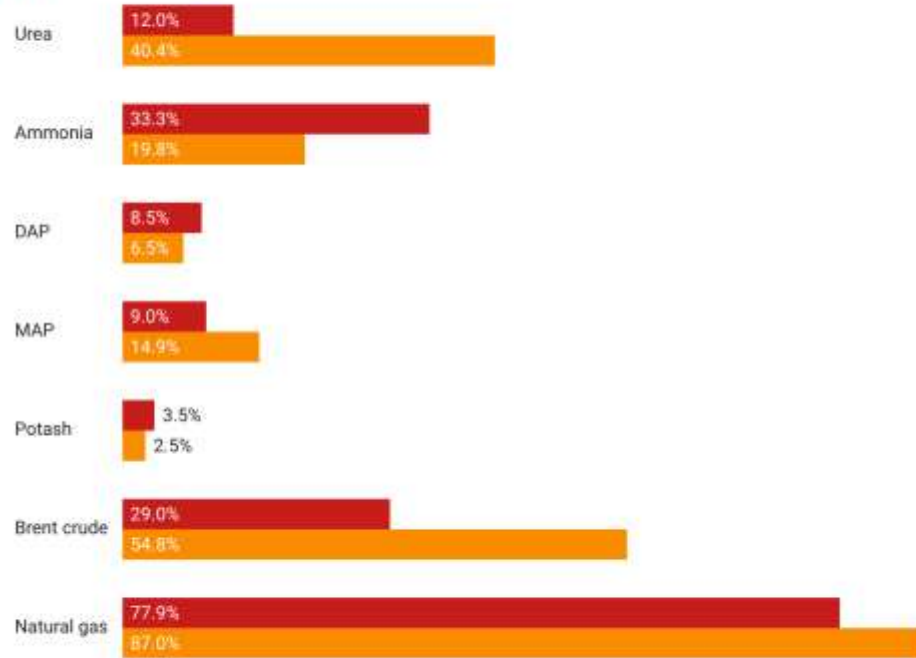
Source: Bloomberg

Energy and fertilizer prices rise; minimal impacts on grains and oilseeds

2022 Ukraine war versus 2026 Iran war: fertilizer and energy price impacts

Price change (%)

2022 Ukraine war 2026 Iran war



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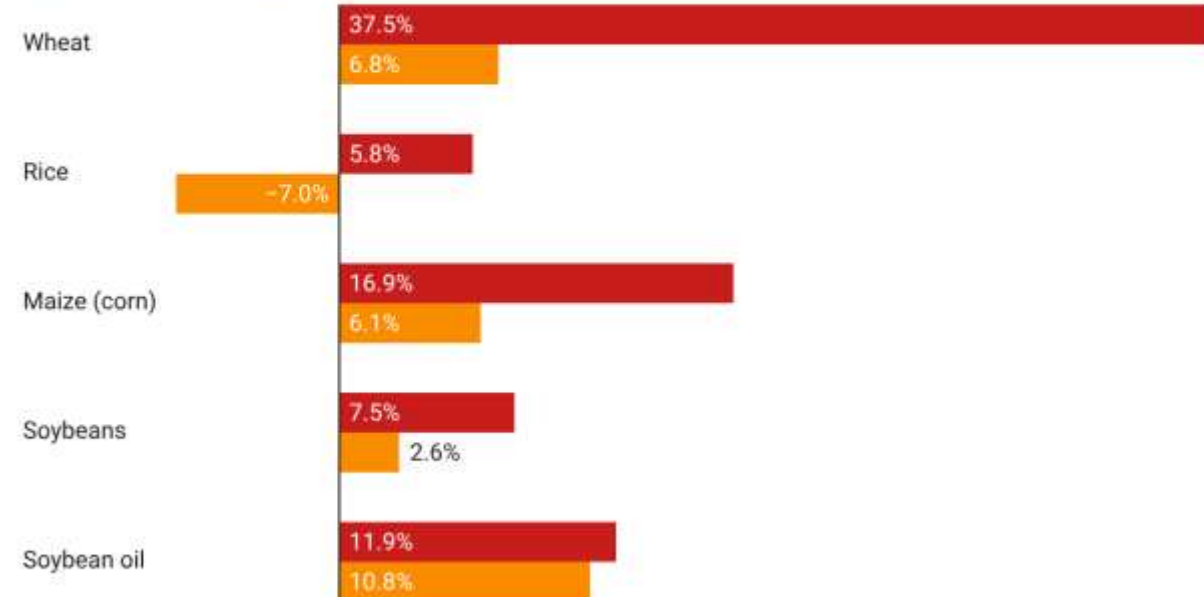
Price impacts after first three weeks of war.

Source: Authors calculations using data from CME Group, Bloomberg, S&P Global Trade Atlas and Green Markets

2022 Ukraine war versus 2026 Iran war: grain and oilseed price impacts

Price change (%)

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Previous food price spikes

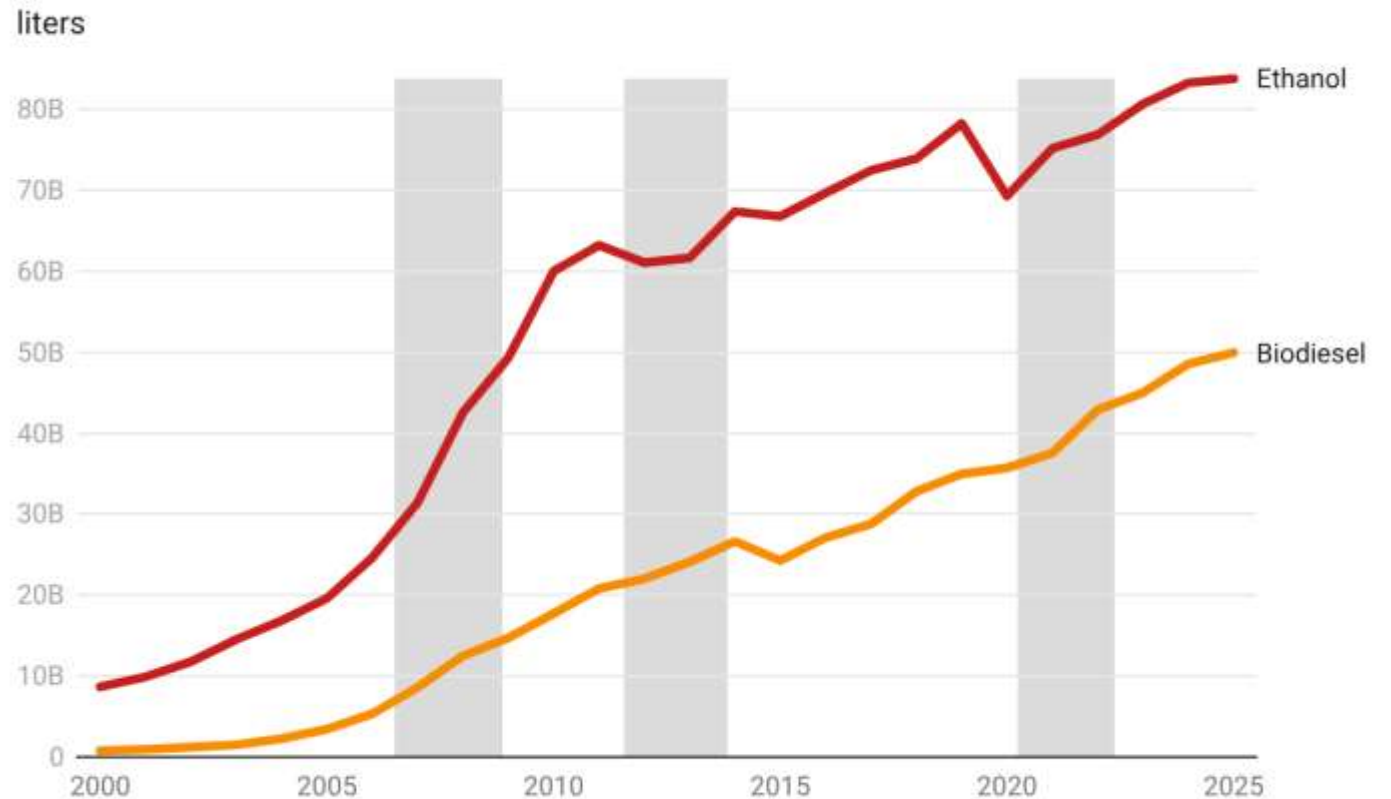
- Number of factors present in previous food price spikes
 - Demand shocks (China, biofuels)
 - Supply shocks (droughts)
 - Macroeconomic (weak dollar)
 - Policy actions (export restrictions)
- Current crisis largely restricted to closure of Strait of Hormuz

	Food price crisis 2007-2008	Global droughts 2010-2012	COVID/Russia invasion of Ukraine 2020-2022	Iran war/closure of Strait of Hormuz 2026-Today
Demand shocks	US biofuel growth China soybean demand growth	Steady China soybean demand	China feed demand (post ASF)	Flat global feed demand
Supply shocks	Australian droughts reduce wheat crop	Triple La Nina; US drought	La Nina impact on S. America soybean and corn	Favorable growing conditions; El Nino
Physical stocks	Corn, wheat, rice tight s/u	Tight feed grains and soybeans	Ample stocks	Ample stocks
Macroeconomic	Weak US dollar	Weak US dollar	Weak US dollar	Relatively strong US dollar
Geopolitical	Export bans Argentina; Russia; India	Russia export ban	Black Sea disruption. Indonesia ban on vegetable oils (short-lived)	Hormuz closure. Restrictions on fertilizer sales (China)

Biofuels

- Rapid ethanol expansion in US, 2005-11.
- More gradual expansion since then (BZ maize ethanol; US E15; India)
- Biodiesel expansion
 - Slowing growth in EU
 - Renewable biodiesel in US, Brazil
 - Indonesia B50 mandates
- Impact of high oil prices on biofuel

Global biofuel production

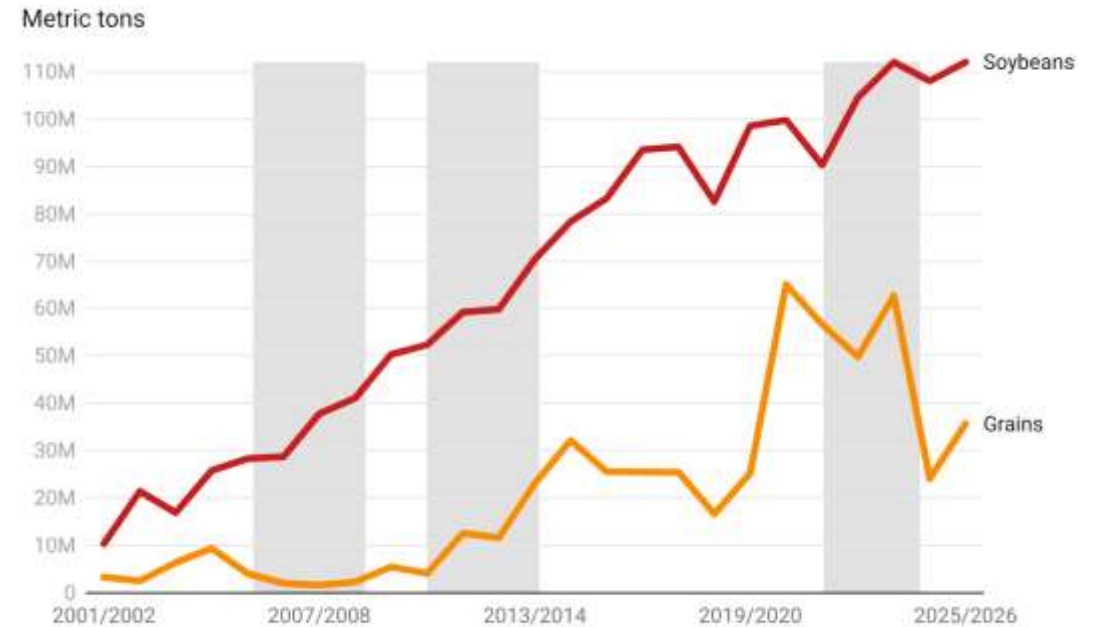


Source: OECD Data Explorer, <https://data-explorer.oecd.org>

China import demand

- Soybeans:
 - Rapid soybean import growth 2000–2015–15%/year
 - Since 2015–2%/year
- Grains:
 - ASF precipitated increase in hog consolidation, decline in “backyard” production
 - Increased demand for compound feeds
 - Increase (temporary) in feed grain imports

China grain and oilseed imports

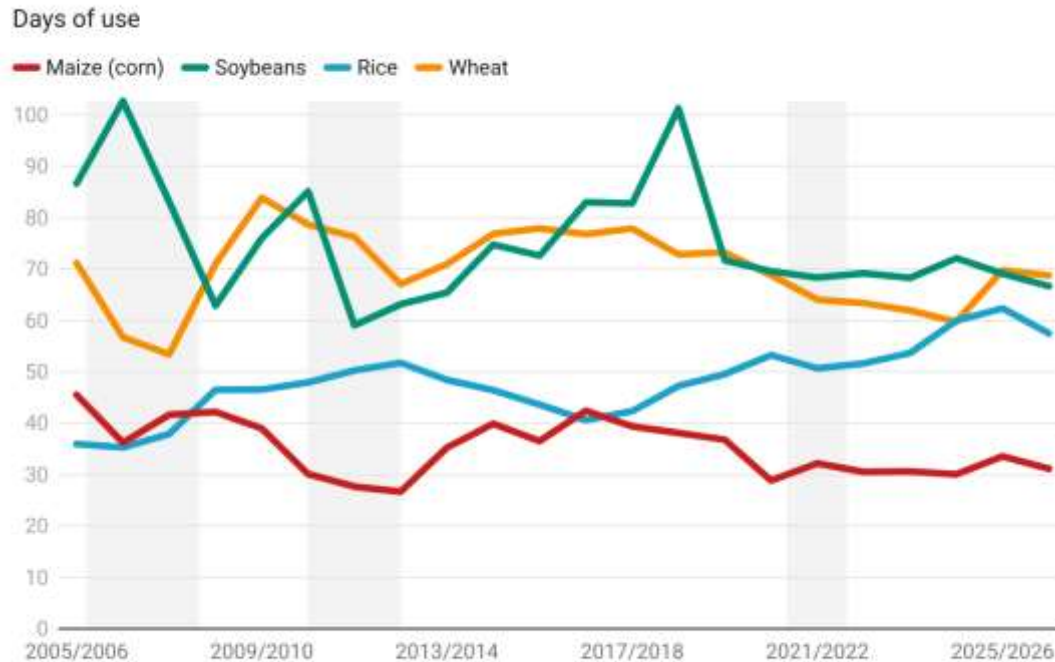


Grains include barley, maize (corn), rice, sorghum and wheat.

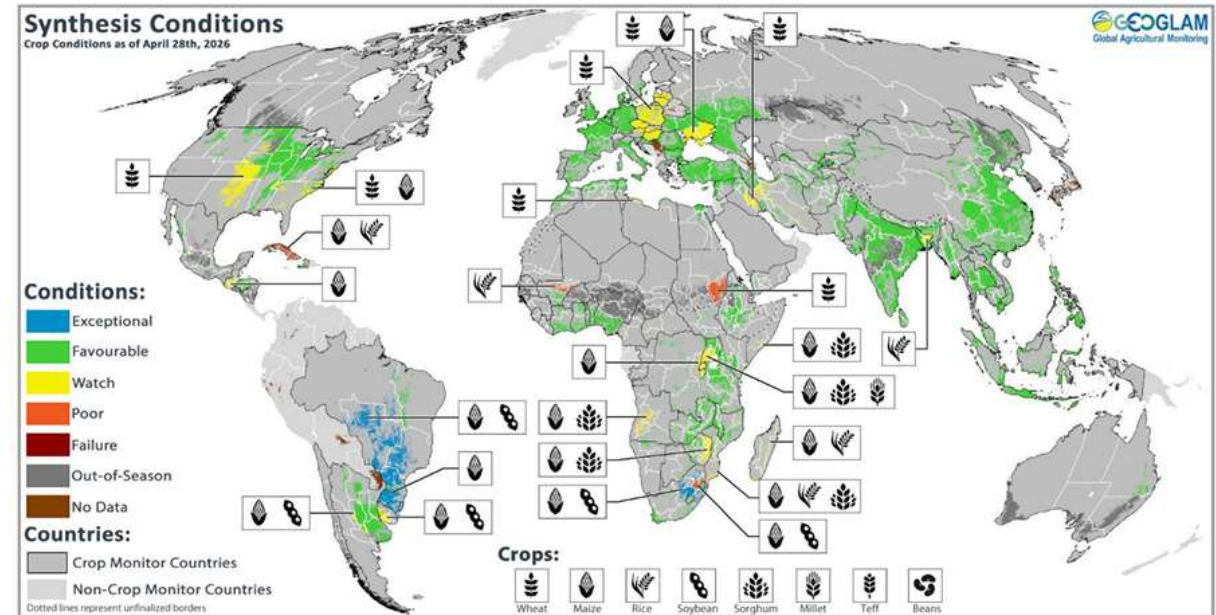
Source: U.S. Department of Agriculture, Foreign Agricultural Service, PSD database

Grain and oilseed supply outlook

Global grain stocks



Days of use = Stocks-to-use ratio X 365 days. Stocks exclude China.
 Source: US Department of Agriculture, Foreign Agricultural Service PSD database



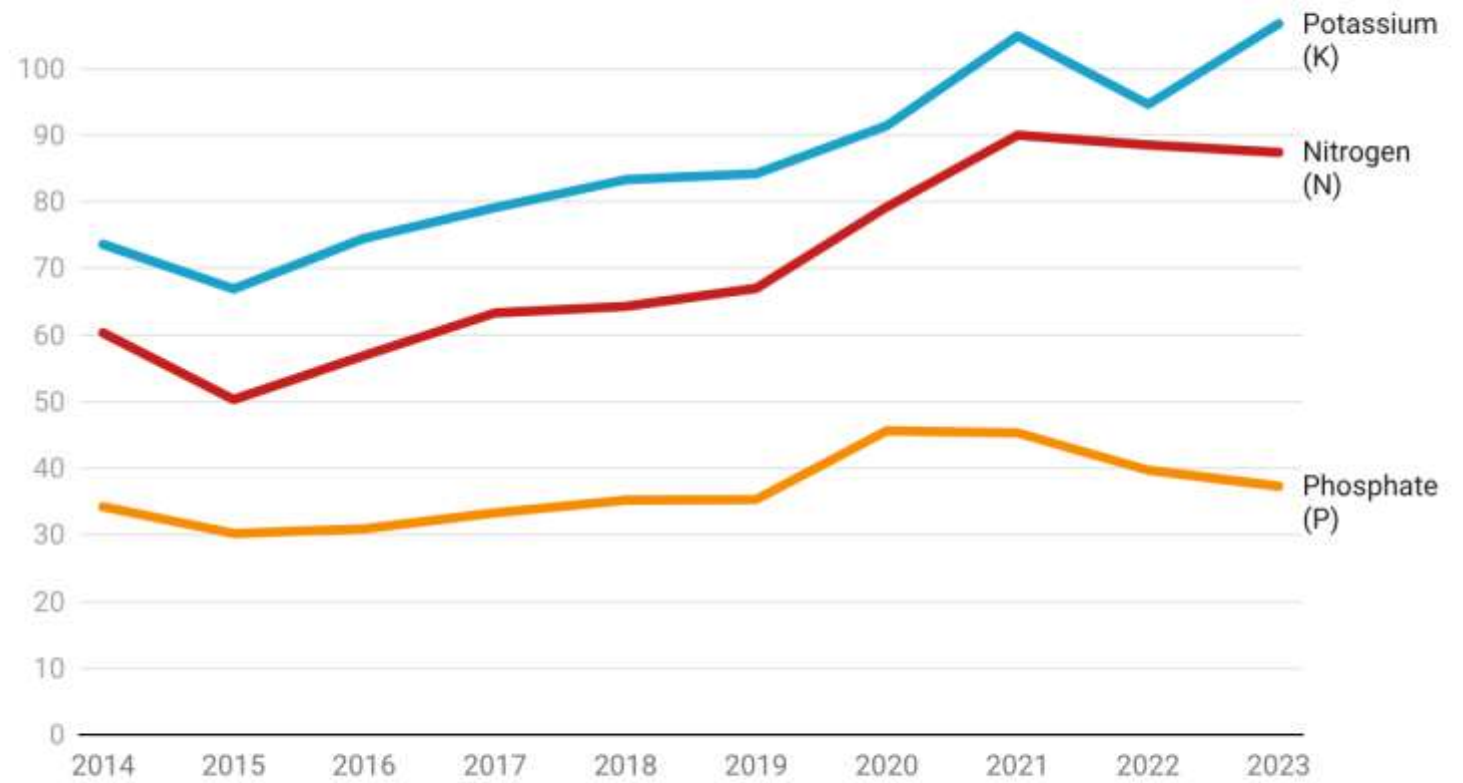
Crop conditions across the main growing areas are based on inputs, including remotely sensed data, ground observations, field reports, and input from national and regional experts. Regions with conditions other than favourable are labelled on the map with a symbol representing the affected crop(s).

prices on input use and production

- Crop choice: In 2022, maize area fell by about 4.9 mil ha while soybean area increased by 5.7 million ha.
- Input use: In 2022,
 - Nitrogen use -1.7%
 - Phosphate use -12.5%
 - Potassium use -10.0%
- Global yield impacts were minimal in 2022
- Nitrogen supply is a bigger problem in 2026 than 2022
- 2nd half of the year could be more problematic if closure continues

Brazil fertilizer application rates

Kg/Ha



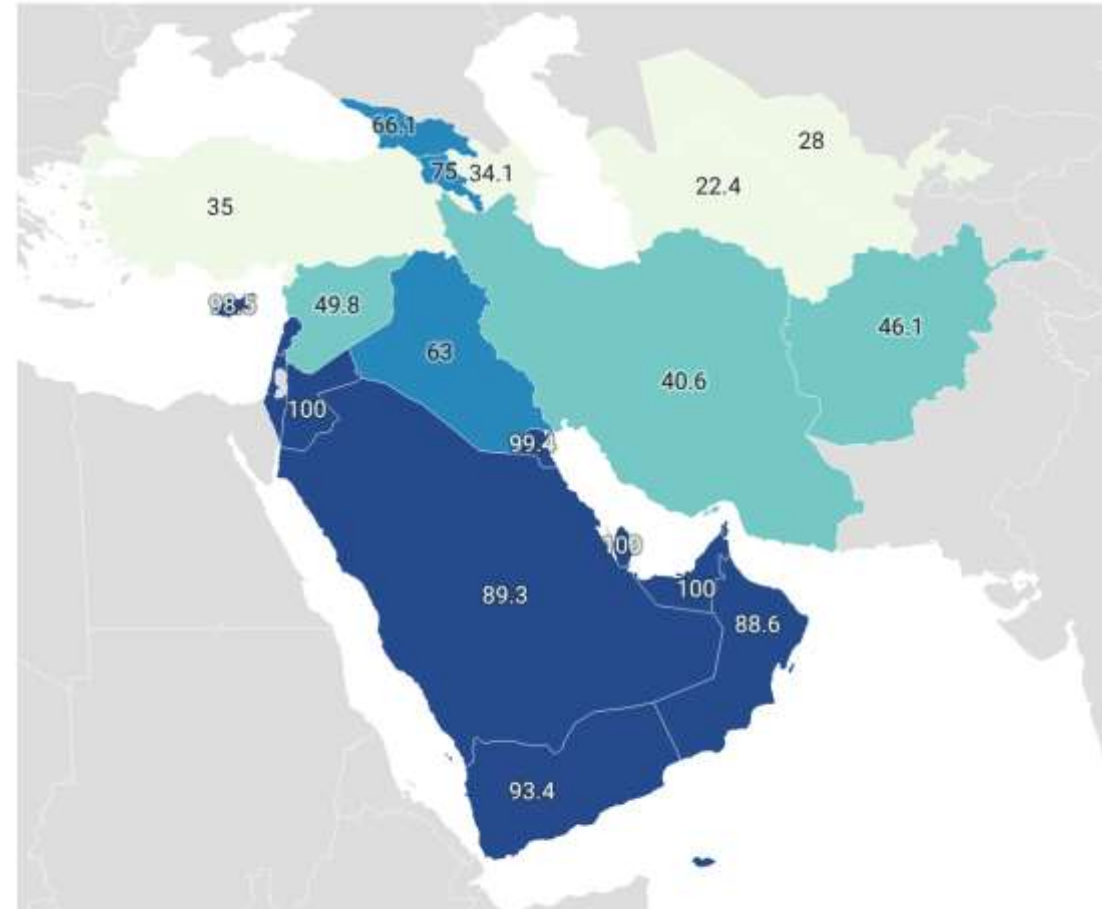
Source: FAOSTAT

ons for regional food security

- High dependence on imports to meet grain and oilseed needs.
- Much of the imports transit to the region via the Straits of Hormuz
- Alternative routes:
 - Saudi Arabia–Suez Canal
 - Iraq via Turkey/Syria
 - Iran via Caspian Sea

Cereal import dependence in Persian Gulf Region

Percentage



2021-2023 average

Source: FAOSTAT

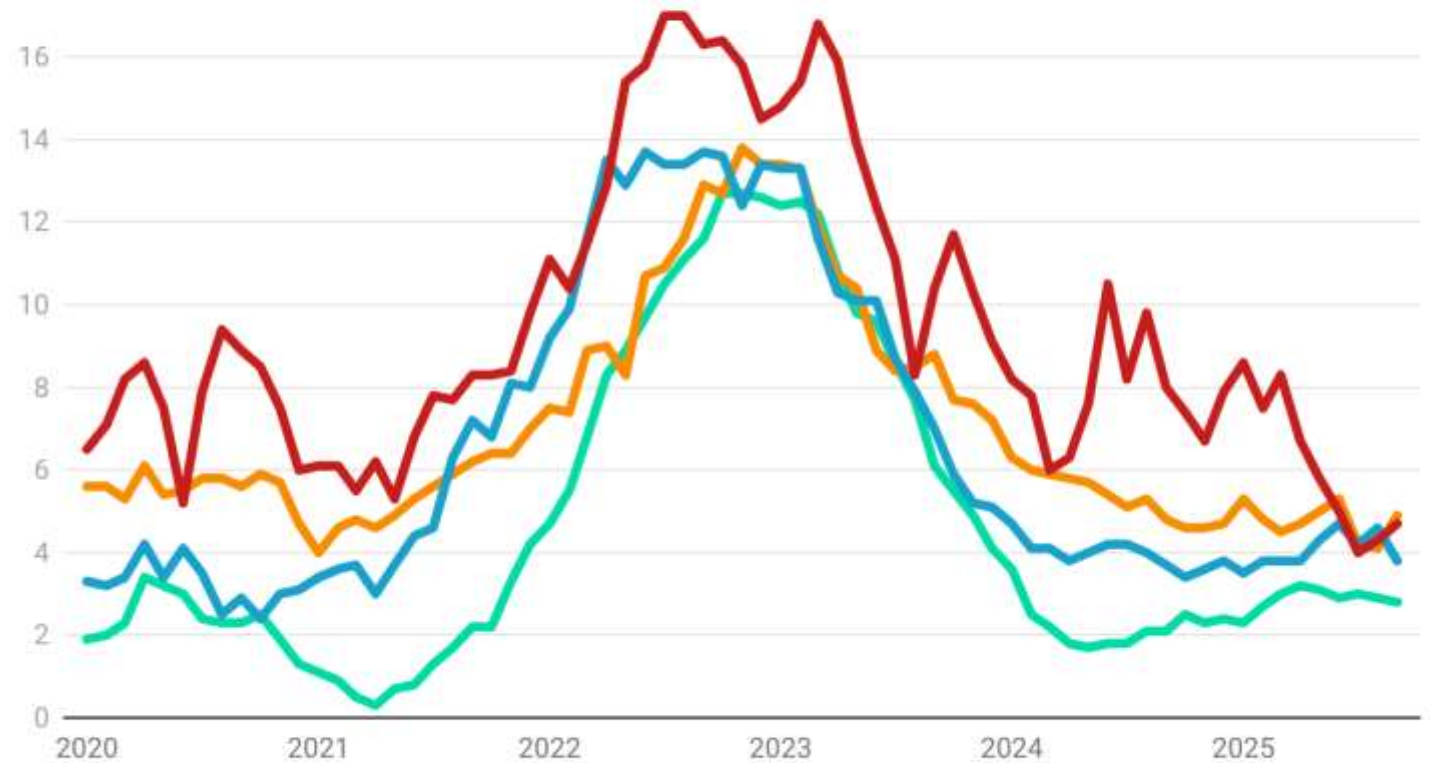
price inflati on

- Sustained higher energy and shipping costs would likely fuel higher consumer prices.
- Energy costs are embedded throughout the food value chain (farm, transportation, processing, refrigeration, etc)
- Could reignite food inflation concerns.

Food inflation

Year-over-year change in food prices (%)

— Low-income economies — Lower-middle-income economies — Upper-middle-income economies — High-income economies



Based on the median inflation rate within each grouping.

Source: FAOSTAT

Caveats



- Prolonged closure of the Strait and/or expanded conflict beyond the Gulf
- Large increase in biodiesel production in response to high oil prices
- Export restrictions by major fertilizer exporters (eg, Russia, China)
- Drought affecting major production