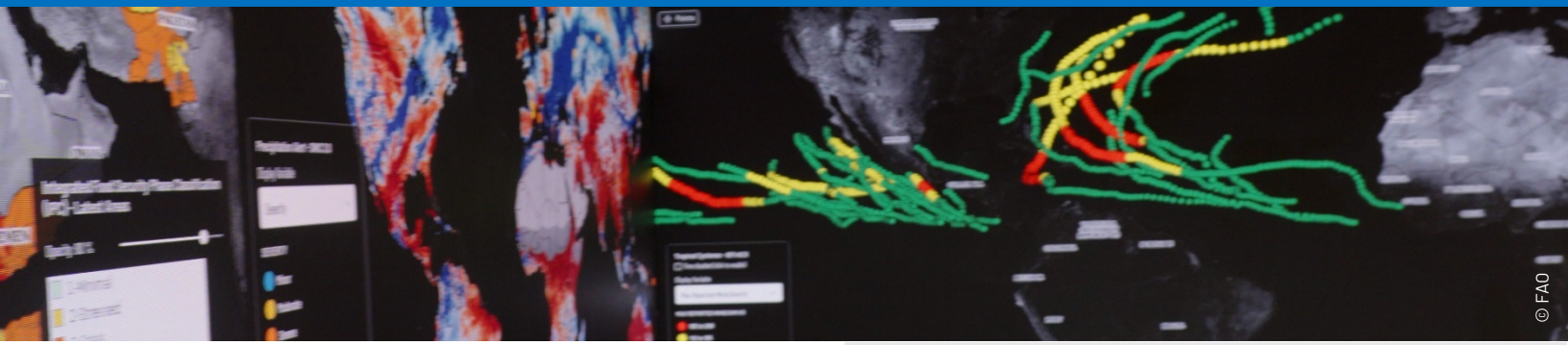
Food and Agriculture Organization of the United Nations

INFORMATION NOTE

15 March 2026



GLOBAL AGRIFOOD IMPLICATIONS OF THE 2026 CONFLICT IN THE MIDDLE EAST

Impacts on energy and fertilizer trade, and food security

EXECUTIVE SUMMARY

1. The conflict that erupted in the Persian Gulf in February 2026 has generated a major shock to global energy, fertilizer, and agrifood systems. A central factor is the disruption of trade through the Strait of Hormuz, a strategic maritime corridor linking Gulf energy producers with global markets. Under normal conditions, the strait carries around 20 million barrels of crude oil and refined products per day — roughly one-quarter of global seaborne oil — along with significant volumes of liquefied natural gas (LNG) and fertilizer exports.
2. Within days of the conflict, tanker traffic through the strait collapsed by more than 90 percent, severely restricting shipments. This disruption rapidly transmitted volatility to global energy markets and the global agrifood system.

KEY MESSAGES

- The escalation of conflict in the Islamic Republic of Iran and the Middle East has sharply increased risks to global energy, fertilizer, and agrifood systems.
- The Strait of Hormuz, a critical chokepoint for oil, gas, and fertilizers, has already seen disruptions that are raising energy and agricultural input costs worldwide.
- Fertilizer shortages and higher energy prices threaten crop yields, while remittance losses and potential shifts to biofuel production could amplify food price volatility, particularly in Africa, Asia, and other import-dependent regions.
- Immediate measures such as developing alternative trade routes, strengthening market monitoring, providing financial support for farmers, and offering targeted aid for vulnerable countries are needed to stabilize supply chains.
- Longer-term strategies should focus on domestic agriculture, sustainable fertilizer production, renewable energy, and structural adjustments, while diplomatic efforts to reopen the Strait of Hormuz remain essential to safeguard global energy and food security.

3. The Persian Gulf plays a central role in the global energy system. Countries in the region, including Bahrain, Iraq, the Islamic Republic of Iran, Kuwait, Qatar, Saudi Arabia, Oman and the United Arab Emirates, account for a large share of global oil and gas exports. Approximately one fifth of global LNG exports originate in the Gulf. The region is also a key supplier of refined fuels such as liquefied petroleum gas (LPG), diesel and jet fuel.
4. As maritime risks increased and insurance costs surged, shipping activity through the Strait of Hormuz dropped sharply, forcing producers to reduce output. By early March, export volumes through the corridor had fallen to less than 10 percent of pre-conflict levels, leaving an estimated 10 million barrels per day of oil production temporarily shut in because of export constraints.
5. Global markets reacted immediately. Oil prices rose rapidly as traders incorporated a substantial geopolitical risk premium to market expectations. Brent crude prices increased by about 20–35 percent in the first days of the conflict, briefly reaching around USD 115–120 per barrel, while US benchmark prices rose above USD 100 per barrel.
6. Natural gas markets experienced even stronger movements, particularly in Europe, where benchmark prices increased by roughly 50–75 percent during the first weeks of the crisis. These developments have tightened global energy markets and increased costs across transportation, industry, and agriculture.
7. Governments and international institutions have attempted to stabilize markets. On 11 March 2026 the International Energy Agency announced a coordinated release of approximately 400 million barrels from strategic petroleum reserves, the largest emergency stock release in its history. While the announcement helped calm markets, the volume released represents only about 20 days of normal Gulf oil supply. This underscores the limited capacity of emergency reserves to offset prolonged disruptions should the conflict persist.
8. Beyond energy, the Persian Gulf is also a major hub for global fertilizer production and exports. Countries such as the Islamic Republic of Iran, Qatar, Saudi Arabia, and Oman are among the world's leading exporters of nitrogen fertilizers, including urea and ammonia. In recent years the region has accounted for roughly 30–35 percent of global urea exports and around 20–30 percent of ammonia exports. Overall, up to 30 percent of internationally traded fertilizers normally transit the Strait of Hormuz. With maritime traffic severely disrupted and several production facilities damaged or temporarily closed due to security concerns, fertilizer supply chains have been heavily affected. Production cuts and shipping constraints have stalled an estimated 3–4 million tonnes of fertilizer trade per month.
9. Unlike oil, the fertilizer sector does not have internationally coordinated strategic reserves, making supply disruptions more difficult to manage. Prices have already increased significantly. In early March, Middle East granular urea prices rose by nearly 20 percent compared to late February levels, while other fertilizer prices, such as diammonium phosphate, also rose. Because nitrogen fertilizer production relies heavily on natural gas as a feedstock, the rise in energy prices has further amplified production costs. It is estimated that global fertilizer prices could average 15–20 percent higher during the first half of 2026 if the crisis continues.
10. These developments are beginning to affect global agricultural commodity markets. Rising fertilizer costs and higher fuel prices increase production expenses for farmers and may lead to reduced fertilizer use in many regions. Lower input application could result in lower crop yields later in the year and tighter global grain supplies.

11. At the same time, higher energy prices are increasing costs throughout agricultural supply chains, including farm operations, irrigation, transport, storage, and food processing.
12. Early signals in international markets indicate that prices for major food commodities such as wheat, rice, and vegetable oils have started to increase. The FAO Food Price Index remains below the peak levels recorded during the 2022 global food price spike following the war in Ukraine, but it has begun to rise again, reflecting renewed uncertainty in global commodity markets. Energy shocks also reinforce the link between fuel markets and agricultural commodities through biofuels. Higher oil prices increase the profitability of ethanol and biodiesel production, raising demand for feedstocks such as maize, soybean oil, and palm oil. As a result, volatility in energy markets can rapidly transmit to food markets.
13. Import-dependent countries in Asia, Africa and Latin America are particularly exposed to fertilizer shortages and rising input costs. Many African economies rely heavily on imported fertilizers from Gulf producers, and even moderate price increases can significantly reduce fertilizer use among smallholder farmers.
14. Similarly, commercial farmers in Latin America, already facing difficult market conditions with low commodity prices, may not be able to handle new increase in input costs and will have to reduce fertilizer use.
15. Lower fertilizer applications can reduce crop yields and increase food security risks directly and indirectly in vulnerable regions through local supply changes and future reduction of outputs in global breadbaskets. Higher energy prices also increase transport and logistics costs, raising the cost of food imports and further pressuring domestic food prices.
16. At the same time, the Gulf countries themselves face structural food security vulnerabilities. Despite their energy wealth, most Gulf States rely on imports for between 70 and 90 percent of their food supply, because domestic agricultural production is limited by water scarcity and climatic constraints. Disruptions to maritime trade routes therefore threaten the primary channel through which food reaches the region. Although Gulf governments maintain strategic food reserves that can cover several months of consumption, a prolonged disruption to shipping could strain supply chains and raise domestic food prices once reserves begin to decline.
17. The Islamic Republic of Iran faces particularly severe pressures because it is both directly affected by the conflict and vulnerable to macroeconomic instability. The conflict has disrupted imports of key staples and agricultural inputs, while worsening an already fragile economic environment characterized by currency depreciation and high inflation. The Islamic Republic of Iran relies on imports for essential foods and feed commodities, including wheat, maize, rice, and vegetable oils. The sharp depreciation of the Iranian currency has significantly increased the domestic cost of imported food and agricultural inputs. Wheat flour prices in Tehran rose by about 120 percent in a single month and nearly 200 percent compared to the previous year in early 2026. Rising import costs, logistics disruptions, and policy responses aimed at protecting domestic supply are accelerating food inflation and reducing household purchasing power.

18. The conflict may also generate broader economic effects beyond commodity markets. Gulf economies host millions of migrant workers from South Asia, Southeast Asia, and Africa who send home billions of dollars in remittances each year. If the conflict reduces economic activity in the region or forces workers to return home, remittance flows could decline significantly. This would reduce household incomes in several developing economies and compound the effects of rising food and energy prices.
19. The ongoing conflict in the Persian Gulf poses additional risks to global economic and food security. Disruptions in oil, gas, and fertilizer exports have already triggered price spikes, and prolonged instability could exacerbate inflation, slow growth, and destabilize markets worldwide. Countries heavily reliant on Gulf imports, particularly in Asia, Africa, and the Middle East, face compounded shocks as rising input costs undermine agricultural production, industrial output, and household purchasing power.
20. Fertilizer shortages and higher energy costs threaten crop yields, while tighter grain supplies could trigger cross-commodity price contagion, further raising food prices in low-income, import-dependent countries. At the same time, remittance flows from Gulf labour migrants are at risk, potentially reducing incomes for tens of millions of households, and a sustained shift toward biofuels could divert crops from food production, amplifying price volatility in 2027 and beyond.
21. Overall, the Persian Gulf conflict highlights the deep interconnections between energy markets, fertilizer supply chains, and global agrifood systems. A prolonged disruption to trade through the Strait of Hormuz could create cascading impacts across these sectors, raising production costs, tightening agricultural supply, and increasing food prices worldwide. While global food markets remain more stable than during previous crises, the current shock underscores the vulnerability of interconnected energy and agrifood systems and the importance of coordinated international action to stabilize markets, maintain open trade routes, and protect vulnerable populations from rising food insecurity.
22. A coordinated policy response is urgently needed to mitigate these risks and build resilience. In the short term, alternative trade routes, market monitoring, targeted support for vulnerable import-dependent countries, and financial assistance for farmers are critical to stabilize supply chains and protect populations. Medium-term strategies should prioritize diversification of import sources, regional coordination, and contingency planning, while long-term measures must focus on domestic agricultural expansion, sustainable fertilizer production, renewable energy investments, and structural adjustments to cope with persistent price volatility and biofuel-driven demand shifts. Diplomatic efforts to de-escalate tensions and ensure freedom of navigation in the Strait of Hormuz remain the single most effective way to stabilize global energy and food markets, complementing these multi-layered interventions.

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The ongoing conflict in the Persian Gulf, involving the Islamic Republic of Iran and other regional actors, has severely disrupted critical energy and commodity flows. This note provides a comprehensive analysis of the conflict's impacts across six key thematic areas: (1) the role of Gulf countries in energy and fertilizer markets and the impact of supply disruptions; (2) global repercussions of the regional conflict, especially for partners involved in fertilizers and food trade with the Gulf countries; (3) threats to food security within Gulf countries; and (4) forward looking analysis, and policy recommendations to mitigate existing challenges and address emerging risks. Each section presents the most important insights first, supported by data from recent analysis, reports, and visual figures.

The Persian Gulf region is a cornerstone of global energy and fertilizer supply. The Gulf countries — Bahrain, Iraq, the Islamic Republic of Iran, Kuwait, Qatar, Saudi Arabia, Oman, and the United Arab Emirates — collectively produce and export significant shares of the world's crude oil, liquefied natural gas (LNG), and refined petroleum products. Prior to the conflict, approximately 20 million barrels per day of oil and refined products — around a quarter of global seaborne oil trade — transited the Strait of Hormuz. The outbreak of conflict on 28 February 2026, led to an immediate and dramatic reduction in Gulf exports, with tanker traffic through the strait falling by over 90 percent in early March and Gulf oil production curtailed by 10 million barrels per day by March 10 (IEA, 2026a). These disruptions triggered sharp spikes in global energy prices, with Brent crude briefly reaching USD 115–120 per barrel and European natural gas prices surging by 50–75 percent. Simultaneously, the region's fertilizer exports, particularly nitrogen fertilizers like urea and ammonia, have been severely constrained, threatening agricultural production in Asia, Africa, and beyond.

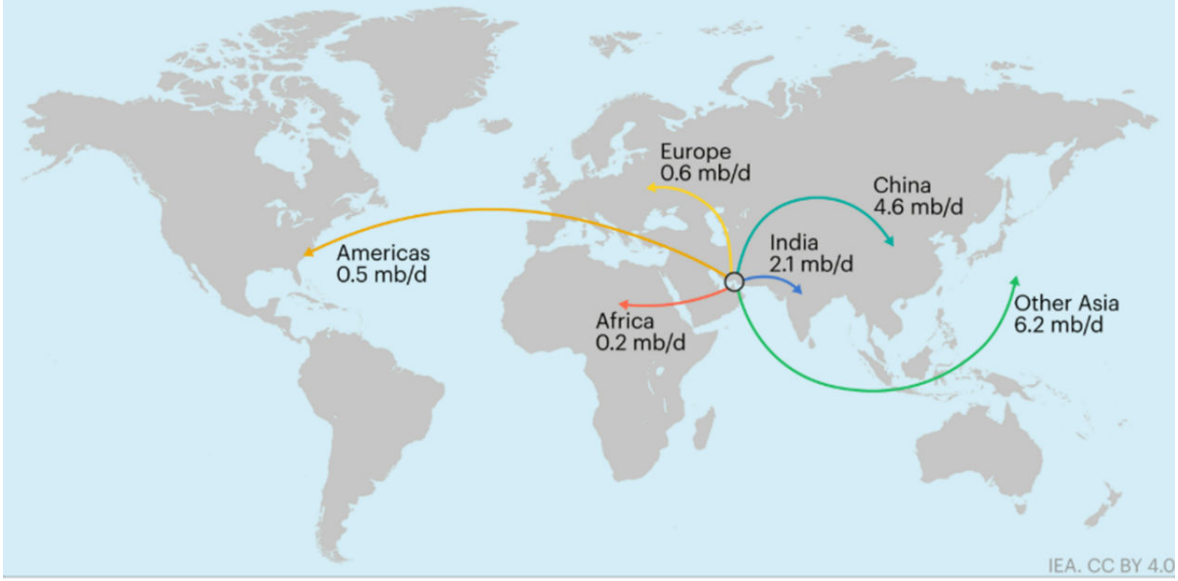
The conflict's ripple effects extend well beyond the Gulf. Countries dependent on imported fertilizers, including India, Pakistan, Bangladesh, and multiple African nations, face higher costs and potential shortages that could compromise crop yields. Meanwhile, food-exporting countries are experiencing delays and uncertainty in reaching Gulf markets, while nations with large expatriate populations in the Gulf risk reductions in remittance inflows. Within the Gulf itself, countries rely on imports for most of their staples, leaving them highly vulnerable to maritime disruptions. The Islamic Republic of Iran, as both a combatant and major regional economy, faces acute domestic pressures: soaring food prices, import disruptions, and preemptive export bans are straining an already fragile agricultural and economic system, threatening food affordability and availability for millions.

This report also considers future risks under different conflict scenarios, highlighting the potential for prolonged supply shocks, rising food prices, and heightened vulnerability in low-income, import-dependent countries. Drawing on these analyses, it proposes a suite of short-, medium- and long-term policy options to mitigate the conflict's impacts. These include expanding alternative trade routes, enhancing market monitoring, supporting vulnerable farmers and import-dependent populations, and promoting longer-term resilience in energy, fertilizer, and agrifood systems. While diplomatic resolution and restoration of maritime access remain paramount, the recommendations emphasize proactive measures to stabilize global food and energy security amid ongoing geopolitical uncertainty.

1. GULF COUNTRIES' ROLE IN ENERGY AND FERTILIZER MARKETS AND DISRUPTION IMPACTS

The Persian Gulf region sits at the heart of global energy markets because it hosts some of the largest producers and exporters of crude oil, LNG, and petroleum products in the world. The Strait of Hormuz, the narrow strategic waterway linking the Persian Gulf to the Arabian Sea, serves as the sole exit point to open seas for these exports, and normally about 20 percent of the world's oil and a similar share of global LNG supply transit this chokepoint each day (see Figure 1.). This concentration of flows means that even short disruptions can remove millions of barrels per day from global markets, sharply tightening supply and triggering rapid price increases that ripple across economies worldwide. Because energy is integral to transportation, industrial activity, and heating, volatility in Gulf oil and gas supplies directly affects global economic stability and inflation.

Figure 1. Crude oil exports transiting the Strait of Hormuz by destination (2025)



Note: Refer to the disclaimer on the last page for the names and boundaries used in this map.

Source: IEA (International Energy Agency). 2026. *Strait of Hormuz Factsheet*. Paris. https://www.iea.org/about/oil-security-and-emergency-response/strait-of-hormuz

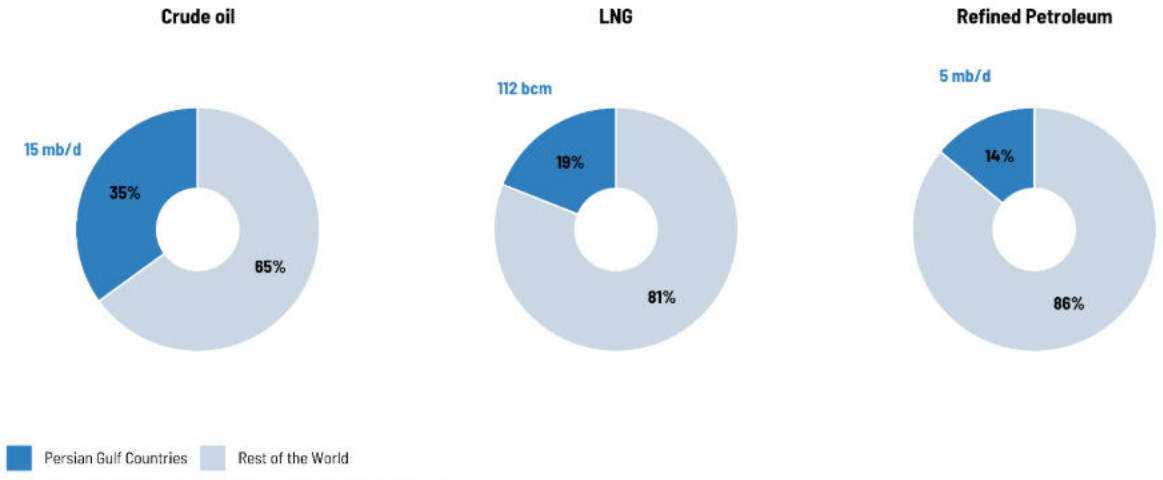
Beyond energy, the Persian Gulf is also a critical hub for global fertilizer production and trade, especially nitrogen fertilizers, which are essential for modern agriculture. A large share of globally traded fertilizer — roughly a third of urea exports, 20 percent of ammonia exports and 20 percent of phosphate (IEA, 2026b) — moves through the Strait of Hormuz because Gulf producers like Qatar, Saudi Arabia, the Islamic Republic of Iran, and the United Arab Emirates are major exporters due to their access to abundant and relatively cheap natural gas feedstock. This link between energy and fertilizer markets means that disruptions to Gulf exports not only tighten fuel supplies but also choke off agricultural inputs, raising fertilizer prices and threatening crop yields and food security far from the region. Because there are no large strategic fertilizer reserves comparable to oil stocks, any sustained interruption to these flows can quickly elevate global fertilizer costs and contribute to broader food price inflation.

1.1 Energy

1.1.1 Energy trade

Prior to the conflict, the Strait of Hormuz carried roughly 20 million barrels per day of crude oil and refined products, about 25 percent of the world's seaborne oil trade (see Figure 2). The Gulf States, notably Saudi Arabia, the United Arab Emirates, Kuwait, Qatar, Iraq, and the Islamic Republic of Iran, are major oil producers and exporters, collectively accounting for more than 25 percent of the global output (IEA, 2026a). The region also supplies a significant portion of global natural gas, especially LNG, and petroleum products.

Figure 2. Global energy supply originated from Persian Gulf countries (2025)



Note: LNG = liquefied natural gas.

Sources: IEA. 2026. *Oil Security and Emergency Response: Strait of Hormuz.* Paris. https://www.iea.org/about/oil-security-and-emergency-response/strait-of-hormuz and IEA. 2026. *Oil Market Report - March 2026*. Paris. https://www.iea.org/reports/oil-market-report-march-2026

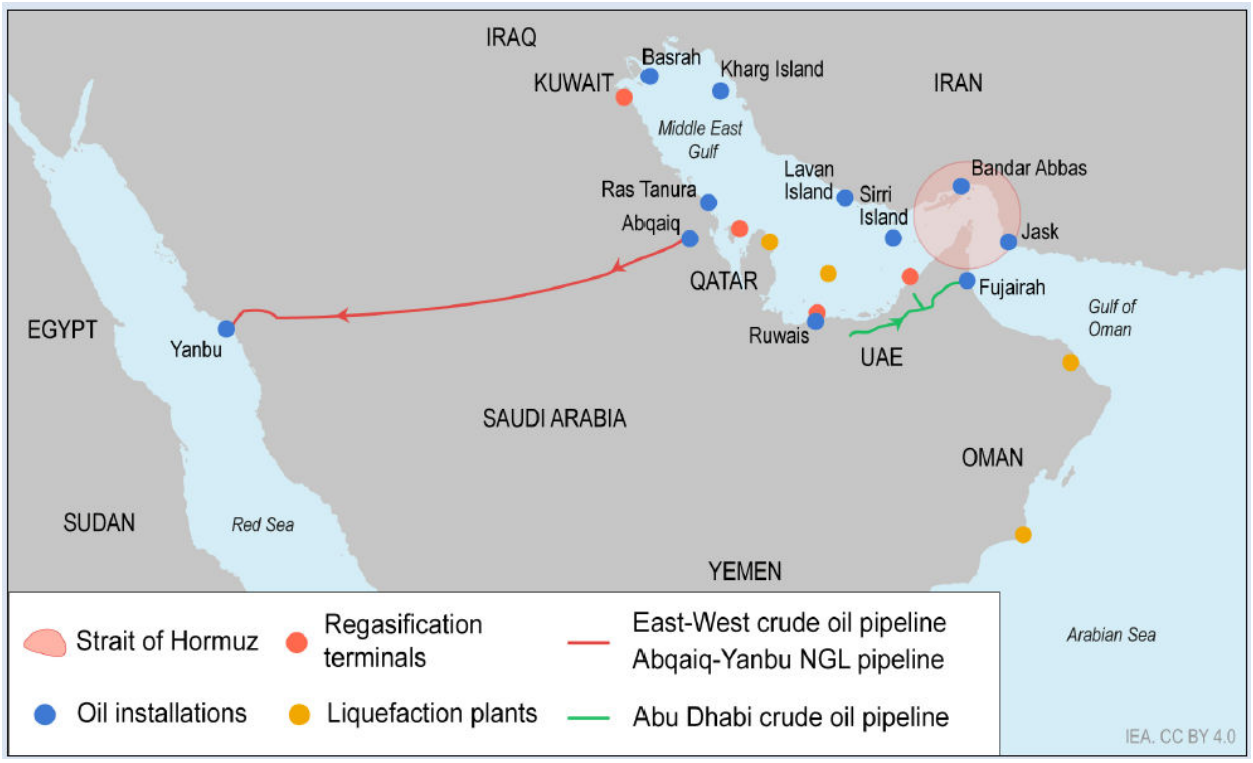
Roughly one-fifth of global LNG exports originate in the Gulf and must pass through Hormuz. The Gulf is similarly critical for refined fuels like diesel and jet fuel. For example, Gulf refineries provided an estimated 60 percent of Europe's jet fuel and 20 percent of its diesel in 2025 (IEA, 2026a). This means any major disruption in the Gulf directly threatens global energy security.

The Islamic Republic of Iran is a significant oil producer, pumping roughly 3.5 million barrels per day — about 4 percent of global supply — and the conflict has threatened both its production and export capacity. At the same time, the conflict has severely disrupted traffic through the Strait of Hormuz.

1.1.2 Logistic challenge in energy trade

Within days of the conflict's outbreak, tanker traffic through the Strait of Hormuz plunged by more than 90 percent, falling from an average of about 129 ship transits per day in February to barely 3–6 per day in early March (IMF, 2026). By mid-March, export volumes of crude oil and products through Hormuz were at less than 10 percent of their pre-conflict levels. With the main transit route effectively closed, Gulf producers have been forced to curtail oil output, shutting in about 10 million barrels per day of production by March 10 due to export constraints. These production cuts were partially offset by accelerated loading of tankers stranded inside the Gulf, which collectively added 8.6 million barrels per day of loading activity since the onset of the crisis and may help lift supply once the Strait reopens. Only Saudi Arabia and the United Arab Emirates have pipelines (displayed in red and green in Figure 3) that can bypass the Strait, with limited spare capacity — up to 5.5 million barrels per day, about one-quarter of the usual export of the region — leaving other producers like the Islamic Republic of Iran, Iraq, Kuwait, Qatar, and Bahrain almost completely reliant on the blocked route. This sudden supply loss of nearly a quarter of world oil trade marks one of the largest disruptions in oil market history. According to the latest IEA projections, global oil supply in March is expected to decline by 8 million barrels per day, falling to 98.8 million barrels per day, its lowest level since the first quarter of 2022 (IEA, 2026a).

Figure 3. Alternative routes for oil exports



Source: IEA. 2026. *Strait of Hormuz Factsheet*. Paris. https://www.iea.org/about/oil-security-and-emergency-response/strait-of-hormuz

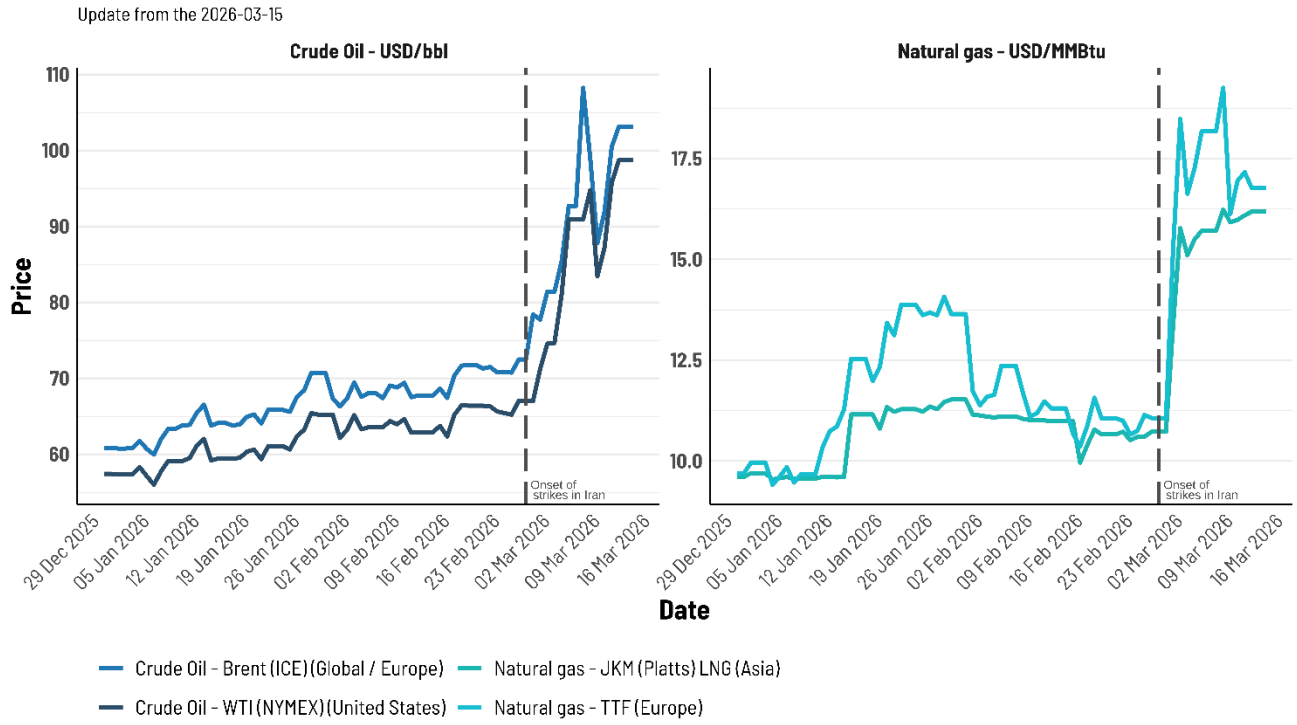
Attacks on tankers, rising insurance costs, and security threats have drastically reduced shipping through the strait, creating immediate fears of a global supply shortage. These supply concerns have been amplified by production cuts and disruptions in other Gulf producers and by attacks on energy infrastructure across the region.

The potential impacts of these disruptions are immense. In energy markets, a prolonged Gulf supply outage could flip global oil from surplus into deficit, driving prices to extreme levels and straining the world economy.

Global markets reacted swiftly and turbulently to the Persian Gulf conflict, with energy prices spiking to multi-year highs and fertilizer costs surging, setting the stage for broader commodity inflation. A military strikes and tanker attacks brought Gulf oil exports to a standstill, traders immediately priced in a steep "geopolitical risk premium." In the first days of March 2026, Brent crude oil futures jumped more than 20–35 percent compared to pre-conflict levels (see Figure 4), briefly soaring to around USD 115–120 per barrel — the highest prices seen since 2022 but still not breaking the spike of the war in Ukraine (see Annex) (Investing.com, 2026a). The US benchmark, West Texas Intermediate, similarly spiked from about USD 70 in late February to above USD 100 at its peak in early March (Investing.com, 2026b).

These sharp increases reflect fear of a global supply crunch as up to 15–20 million barrels per day of Gulf output were suddenly at risk. By mid-March, oil prices remained extremely volatile. Brent had pulled back to the low USD 90 after initial spikes but was still roughly USD 20 higher than before the conflict (IEA, 2026a).

Figure 4. Energy prices



Sources: Data for Brent Oil (LCOc1), Crude Oil WTI (CLc1) , Dutch TTF Natural Gas (TFAc1) and LNG Japan/Korea Marker PLATTS Future (JKMc1) from Investing.com. 2026. Commodities. [Accessed on 14 March 2026]. https://www.investing.com/commodities

Natural gas markets saw an even more dramatic response (see Figure 4). European gas benchmark, Dutch TTF, futures surged by 50–75 percent in the conflict's first two weeks, reflecting both lost LNG export volumes from the Gulf and panic buying by importers. A missile strike on a Qatari LNG facility on 1 March sent TTF prices above EUR 65 per megawatt-hours (MWh), up nearly 50 percent overnight (Investing.com, 2026c). Overall, LNG prices jumped about 47 percent to EUR 65.5 per MWh in early March (Investing.com, 2026d). This instability hit refined fuel markets as well. Diesel and jet fuel prices surged worldwide, since key suppliers like Saudi Arabia and the United Arab Emirates have cut refinery runs and exports due to full storage tanks and security threats (IEA, 2026a). The abrupt loss of Gulf diesel and jet supply left little spare refining capacity elsewhere to fill the gap, driving those product prices sharply higher.

The current situation remains highly volatile. Prices initially spiked above USD 110–120 per barrel amid fears that the conflict could shut down Gulf exports entirely and potentially remove millions of barrels per day from global markets. However, prices have recently fluctuated as markets respond to changing geopolitical signals, including statements suggesting the conflict might ease and discussions about possible releases from strategic petroleum reserves or alternative export routes. Even with temporary declines, the market remains extremely sensitive to developments in the region because prolonged disruption of the Strait of Hormuz or regional oil infrastructure could push oil prices significantly higher, potentially reaching USD 150 per barrel.

1.1.3 Energy policy responses to date

Governments and institutions have scrambled to stabilize markets. On 11 March, the International Energy Agency (IEA) announced a coordinated release of 400 million barrels from emergency oil reserves, the largest such action in its history, to offset the Gulf supply losses (IEA, 2026c). While this move provided temporary relief, it has not fully calmed oil prices, which remain volatile. This intervention could only address short-term concerns since it is the equivalent of 20 days of Gulf countries' supply. Some countries have also moved to secure alternative energy, but replacement options are limited and often costly. Overall, the markets' reaction underscores the world's exposure to the Gulf. In a conflict of this magnitude, energy can rise within days to levels that threaten both economic stability and food security across the globe.

This is the sixth coordinated emergency stock release in IEA history. Previous releases occurred in 1991 during the first Gulf War, in 2025 after Hurricane Katrina disrupted US Gulf Coast oil production and refining capacity, in 2011 in response to the loss of Libyan crude oil output during the civil conflict, and twice in 2022 after the beginning of the war in Ukraine. The release of 2026 has been the largest so far.

1.2 Fertilizer

Beyond oil, the Gulf region is also a key hub of the global fertilizer market, supplying a substantial share of nitrogen and phosphate fertilizers that support agricultural production worldwide. The region's abundant natural gas resources allow Gulf countries to produce fertilizers at competitive costs, making them essential suppliers for many import-dependent countries in Asia, Africa, and beyond. Any disruption to Gulf fertilizer exports, whether from conflict, infrastructure attacks, or shipping bottlenecks, can quickly translate into higher fertilizer prices, reduced crop yields, and broader threats to global food security, showing how closely the Gulf's energy and agricultural supply chains are connected to the stability of the global economy.

1.2.1 Fertilizer trade

Gulf countries are among the top exporters of nitrogen fertilizers like urea and ammonia and phosphate fertilizers. Up to 30 percent of globally traded fertilizer products — roughly 16 million tonnes per year of nitrogenous, phosphates and sulfur — transit the Strait of Hormuz (Kpler, 2025). In particular, the Persian Gulf region provides an estimated 30–35 percent of the world's urea exports and about 20–30 percent of ammonia exports in recent years (FAO, 2026a). For example, Qatar's massive QAFCO complex produces 14 percent of global urea trade single-handedly, and Saudi Arabia and the Islamic Republic of Iran also rank among top nitrogen and phosphate fertilizer suppliers.

The loss of Gulf exports creates an immediate global shortfall with no quick substitute, since no strategic fertilizer stockpiles exist internationally and alternative production in other regions was already limited by high energy costs and earlier export restrictions. The Gulf's central role means any protracted conflict threatens cascading effects. The conflict has not only unleashed an energy crisis but also a fertilizer supply crisis, raising the possibility of lower agricultural yields and global food price spikes in the months ahead if the disruptions continue.

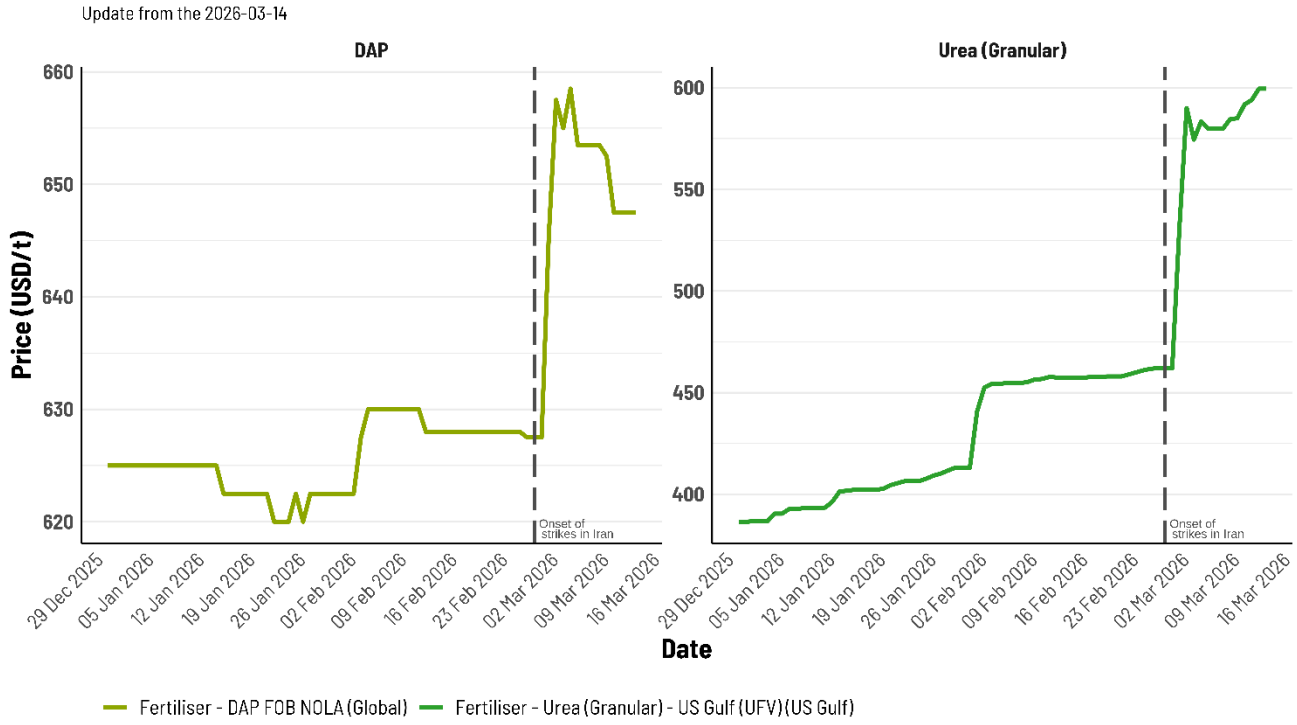
With the outbreak of the conflict, these fertilizer flows have been severely disrupted. Key facilities have been damaged or shut. Qatar's Ras Laffan LNG and fertilizer operations were struck on 2 March, halting output of 112 billion cubic metres of LNG and associated ammonia production. Major fertilizer plants in Qatar, the United Arab Emirates, Saudi Arabia, the Islamic Republic of Iran, and Jordan have reduced or suspended production due to attacks and insecurity. The effective closure of Hormuz means that an estimated one-third of all fertilizer trade is stalled, with 3–4 million tonnes per month not reaching markets. In short, the conflict is choking off the world's fertilizer highway, cutting supply lines that connect Gulf petrochemical plants to farms across Asia, Africa, and beyond.

In addition, the Middle East conflict has tightened already fragile global fertilizer supply conditions. Even before the conflict, the market faced constraints due to reduced exports from major suppliers such as China and high energy costs in Europe that limited fertilizer production (IEA, 2026d). The new conflict has compounded these pressures, as nitrogen fertilizer markets reacted immediately to the geopolitical shock, pushing prices higher across markets in North America, Europe and Asia.

1.2.2 Fertilizer prices

The fertilizer market experienced an immediate shock as well, as it is tightly linked to energy. Natural gas is the key feedstock for nitrogen fertilizers, so the spike in gas and oil prices, combined with disrupted Gulf production and shipping, caused fertilizer prices to skyrocket (see Figure 5). In the first week of March, Middle East granular urea prices climbed to over USD 590 per tonne, up by USD 90 (+19 percent) from late February (Investing.com, 2026e). Other benchmark fertilizer prices followed. For instance, US Gulf DAP rose to USD 655 per tonne, about 5 percent higher in the same period (Yahoo Finance, 2026a). Some regional fertilizer prices saw even steeper jumps. In Egypt, urea prices spiked 28 percent in days, reaching USD 625 per tonne (Yahoo Finance, 2026b). Futures markets for fertilizers and their inputs initially leapt by 10 percent or more on news of the conflict. Tensions have also increased on the markets with a number of previously negotiated contracts cancelled for "force majeure" and forcing buyers, to go to the spot market, creating a surge in demand. Global fertilizer prices are projected to average roughly 15–20 percent higher in the first half of 2026 than a year prior if the crisis persisted.

Figure 5. Fertilizer price evolution



Sources: Yahoo Finance. 2026. Urea (Granular) - US Gulf (UFV). [Accessed on 14 March 2026]. https://finance.yahoo.com/chart/UFV%3DF and Investing.com. 2026. DAP FOB NOLA - Mar 26 – Historical Data. [Accessed on 14 March 2026]. https://www.investing.com/indices/dap-fob-nola-futures-historical-data

1.3 Implications for commodity prices

So far, major agricultural commodity prices have risen, though the impact is somewhat mitigated by ample global grain supplies entering 2026 (AMIS, 2026). Commodity prices on world markets, as shown by the FAO Food Price Index in Figure 6, is at similar level as in spring 2021 and 21 percent below the spike of March 2022 at the height of the war in Ukraine crisis (FAO, 2026b).

While these two crises have triggered global responses, and share some similarities, the comparison between the 2022 shock from the war in Ukraine and the current crisis in the Middle East highlights critical distinction in global economics. While both events have triggered massive disruptions in energy and fertilizers, the underlying mechanics of global agricultural supply and demand are operating in entirely different ways. Box 1 discusses the similarities and differences between the two crises in more details.

Box 1. From the war in Ukraine to the conflict in the Middle East: differences and similarities between crises

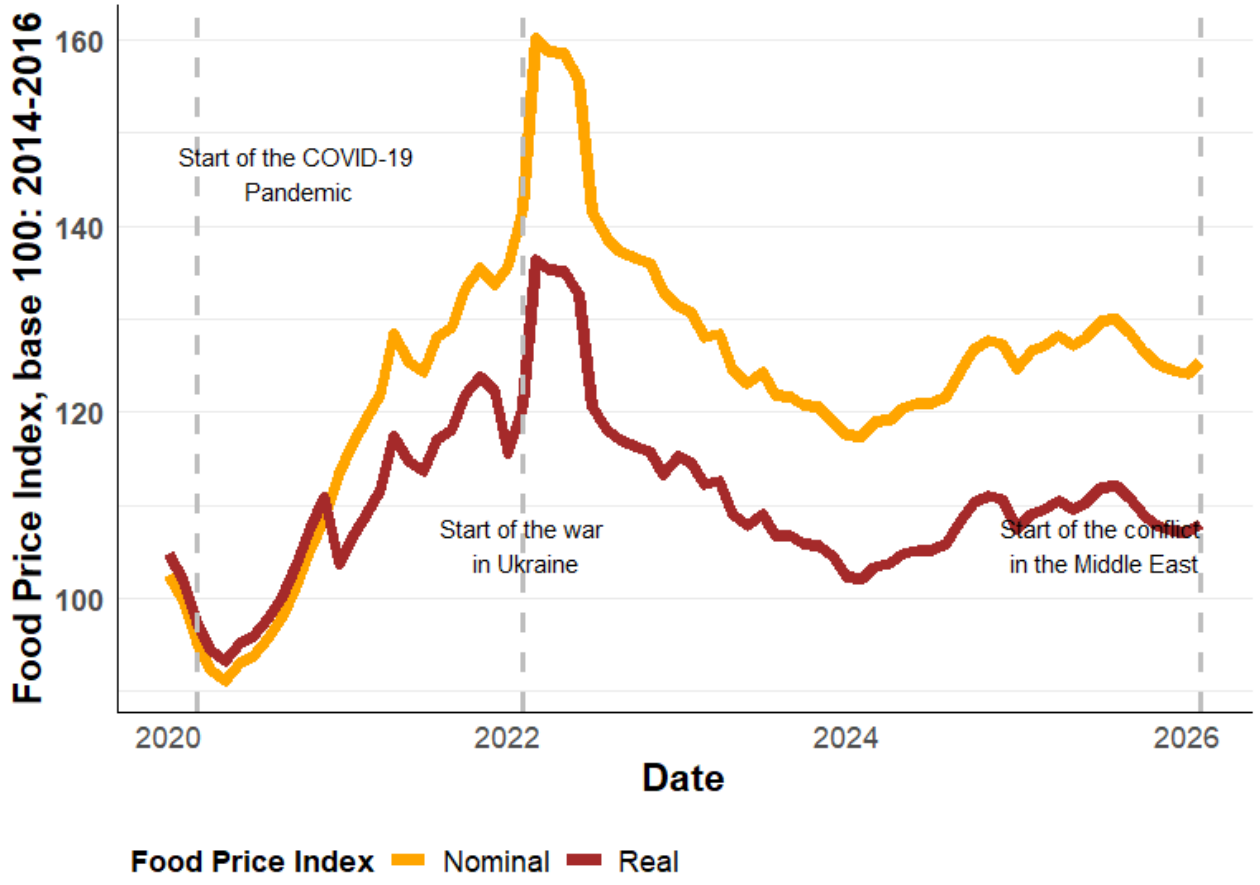
The economic fallout from the war in Ukraine was characterized by a massive, simultaneous shock to both the direct supply of food and the inputs required to grow it, colliding with a period of intense global demand. Russian Federation and Ukraine were foundational to the global agrifood system, acting as dominant exporters of essential staples like wheat, corn, barley, and sunflower oil. The war immediately removed these finished agricultural products from the market. At the same time, trade disruptions heavily restricted Russian Federation's exports of natural gas and fertilizers, crippling the ability of other nations to scale up production to fill the void. In the meantime, the world was just emerging from the pandemic era, meaning global consumer demand was exceptionally strong. Furthermore, poor weather conditions in late 2021 had already resulted in lower harvests, leaving global grain stocks slightly depleted before the war even began. This combination created a textbook inflationary spiral for food. High demand met an immediate, severe supply shock for grains and oilseeds. Food prices predictably skyrocketed, and the surging cost of energy and fertilizers effectively capped any short-term agricultural recovery.

The current conflict in the Gulf region is generating a shock of similar, or perhaps even greater, magnitude to energy and fertilizer markets. However, the dynamics of the food market are entirely flipped. Unlike the Black Sea region, the Middle East is not a major exporter of staple grains or oilseeds. The direct global supply of wheat, corn, and soybeans has not been physically destroyed or blockaded at the source by this specific conflict. The most crucial difference is that the Gulf nations are historically some of the world's most reliant net importers of food. Because the region is paralysed by conflict and blockades, a significant portion of global agricultural demand has effectively been removed from the market.

Because the fundamental architecture of the crisis is different, the economic outcomes and the necessary policy responses cannot be a repeat of 2022. Farmers in places like Brazil or the United States of America might find themselves with plenty of grain but fewer buyers in the Middle East, all while paying excessive prices to fuel their tractors and fertilize their fields. Consequently, the optimal policy response shifts as we will see in Section 4.3. Instead of policies aimed strictly at securing emergency food supplies, governments must pivot protecting their domestic agricultural sectors from collapsing under the weight of input costs, while simultaneously finding new markets for the grain surpluses, or finding new ways to deliver them to the Gulf.

The situation also remains significantly below the 1970s food crisis. Nonetheless, the conflict's ripple effects on food costs are a growing concern and cumulative effects could bring markets to previous extremes. Importers and producers are growing anxious that the Gulf conflict could reignite food inflation just as the world was recovering from the 2022–2023 food price crisis (FAO *et al.*, 2025).

Figure 6. Evolution of FAO Food Price Index in nominal and real terms

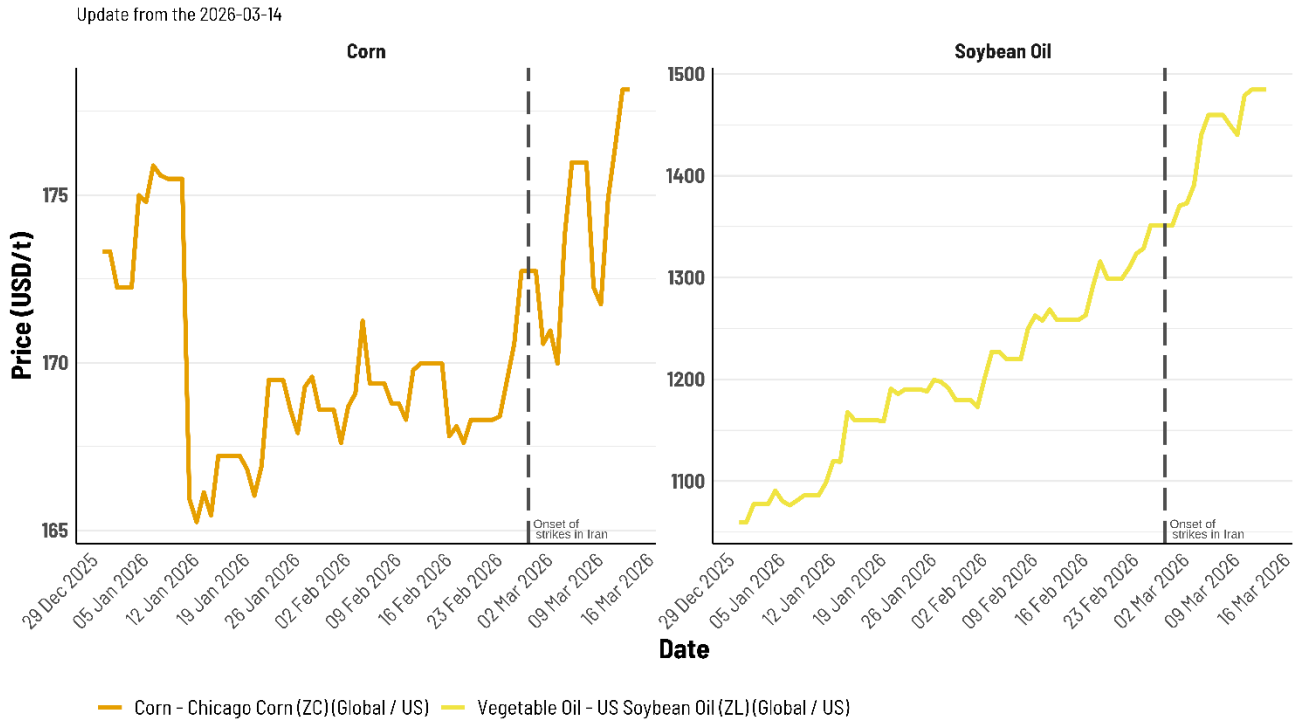


Source: FAO. 2026. Food Price Index. [Cited 14 March 2026]. https://www.fao.org/worldfoodsituation/foodpricesindex/en

1.3.1 Differentiated responses across commodities

In early March, commodities like wheat, rice, corn and vegetable oils saw prices firming on international markets, exacerbated by panic buying and stockpiling. Volatility has increased but some commodities were on an upward trend before the beginning of the conflict. Crucially, many fear a "cross-commodity price contagion," when a price shock in one commodity spreads to other commodities, pushing their prices up. If farmers cut fertilizer use due to high costs, future harvests may shrink, leading to tighter grain supplies and a surge in food prices later in 2026. Higher energy prices drive up costs for farm inputs like fuel and electricity and transportation, while pricier fertilizer makes crop production more expensive.

Figure 7. Corn and soybean oil prices



Sources: Investing.com. 2026. US Soybean Oil (BOc1) [Accessed on 14 March 2026]. https://www.investing.com/commodities/us-soybean-oil-historical-data?cid=1178328 and Investing.com. 2026. US Corn (Cc1) – Historical Data. [Accessed on 14 March 2026]. https://www.investing.com/commodities/us-corn-historical-data?cid=1178334

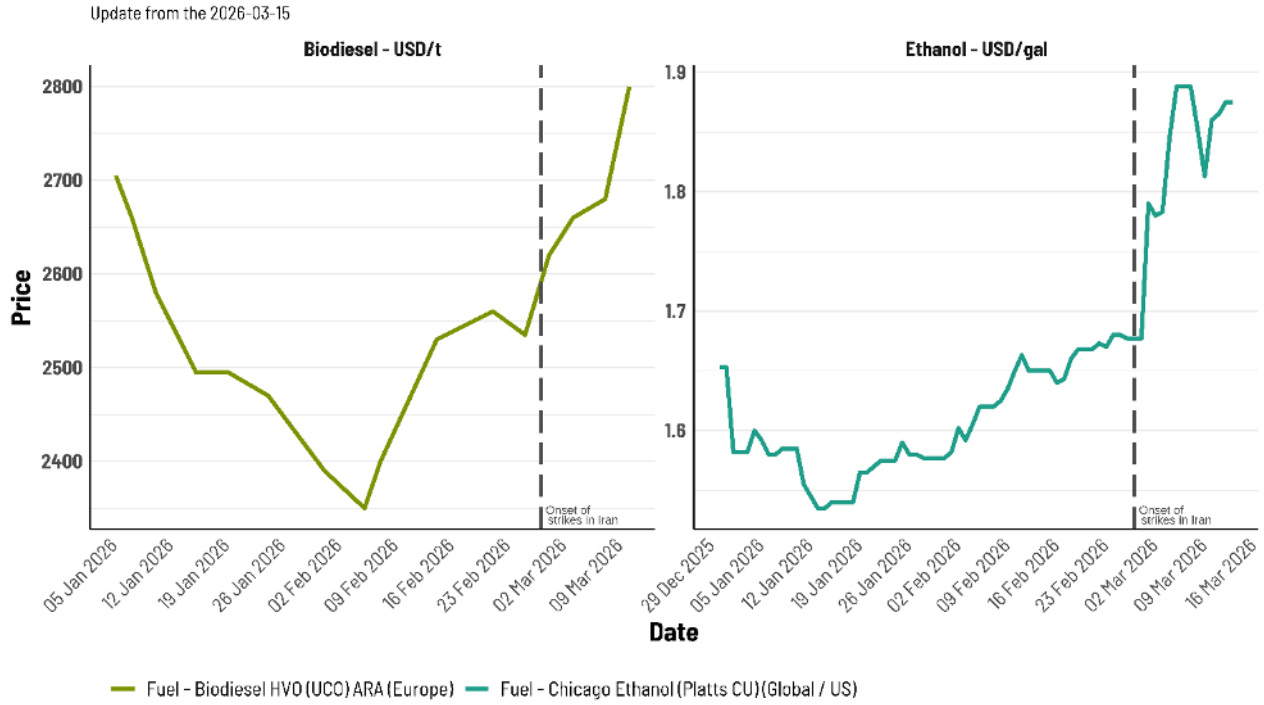
In addition to spot market developments, futures markets for key cereals on the Chicago Board of Trade (CBT) have shown early signs of tightening and upward price pressure in response to the conflict and broader market uncertainty. In early 2026 trading, corn and soybean (seeds and oils) futures rose to multi-month highs, as shown in Figure 7, with contracts for delivery later in the year climbing on expectations of stronger demand and concerns over input costs, including rising energy and fertilizer prices. Importantly, these two commodities are also linked to the energy markets through their use as liquid biofuels.

Traders have responded to geopolitical risk by increasing open interest and advancing prices for corn, soybeans, and other agricultural futures, reflecting a market repositioning toward anticipated tighter supplies and heightened volatility. For example, soybean futures have experienced robust activity with high open interest, indicating strong investor engagement, while corn futures have regained momentum as contracts for later delivery approach psychologically significant price levels near USD 5 per bushel, about USD 200 per tonne, amid sustained ethanol demand and export interest. Futures prices for wheat and other grains have also shown periods of strength, with rally dynamics influenced by global supply concerns and speculative positioning in the wake of the Persian Gulf disruptions. These movements in futures markets suggest that traders are pricing in a rising trend for food commodity costs over the medium term. This reinforces fears that elevated input costs, and supply bottlenecks could spill into higher global food prices throughout 2026 if these conditions persist.

1.3.2 The demand linkage: the role of biofuels

Similarly, the rise in oil prices has led governments and fuel blenders to secure alternative, domestically produced energy sources, especially ethanol and biodiesel. This geopolitical shock translates directly into feedstock markets. Tight energy balances and high gasoline and diesel prices strengthen blending margins, which in turn support biofuel demand.

Figure 8. Ethanol and biodiesel prices



Sources: Neste. 2026. Renewable diesel HVO (UCO) ARA. [Accessed on 14 March 2026]. https://www.neste.com/investors/market-data/renewable-products and Investing.com. 2026. Chicago Ethanol Platts F (CUUc1) – Historical Data. [Accessed on 14 March 2026] https://www.investing.com/commodities/chicago-ethanol-(platts)-futures-historical-data

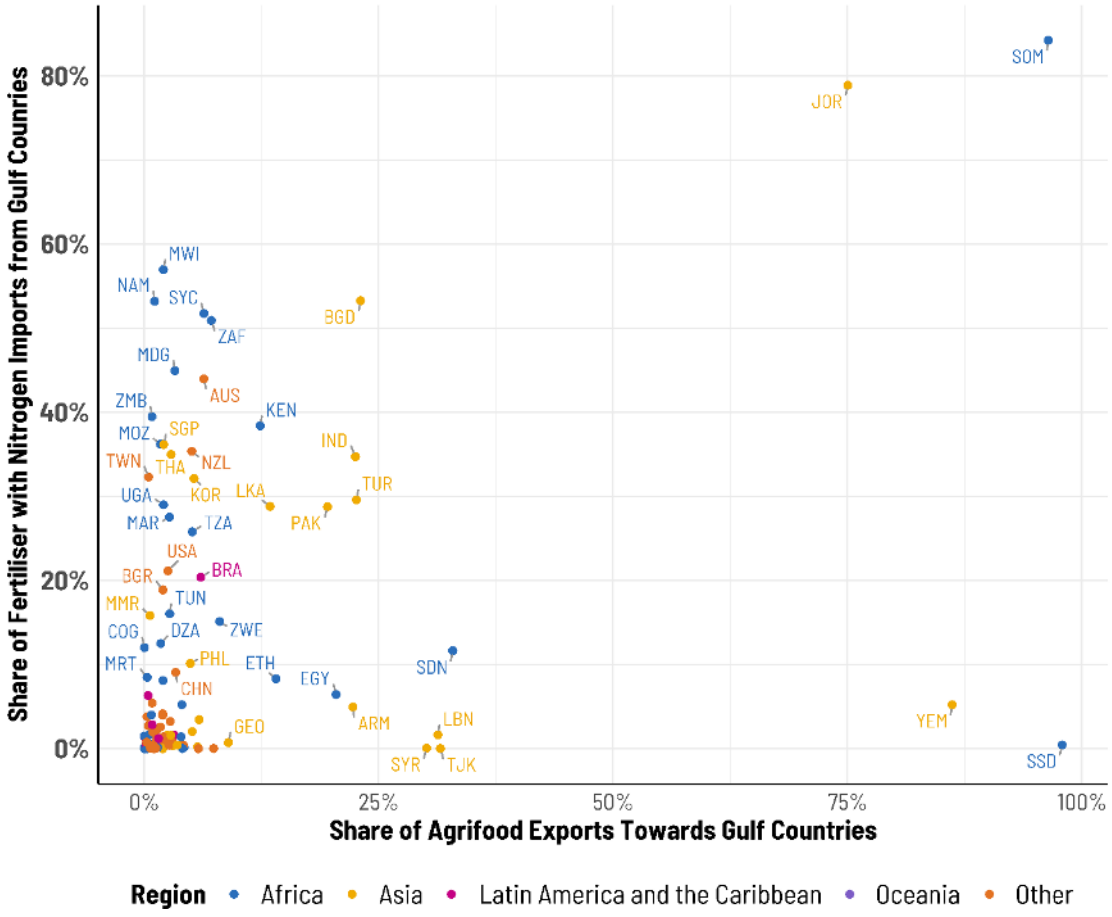
Rise in ethanol demand has driven up US corn futures during periods of record ethanol output despite broader commodity uncertainty. Similarly, the biodiesel sector, which is highly sensitive to vegetable-oil inputs, has been impacted by the crisis. Rising fossil-fuel prices and aggressive policy-driven blending mandates have contributed to earlier price appreciation in soybean oil (see Figure 7) and sustained tension in palm oil markets, where concerns about Indonesian supply and biodiesel mandates had already lifted prices before moderating late in the year. Even though global biodiesel prices eased slightly in early 2026 due to improved feedstock availability, they remain supported by strong demand for renewable fuel as energy security concerns rise amid instability in the Gulf. Ethanol prices have particularly strongly responded to the start of the conflict as an available option on the US markets to mitigate the price of blended gasoline at the pump (Figure 8).

Every spike in Persian Gulf oil prices elevates the economic and strategic value of biofuels, but it also transmits volatility into agricultural commodity markets, tightening the connection between geopolitical risk, food-energy systems, and global inflation pressures.

2. FROM REGIONAL CRISIS TO GLOBAL IMPACTS FOR AGRIFOOD SYSTEMS

The conflict in the Persian Gulf is transmitting a dual shock to agrifood systems worldwide, simultaneously tightening input supply and weakening export demand. As shown in Figure 9, many countries are deeply dependent on Gulf energy and fertilizer flows. On the supply side, surging energy and fertilizer prices are eroding farmers' margins, increasing liquidity pressures, and risking cuts in input use that could depress yields in the coming seasons. At the same time, for a number of exporters, the closure of Gulf markets removes a critical outlet for high-value products, reducing farm revenues and worsening already narrow cashflow conditions. Together, these cost–push and demand–shock channels could lead to reduced agricultural supply in the months ahead, setting the stage for a new wave of food price increases within roughly six- months.

Figure 9. Agrifood systems with high dependency in relation to Persian Gulf countries (2023)



Sources: FAO. 2026. FAOSTAT: Detailed trade matrix (fertilizers). [Accessed on 10 March 2026]. https://www.fao.org/faostat/en/#data/RFM and FAO. 2026: Detailed trade matrix. [Accessed on 10 March 2026]. https://www.fao.org/faostat/en/#data/TM

2.1 Rising costs for farmers and implications for fertilizer use and future yields

The shockwaves from the Gulf conflict are rippling through countries far beyond the Middle East, especially those reliant on the region for fertilizer supplies and those economically tied to Gulf markets (Glauber, 2026). As Gulf exports of oil, gas, and fertilizers have collapsed, import-dependent nations in Latin America, Asia, and Africa are facing scarcity and higher costs. At the same time, countries that normally export food or labour to the Gulf are experiencing secondary impacts on their economies.

2.1.1 Immediate impacts on fertilizer importing countries

One of the clearest effects is on major fertilizer-importing countries. Gulf States are key suppliers of nitrogen and phosphate fertilizers to South Asia, East Asia, and Africa. With roughly one-third of global fertilizer trade halted, these regions face immediate shortfalls. South Asian nations are among the hardest hit. For example, India and China each rely on the Gulf for an estimated 20 percent of their fertilizer imports, while Pakistan sources virtually all of its LNG from Qatar and the United Arab Emirates.

Many African nations are also vulnerable because they depend on imported fertilizer, much of it from the Middle East. As show in Figure 9, war-torn Sudan is the most exposed, importing 54 percent of its fertilizers from Gulf sources. In East Africa, countries such as the United Republic of Tanzania, Somalia, Kenya, and Mozambique obtain a large share of their fertilizer from Gulf exporters and now face acute shortages. For instance, Kenya normally imports about 40 percent of its fertilizer from the Gulf and already struggles with 90 percent dependency on imported wheat, a combination that makes it highly vulnerable to food insecurity under a prolonged Gulf fertilizer cutoff.

2.1.2 A concern for both large- and small-scale farmers

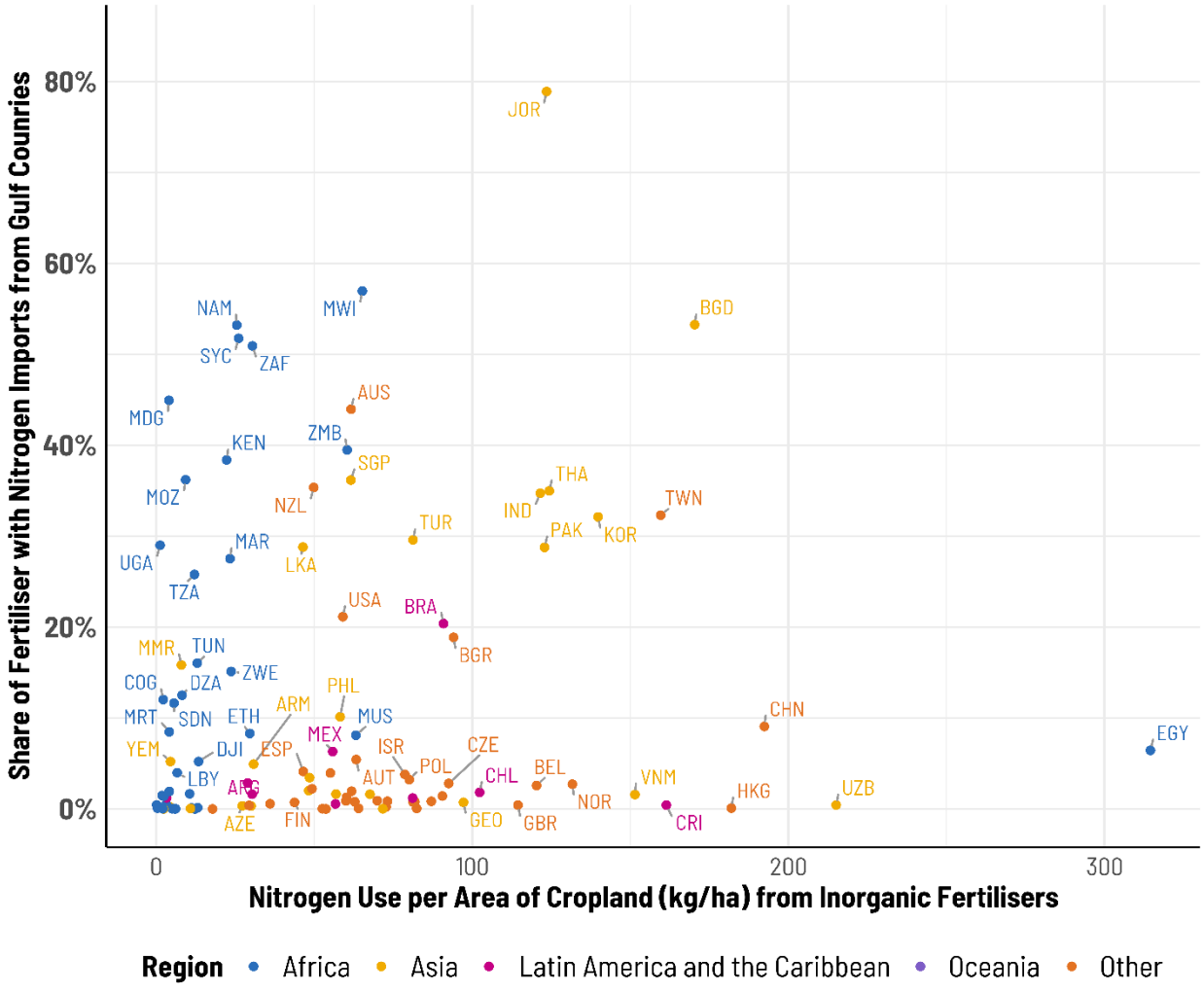
The Figure 10 illustrates a critical dual-axis vulnerability for producers in relation to the fertilizer situation. A country's exposure to Gulf supply shocks is not just about where they buy fertilizer, but how intensely they rely on it for crop yields. Countries with a high share of Gulf imports face immediate supply bottlenecks, while those with massive nitrogen application rates will suffer exponentially as global prices surge, regardless of where they source it.

Analysing both metrics together, a clear cluster of severe vulnerability emerges, predominantly among intensive agricultural economies in Asia. Bangladesh represents an extreme risk profile. Sourcing 53.3 percent of its fertilizers from the Gulf and applying a massive 170.35 kg of nitrogen per hectare, any disruption threatens its supply chain while crippling operational costs. In addition, Bangladesh normally gets around two-thirds of its LNG from Qatar and about half of its imported urea from the Gulf region. Similarly, Jordan stands out with a staggering 78.9 percent Gulf import dependency coupled with very heavy field application, with 123 kg per hectare. Major global producers like India and Thailand

also land in the risky zone, balancing heavy usage, applying more than 120 kg of nitrogen fertilizer per hectare with significant Gulf reliance of 35 percent. Indian media have reported at least one domestic fertilizer plant shutting down and others cutting production due to gas shortages and expensive inputs, raising alarm for the upcoming summer planting season (Acharya, 2026).

Conversely, massive users like Egypt and China are relatively insulated from this specific conflict due to low Gulf dependency, with 6.4 percent and 9.1 percent, respectively, but the increase in fertilizer prices could still impact them.

Figure 10. Relative and absolute exposure to nitrogen shortage and price increase (2023)



Sources: FAO. 2026. FAOSTAT: Detailed trade matrix (fertilizers). [Accessed on 10 March 2026]. https://www.fao.org/faostat/en/#data/RFM and FAO. 2026: Fertilizers by Nutrient. [Accessed on 10 March 2026]. https://www.fao.org/faostat/en/#data/RFN

Ultimately, the greatest systemic risk lies in Asian economies that combine highly intensive agricultural practices with fragile supply chains heavily dependent on the Gulf. These countries may be forced to pay significant premiums to import fertilizers from more distant suppliers such as North Africa or Europe and Asia. Delayed or insufficient fertilizer supplies could translate into lower yields for staple crops such as rice, wheat, and maize later this year. This poses a particularly serious risk for densely populated regions of Asia, where these crops account for the bulk of food consumption and are central to food security. In Latin America, Brazil presents a significant and highly impactful case of dual-axis vulnerability. Sourcing a fifth of its fertilizers from the Gulf means Brazil is directly vulnerable to the logistical bottlenecks and supply shocks originating from the Middle East. Losing or struggling to reroute 20 percent of a critical agricultural input is a major operational hurdle. Because Brazil uses such a massive volume of nitrogen, any surge in global fertilizer prices — even for the 80 percent it sources from outside the Gulf — will dramatically inflate production costs for farmers who are already facing low commodity prices and minimal margins.

The most critical takeaway of the Brazilian case is its systemic footprint. Unlike smaller, import-dependent nations where a fertilizer shock mostly drives local starvation risks, Brazil is a global agricultural powerhouse. It is a leading exporter of vital commodities like soybeans, corn, and sugar. If Brazilian farmers scale back fertilizer use due to skyrocketing costs or limited availability, crop yields will inevitably drop. This would transmit the shock directly into global food markets, driving up grocery and commodity prices worldwide.

On the other side of the farm spectrum, across much of sub-Saharan Africa, where smallholder farmers use minimal fertilizer to begin with, any price spike can drastically reduce input usage and reduce yields that are already low. Higher fertilizer prices are likely to hit resource-poor farmers the hardest, risking lower harvests, impacting their own consumption, and increased food price inflation down the line. Some African governments may face fiscal strain if they try to expand subsidy programs to shield farmers from the rising input costs. Beyond smallholders and self-sufficiency production, in West Africa, major agricultural producers like Ghana, Nigeria, and Côte d'Ivoire could also be impacted, both through higher costs and potential shortfalls of fertilizer for key cash crops such as cocoa in the case of Ghana and Côte d'Ivoire.

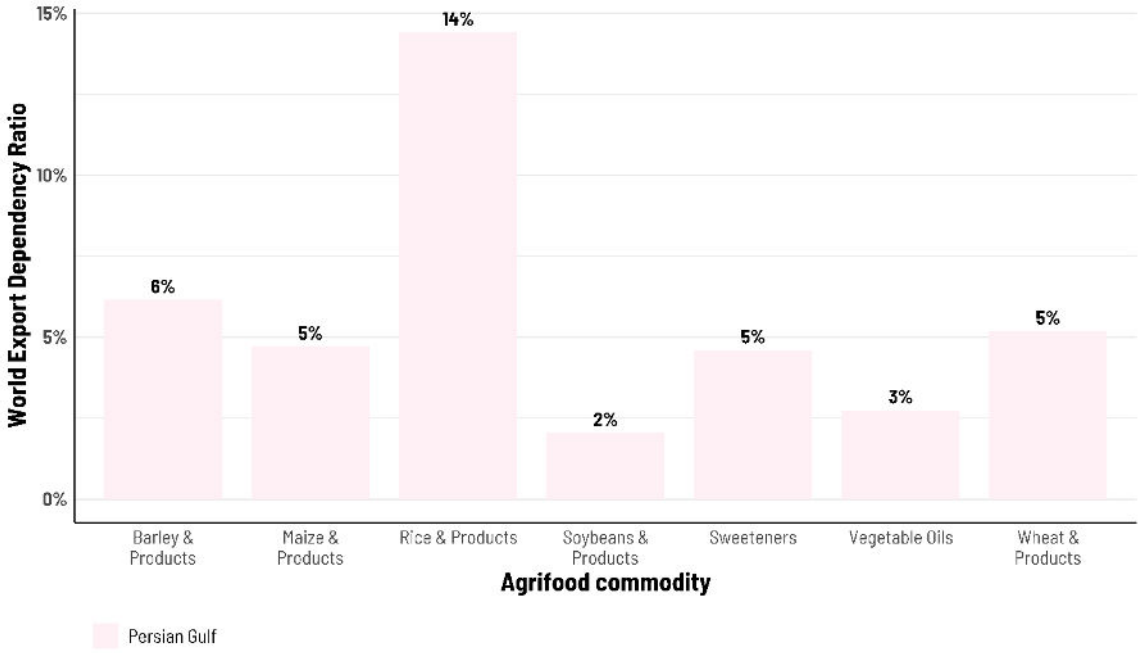
2.2 Loss of export markets and farm revenue

Countries that export food and agricultural goods to the Gulf region are also affected.

2.2.1 The role of Gulf countries as importers

The wealthy Gulf States are among the world's largest importers of staple foods, meat, and dairy. As shown in Figure 11, the Persian Gulf region represents a critical demand centre in global agrifood trade, with the most pronounced impact seen in the rice market, where the region accounts for 14 percent of global markets. This indicates that a significant portion of globally exported rice is destined for the Gulf, and its outsized impact as a major global buyer. Other essential commodities are barley (6 percent), wheat (5 percent), maize (5 percent), and sweeteners (5 percent), which show a moderate but consistent market footprint.

Figure 11. Gulf country import share in global markets (2023)



Sources: FAO. 2026. FAOSTAT: Food Balances (2010-). [Accessed on 10 March 2026]. https://www.fao.org/faostat/en/#data/FBS and FAO. 2026. FAOSTAT: Crops and livestock products. [Accessed on 10 March 2026]. https://www.fao.org/faostat/en/#data/TCL

2.2.2 Regional exposure

Beyond their role in global markets, different products are sourced from different parts of the world. Grains are sourced from North America, Europe, and the Black Sea, while rice comes from South Asia, and meat from South America and South Asia.

Disruptions in Gulf shipping and economic activity mean some of these normal trade flows have been interrupted or delayed. For example, India — a key rice and meat supplier to Gulf markets — may see short-term declines in export volumes or logistical hurdles in reaching Gulf buyers, although it may redirect supplies elsewhere if the Gulf demand softens.

As show in Figure 9, countries that have both high shares of import dependency on the input sides, and high share of export specialization towards the Gulf countries, are particularly exposed to the current situation, and their farmers will suffer from higher costs, lower availability of inputs and depressed export prices. Most vulnerable farmers are located in South Asia (Bangladesh, India, Pakistan and Sri Lanka), in East Africa (Sudan, Kenya and Somalia), and in the Middle East (Türkiye, Jordan).

In summary, the Gulf conflict's disruption of trade and economic ties is being felt worldwide. Fertilizer-importing nations are confronting higher costs and potential shortages that imperil their agricultural output. Food-exporting countries are managing delayed shipments and uncertain demand from Gulf markets.

3. THREATS TO FOOD SECURITY

Countries with large migrant worker populations in the Gulf are bracing for economic fallout from lost remittances. The combined effect could be particularly devastating for low-income, net food-importing countries. They face the double burden of more expensive energy and fertilizer imports and potentially reduced export revenue or remittance inflows. Many such countries already carry debt and food insecurity burdens, so the shock from the Gulf conflict heightens the risk of humanitarian crises far beyond the immediate region.

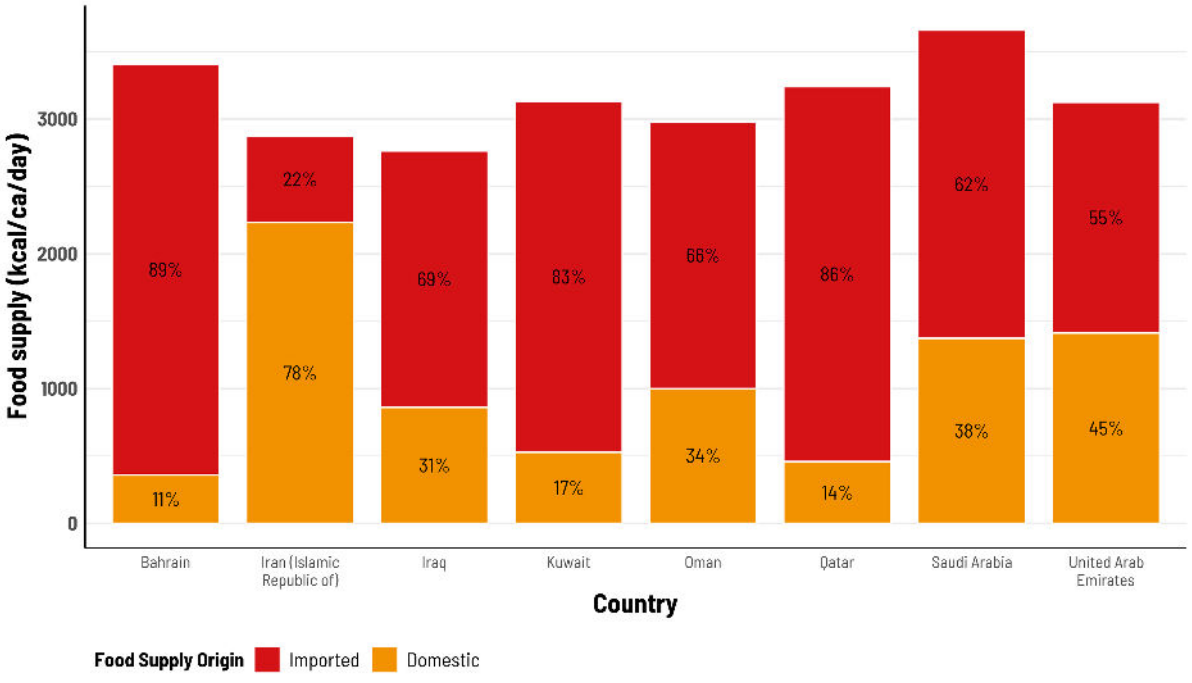
3.1 The situation of Gulf countries

Despite their oil wealth, Gulf countries are extremely vulnerable on the food front. They rely on imports for most staples, so conflict-related shipping disruptions pose an immediate threat to their food security.

3.1.1 Food-import dependency

The nations of the Gulf Cooperation Council (GCC) — Saudi Arabia, the United Arab Emirates, Qatar, Kuwait, Bahrain, and Oman — as well as the Islamic Republic of Iran and Iraq, all have high dependence on imported food. In many of these countries, over 70–90 percent of staple foods are imported due to limited domestic agriculture a result of arid climates and water scarcity (see Figure 12).

Figure 12. Vulnerability of Persian Gulf States to imported food (2023)

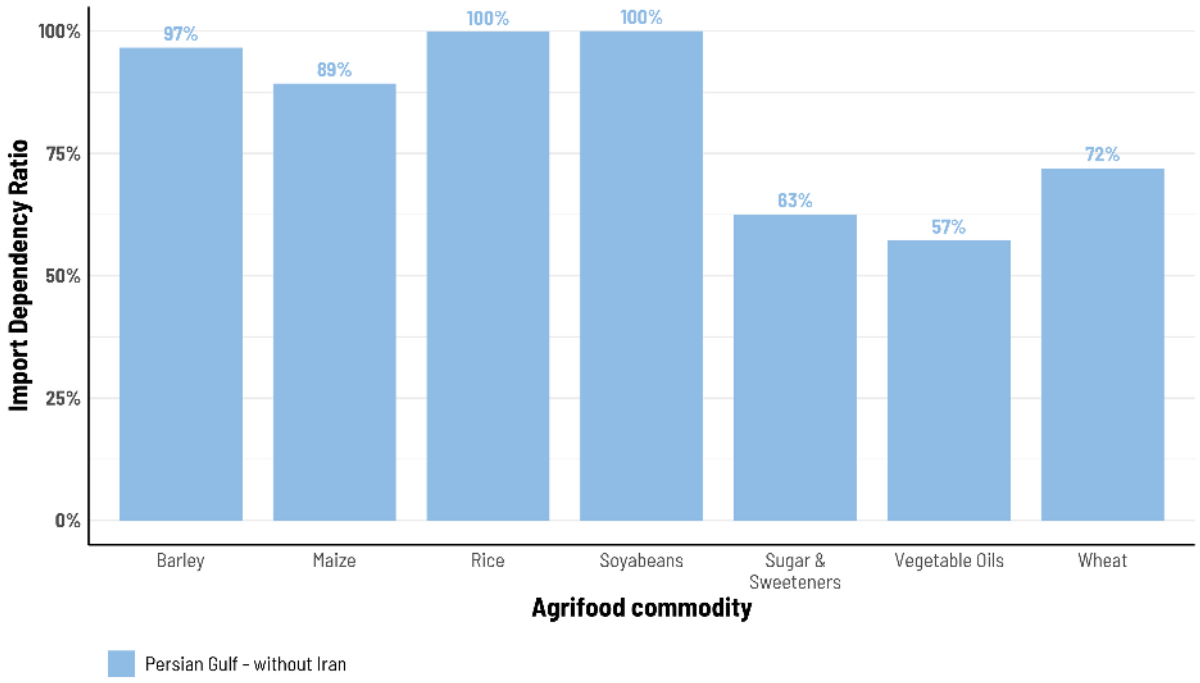


Source: FAO. 2026. FAOSTAT: Food Balances (2010-). [Accessed on 10 March 2026]. https://www.fao.org/faostat/en/#data/FBS

For example, Qatar imports about 90 percent of its food, mostly via seaports. Saudi Arabia and the United Arab Emirates similarly import the bulk of their cereal grains, meat, and dairy needs, despite efforts to boost domestic production in niche areas. This dependence has been sustainable in peacetime through open trade and strategic stockpiling, but it becomes a critical liability when conflict erupts in the region.

The vulnerability of Gulf nations' agrifood systems is illustrated in recent analyses. Bahrain, the Islamic Republic of Iran, Iraq, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates all have extremely high import dependency ratios for staples (see Figure 13). Many of these countries, especially the smaller Gulf States, consume large quantities of cereals like wheat and rice per capita — often over 100 kg of wheat per person per year — yet produce little to none of it domestically.

Figure 13. Import dependency of Gulf States by commodity (2023)



Source: FAO. 2026. FAOSTAT: Food Balances (2010-). [Accessed on 10 March 2026]. https://www.fao.org/faostat/en/#data/FBS

3.1.2 Logistical challenge in food security

The closure of the Strait of Hormuz jeopardizes the main maritime supply line for food into the Gulf. Normally, huge volumes of wheat, rice, sugar, vegetable oil, and other foodstuffs flow into Gulf ports each month from global suppliers. Now, with shipping traffic at a standstill, these essential imports cannot easily reach their destination. Alternative routes are limited. Some Gulf countries can re-route a portion of imports through the Red Sea. For instance, Saudi Arabia has port facilities on its western coast, but the Red Sea shipping lane has also been insecure due to attacks by Yemen's Houthi rebels, which have disrupted Red Sea cargo traffic by about 60 percent in late 2023. Overland options are even more constrained. A small amount of grain can be trucked from Türkiye to the Gulf region or via the Islamic Republic of Iran's rail links, but overland corridors cannot substitute for seaborne trade in volume.

Around 100 million of tonnes (FAO, 2026c) of food are imported by the region every year, or about 274 000 tonnes every day, the equivalent of 10 000 to 14 000 trucks daily. With flights partially suspended and land routes limited, a prolonged conflict will make it difficult for Gulf States to bring in enough food, and what arrives will cost significantly more due to longer routes and war-risk insurance premiums.

Gulf governments do maintain strategic food reserves that can cover a few months of consumption. In fact, the GCC countries had accumulated grain stocks equivalent to about 4–6 months of normal use as a buffer. These reserves, along with high per capita income that allow Gulf States to purchase food at elevated world prices, provide some short-term resiliency. In the initial weeks of the conflict, most Gulf countries have avoided immediate shortages by drawing down stocks and paying premium prices for re-routed shipments. Food price inflation in the GCC countries was relatively modest before the conflict. However, if conflict and import disruptions persist beyond a few months, Gulf nations will start facing serious food supply challenges once reserves dwindle. At that point, domestic food prices could rise sharply, and certain products might become scarce, particularly in smaller Gulf States that have less storage or less diversified supply chains.

Even before the conflict, Gulf countries' food security was tied to global market stability and open trade routes. Traditionally, Gulf governments have managed this risk by maintaining stocks and diversifying import origins. For example, importing wheat from a mix of Europe, Australia, and the Black Sea region or buying rice from multiple Asian producers to avoid over-reliance on a single supplier. Some Gulf States have also invested in overseas agricultural land, for instance, in Sudan or Pakistan, to secure food supplies. And wealthy GCC nations can buy on spot markets to replenish reserves quickly when needed.

However, no amount of stockpiling or supplier diversification can fully negate a physical blockade of trade routes. If maritime access to the Gulf remains blocked, the options to feed over 50 million people in these countries become very limited. Overland routes can only supply a fraction of normal volumes, and even Saudi Arabia's Red Sea ports cannot handle the entire Gulf food import demand, especially under conflict conditions. As an example of the acute risk, the United Arab Emirates and Saudi Arabia are among the Islamic Republic of Iran's top suppliers of refined sugar and wheat flour through re-export hubs, trade which is now endangered. Qatar is uniquely vulnerable, as it has no alternative port outside the Gulf and its food and fertilizer imports could be completely cut off. The country's main food logistics hub would have to rely on air cargo or small-scale land routes, which are insufficient for its needs.

3.1.3 Impact on populations

In the immediate term, Gulf States' wealth allows them to cushion the blow of higher prices, but not indefinitely. Saudi Arabia, the United Arab Emirates, and others have begun seeking workaround solutions, such as using ports in Oman, which, while still inside the Gulf, is closer to the Arabian Sea. They are also accelerating imports via air freight for critical items. These stopgaps, however, are costly and cannot fully replace normal volumes. If the conflict continues, food availability in the Gulf could deteriorate and prices will climb, affecting both citizens and the large expatriate workforce. There are already signs of food inflation and consumer concerns. For example, some Gulf supermarkets have seen runs on products like cooking oil and sugar as consumers worry about supply interruptions, and

governments may need to increase subsidies to keep basic foods affordable. In short, the conflict has turned the Gulf's food-import dependence into an immediate strategic vulnerability. Gulf countries are racing against time relying on reserves and emergency logistics to prevent a food security crisis on top of the ongoing energy crisis.

The conflict has led the Islamic Republic of Iran to ban all its food and agricultural exports as of 3 March, cutting off a source of staples for some of its immediate neighbours. Countries like Iraq and Afghanistan, which imported wheat flour, dairy, and fruits from the Islamic Republic of Iran, are now scrambling for alternative suppliers as the country shuts its exports to preserve domestic supply. This adds to the strain on those neighbouring countries already contending with high global prices and could deepen food insecurity in places like Afghanistan, which is heavily aid-dependent for food, or even in parts of the Islamic Republic of Iran's other neighbours that benefited from Iranian exports. Beyond the GCC, several regional countries are already experiencing high and persistent levels of acute food insecurity, driven by a combination of conflict, economic fragility, and climate shocks that predate the Persian Gulf crisis. In Lebanon, the most recent Integrated Food Security Phase Classification (IPC) analysis shows that around 874 000 people, about 17 percent of the population analysed, are facing Crisis (IPC Phase 3) or Emergency (IPC Phase 4) levels of acute food insecurity, with projections rising to nearly 961 000 people in the April–July 2026 period if current conditions continue. Persistent economic pressures, slow livelihood recovery, ongoing displacement, rising input costs, and drought-affected production continue to constrain food access and market functioning. Meanwhile in Yemen, IPC estimates indicate that more than 17 million people are experiencing high levels of acute food insecurity (IPC Phase 3 or higher), with pockets of the population projected in IPC Phase 5 (Catastrophe), unless there are dramatic improvements in supply and assistance. These IPC classifications reflect very severe food access constraints that leave millions of households struggling to meet basic dietary needs.

Countries like Syria and parts of Jordan are also highly vulnerable, with prolonged droughts and conflict having sharply reduced domestic cereal production and forced heavy reliance on imports amid rising prices and weak economic conditions. Syria's 2025 wheat harvest was cut by an estimated 40 percent due to severe drought, forcing much higher import dependency and straining already overstretched markets and livelihoods. Meanwhile, acute food insecurity remains elevated among the most vulnerable households, including internally displaced populations, whose access to food and income has been undermined by years of instability and market disruption. This confluence of shocks means that any additional pressure on regional food markets — such as further disruptions to trade routes, higher transportation costs, or inflation in staple prices — risks spiraling into broader food price inflation and deeper hunger, unless connections to global food markets are restored and sustained humanitarian assistance is scaled up.

3.2 The Islamic Republic of Iran's agrifood system under strain: a special case

The Islamic Republic of Iran, as both a party to the conflict and a major regional economy, faces a dual threat to its agrifood system: direct impacts from the conflict, including sanctions, export bans, and infrastructure damage, and indirect shocks through soaring import costs and inflation. The Iranian government has responded to the conflict by taking drastic measures to safeguard domestic supply. On 3 March, the Islamic Republic of Iran banned all food and agricultural exports to retain stocks at home. This move underscores the severity of the domestic food security concerns. Even before the conflict, the country's economy was under strain from international sanctions and a sharp currency depreciation that drove food prices to record highs. The conflict has compounded these challenges by disrupting the Islamic Republic of Iran's remaining trade routes and causing new shortages.

3.2.1 Partial food-import dependency

The Islamic Republic of Iran is partially self-sufficient in a few staples but heavily dependent on imports for many key foods, making it highly vulnerable to trade disruptions as shown in Table 1. Wheat is the Islamic Republic of Iran's most important staple, providing about 42 percent of per capita calorie intake. The country generally produces around 70–85 percent of its wheat needs domestically but still relies on imports for the rest — roughly a 15 percent import dependency for wheat in recent years. Critically, about half of the Islamic Republic of Iran's imported wheat comes via the Caspian route from the Russian Federation, making up 45 percent of the Islamic Republic of Iran's wheat imports, and over a quarter from Türkiye. Both of these sources have been partially disrupted. Amid the conflict, Russian Federation has reportedly suspended grain exports to Iran, and overland trade has been slowed by regional instability. Another 20 percent of the Islamic Republic of Iran's wheat imports traditionally arrived from the United Arab Emirates, likely through re-exports, a route now complicated by the Hormuz blockade.

The Islamic Republic of Iran's own 2025 wheat harvest was slightly below average after two good years in 2023–24, and the ongoing conflict raises concerns about the upcoming 2026 harvest as fuel or transport disruptions prevent farmers from accessing inputs and markets. Domestic wheat stocks were about 4 million tonnes as of late 2025, enough for only 3–4 months of consumption. Thus, if imports remain constrained and domestic distribution is affected, The Islamic Republic of Iran could face a serious wheat shortfall by mid-2026, right as its next harvest comes in. The retail price of flour in Tehran jumped 120 percent in January 2026 month-on-month and was nearly 200 percent higher than a year before, reflecting the currency crash and anticipations of conflict.

Table 1. Islamic Republic of Iran food supply and vulnerability to external supply

Commodity	Domestic production / self-sufficiency	Import dependency	Main suppliers / trade routes	Key risks / issues
Wheat	Production covers **>70% of needs**; stocks **~4 million tonnes** (3–4 months consumption)	**~15% import dependency**	**Russian Federation (45%)**, Türkiye (26%), United Arab Emirates (20%); shipments via **Caspian Sea and the International North-South Transport Corridor (INSTC)**	Russian exports reportedly suspended due to conflict; potential transport disruptions during June harvest; **sharp price spike** due to currency depreciation
Maize	Very limited domestic production	**~95% import dependency**	Mainly **Brazil (>70%)**, shipped via **Strait of Hormuz**	Highly vulnerable to maritime disruptions and feed cost shocks
Rice	Domestic production **~3.8 million tonnes**; irrigation constraints	Imports **~1.2 million** tonnes (~28% of supply)	Mainly **India**	Water scarcity affects production; reliance on imports for supply stability
Oilseeds and vegetable oils	Domestic output very low (soybeans ~200,000 t; sunflower ~40,000 t; rapeseed rising (~325,000 t))	Heavy import dependence for soybeans, soybean meal, and vegetable oils	**Brazil and Argentina** (soybeans/meal); Türkiye (soymeal); United Arab Emirates (rapeseed oil trade hub)	Import dependence for livestock feed and edible oils; volatility linked to **currency depreciation**, sanctions, and global oil prices
Meat	Total production **~2.9 million tonnes** (2025); poultry dominates (>80%)	Mostly self-sufficient (**~95%**)	Imports mainly **bovine meat** from Brazil, India, Pakistan, Türkiye, United Arab Emirates,	Feed import dependence (maize/soymeal); red meat relatively scarce and expensive
Dairy	Milk production **>9 million tonnes** (2025); strong growth	**Highly self-sufficient (95–100%)**	Net exporter (main markets: **Iraq, Pakistan**)	Relatively resilient sector with export capacity
Sugar	Production **~1.7 million tonnes**	Imports **30–45% of consumption**	Mainly **United Arab Emirates** (re-exports) via maritime routes	Exposure to **Strait of Hormuz disruptions**; import reliance despite rising domestic production

Source: Elaboration based on FAO. 2026. FAOSTAT. [Accessed on 10 March 2026]. https://www.fao.org/faostat/en and other FAO estimates.

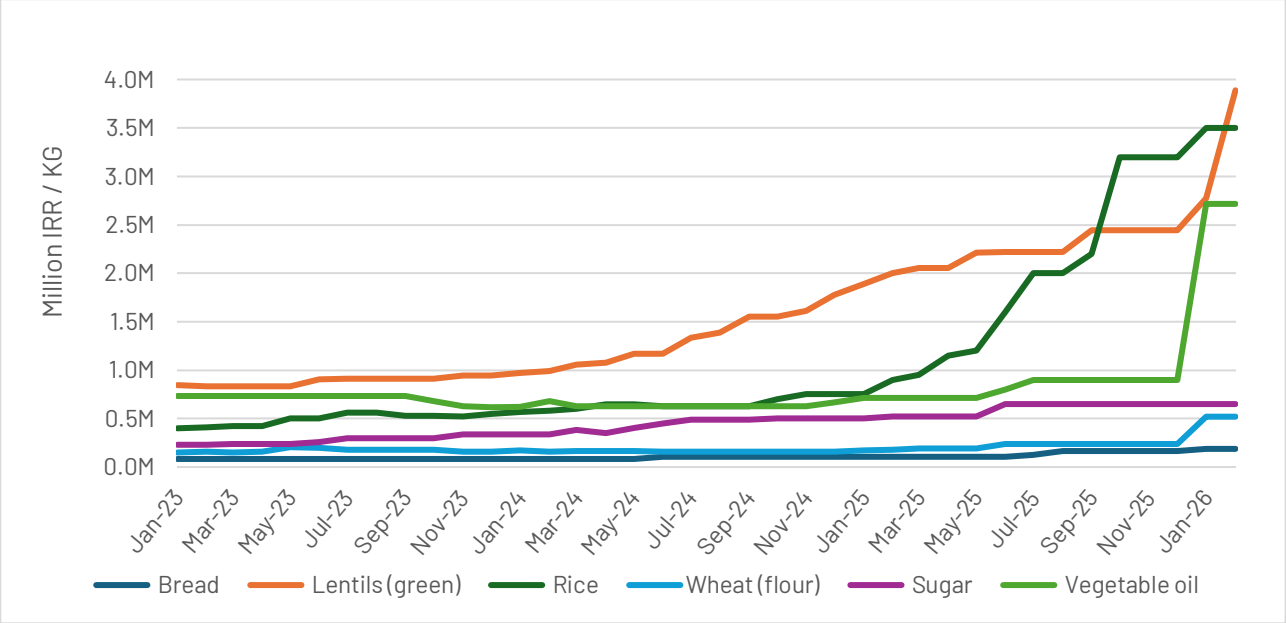
Other staples show similar vulnerability. Maize, crucial for the Islamic Republic of Iran ‘s livestock feed, is 95 percent imported, mostly from Brazil and Ukraine, and almost all of it typically arrives via long-haul shipments that pass through or near the Gulf. With Hormuz closed and parts of the country’s coast under threat, the feed supply for poultry and cattle is at risk, endangering domestic meat and dairy production despite its high nominal self-sufficiency in those products. Rice is another dietary staple that the country must import in large quantities. Domestic rice production, about 3.8 million tonnes milled, falls short, requiring annual imports of about 1.2 million tonnes, which is 28 percent of total rice supply, mostly from India. Any logistical hurdles at ports or trade restrictions can quickly lead to domestic rice shortages or steep price increases in the Islamic Republic of Iran.

Oilseeds and vegetable oils are particularly vulnerable links. The country imports virtually all of its soybeans and vegetable oil. For instance, the Islamic Republic of Iran’s soybean imports for protein meal and oil extraction were projected to reach 2.8 million tonnes, primarily from Brazil and Argentina, while sunflower and palm oil are imported from Ukraine, Russian Federation and Southeast Asia. The conflict’s impact on currency and trade has already driven cooking oil prices sky high in the Islamic Republic of Iran. Sugar is another concern. The country produces only 1.7 million tonnes of sugar compared with about 2.4–2.5 million tonnes of demand, making it about 30 percent dependent on imports. Much of the sugar imports come through the United Arab Emirates, which refines and re-exports sugar from international markets. With Gulf trade in turmoil, Iran’s sugar supply is uncertain, though overland trade from other neighbours like Pakistan or Türkiye might partially compensate.

3.2.2 Impact on consumers

The impact on Iranian consumers has been severe, as evidenced by skyrocketing food prices and inflation. Even before the conflict, the Islamic Republic of Iran was experiencing food inflation above 40 percent year-on-year due to a sharply devalued rial and years of economic strain. The conflict poured fuel on this fire. By early March 2026, overall food prices in the Islamic Republic of Iran were estimated to be 110 percent higher than a year prior. Many essential items have seen prices doubling or more. For instance, bread and cereal prices in Tehran are up about 142 percent year-on-year, meats by 117 percent, dairy products and eggs by 108 percent, fruit by 113 percent, and cooking oil by over 200 percent. Field reports indicate that rice in Tehran now costs roughly USD 4 per kilogram, nearly twice what it cost just months ago, and long queues form for government-subsidized bread. The data from Tehran’s retail markets show that staple food prices, which were already on an upward trajectory in 2025, spiked dramatically after the conflict’s onset (see Figure 14). Households are struggling as their purchasing power erodes. Many families can no longer afford previous levels of meat or dairy consumption, increasing risks of malnutrition.

Figure 14. Domestic retail food prices in Tehran



Source: FAO. 2026. Food Price Monitoring and Analysis (FPMA) Tool. [Accessed on 15 March 2026]. https://fpma.fao.org/giews/fpmat4/global/#/dashboard/home

It is important to note a few mitigating factors specific to the country. Unlike the smaller Gulf monarchies, it has a large agricultural sector and produces much of its own meat and dairy. The Islamic Republic of Iran's production of poultry meat, for example, meets about 95 percent of domestic consumption — about 2.4 million tonnes of poultry produced in 2025. Milk production has been growing over 9 million tonnes in 2025, and the country is a net exporter of dairy products in Asia. However, those sectors depend on imported feed and other inputs, which are in jeopardy. Additionally, the Islamic Republic of Iran's government has tried to shield consumers by expanding subsidies and controlling prices on basic goods. For example, it imposed fixed prices on bread. Such measures can only do so much when underlying costs are spiraling upward.

In summary, the Islamic Republic of Iran's food security situation is grave. Moderate- to high-import dependence for critical staples, limited reserves, especially for grains, and an already fragile economy now hit by conflict. The Islamic Republic of Iran 's preemptive ban on food exports is a sign of the government's concern about ensuring its own population has enough to eat. If the conflict continues to disrupt trade and finance, the Islamic Republic of Iran may face a food affordability crisis, even if physical supplies of staples are just sufficient. This is because prices have become prohibitively high for much of the population. International humanitarian agencies are closely watching the country and its neighbours for signs of acute food shortages or hunger, knowing that its domestic policies like export bans and price controls affect food availability in adjoining countries as well. The unfolding situation in the country is a crucial bellwether for how severely a regional conflict can undermine a nation's entire agrifood system.

4. MODELING POTENTIAL OUTCOMES: SCENARIO SIMULATIONS, FUTURE RISKS, AND POLICY OPTIONS TO MITIGATE NEGATIVE IMPACTS

The current Middle East crisis is triggering a complex web of economic disruptions that cannot be analysed in isolation. Because these shocks ripple simultaneously across multiple sectors and borders, analysing their impacts requires the use of an advanced modelling framework such as the MIRAGRODEP model — a multi-sectoral, multi-country, dynamic computable general equilibrium (CGE) model (Bouët *et al.*, 2022).

FAO modeling tools[1] are particularly well suited to analyse this crisis because they capture the intricate input-output linkages between energy, fertilizers, and global agrifood systems. The model dynamically represents bilateral trade flows and their re-routing, allowing analysis of how global markets adjust when a major buyer or supplier suddenly disappears. Crucially, it also closes the macroeconomic loop by calculating real income effects at the household level, balancing the windfall gains accruing to energy exporters against the decline in purchasing power in import-dependent economies. In the context of major price shocks, tracking changes in real income is essential to assess impacts on food consumption and affordability.

Based on a rich dataset, the GTAP 11 database (Aguiar *et al.*, 2022), and complemented with a dynamic baseline that captures the recent evolution of the global economy prior to the crisis, this modelling framework reflects the heterogeneity of countries in terms of production systems, consumption patterns, trade structures, specialization, and policy environments. Because the impact of the crisis will vary significantly depending on countries' energy mixes, agricultural practices such as fertilizer-use intensity and trade patterns, among many other structural characteristics, a framework capable of capturing this heterogeneity is essential.

4.1 Scenario-based modeling and simulated impacts

4.1.1 Main channels of transmissions and future scenarios

To accurately isolate the economic impact of the conflict, the simulations use a counterfactual approach, comparing a baseline scenario where no hostilities occur against simulated scenarios where the conflict disrupts the global economy. Using a computable general equilibrium model like MIRAGRODEP can capture the three primary, simultaneous shocks triggered by the crisis.

First, the blockade of the Gulf region heavily constrains global oil and gas supplies, driving up energy prices. This directly inflates international transport costs and increases the operational overhead for virtually all macroeconomic sectors globally.

[1] MIRAGRODEP is a global economic simulation model used to analyse agriculture, food systems and trade policies. It is a dynamic, multi-country, multi-sector computable general equilibrium (CGE) model.

Second, the agricultural input shock, as severe bottlenecks in Gulf fertilizer exports trigger an immediate spike in global farming costs. To mitigate these prohibitive expenses, farmers may endogenously reduce their fertilizer application, which will lower crop yields and contract local and global food supply.

Finally, the economic paralysis within the Gulf drastically curtails the region's ability to import goods. This creates a large negative demand shock for global agricultural exporters that rely on the Gulf as a major buyer.

Because these disruptions occur concurrently, they trigger complex price fluctuations across goods, services, and factors of production. MIRAGRODEP is essential in this context because it accounts for these simultaneous interactions, mapping out the subsequent macroeconomic ripple effects such as shifts in current account balances, changes in real exchange rates, and fluctuations in purchasing power. The model has been used to assess different shocks and crises ranging from trade wars to COVID-19 pandemic (Laborde, Martin and Vos, 2021).

Finally, given the high degree of uncertainty surrounding the duration and evolution of the conflict, three distinct chronological scenarios were designed. Treating these as a sensitivity analysis provides a robust range of potential economic outcomes, ensuring that the analysis is not overly reliant on a single fixed prediction. The three scenarios considered:

- A short conflict: the blockade of the Strait of Hormuz lasts for one month, and oil prices spike to USD 120 per barrel for up to three months starting in March, remaining at USD 80 afterward until the end of the year. A similar pattern is applied to natural gas prices, although the relative increase is stronger. While fertilizer prices increase during the period of price spikes, this only impacts some producers in the Southern Hemisphere that have not yet purchased their inputs. Farmers in the Northern Hemisphere are not impacted during the spring planting campaign.
- A medium-term disruption: the blockade is extended to three months, and oil prices, after reaching USD 120 in March, rise to USD 140 in April and May. Starting in June, oil prices stabilize at USD 120 until the end of the year. A similar pattern is applied to natural gas prices, although the relative increase is stronger. Fertilizer prices affect all farmers during the year in both hemispheres, impacting their production and planting decisions.
- A long-term shift: the situation in 2026 is identical to the medium scenario, but disruptions in trade networks and oil prices extend into 2027 80 percent of the 2026 shock is maintained — and are gradually removed through 2030. Growth trajectories are impacted by the perturbation, and total factor productivity is adjusted accordingly.

The model is adjusted to reflect these shocks. Bilateral trade costs between Gulf countries and third parties are increased to reduce trade flows by 80 percent during the blockade period. Oil production in Gulf countries declines as capital, labour, and natural resources in the extraction sector becomes unproductive, reducing oil and natural gas supply and pushing prices higher in the world market. Additional price increases are applied to agricultural inputs to mimic the short-term relationship observed between fertilizer prices and natural gas prices.

Overall, since the simulations focus on 2026, and on the 2026–2030 period for the longer-term scenario, several model elasticities have been reduced to reproduce short-term responses such as limited factor substitution and to avoid the longer-term closure traditionally found in CGE models.

While the CGE model effectively captures the core economic transmission channels, it is important to define the boundaries of these simulations. To isolate the specific market shocks and establish a clear baseline, the current modeling framework intentionally excludes several potential compounding factors.

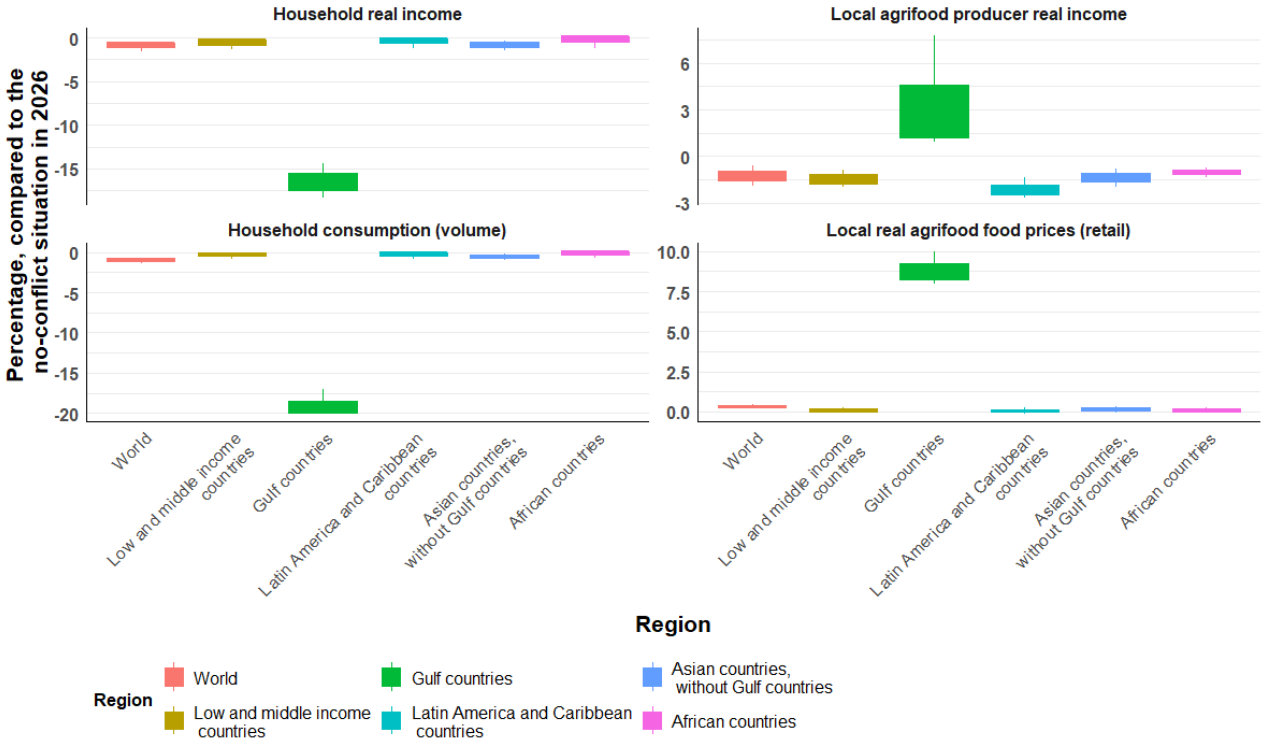
- No physical destruction of productive capital: the temporary shutdown and blockade of oil and gas extraction is modeled but does not account for the physical, long-term destruction of Gulf infrastructure. The simulations assume that productive capacity remains intact and can be fully restored once hostilities cease, omitting any long-term structural damage or post-war reconstruction costs.
- Uninterrupted water and desalination infrastructure: the model does not factor in potential damage to the Gulf's water supply. Given that local agriculture and daily survival depend heavily on energy-intensive desalination plants, any disruption to this infrastructure would trigger a far more severe and immediate contraction in regional agrifood supply than the current numbers project.
- Stable demographics and migrant labour: no mass displacement of populations or sudden exodus of foreign workers is assumed. While the model inherently captures a decline in global remittances due to falling real wages within the Gulf, it treats the actual labour force as static. A large-scale flight of expatriate labour — a highly likely scenario in a prolonged conflict — would trigger a much deeper regional economic collapse, but this remains outside the current scope.
- Contained geographic scope: the simulation strictly confines the primary military operations and direct economic blockades to the Persian Gulf and the Strait of Hormuz. The compounding economic fallout from broader regional escalations or secondary conflict theatres such as active military engagements in Lebanon is not modeled.
- A strict "policy inaction" baseline: most crucially, the simulations assume no emergency interventions by global or regional policymakers. The deployment of new social safety nets, consumer food subsidies, or reactive trade measures such as export bans is not modeled. While the model does include automatic fiscal adjustments to stabilize public deficits, a standard macroeconomic closure rule, it introduces no new policy instruments. Establishing this baseline of complete inaction is vital. It enables measuring the raw, unfiltered magnitude of the crisis so that it can be accurately evaluated and necessary policy solutions can be provided. This also implies no change in monetary policy that could affect economic growth projections and investment decisions.

4.1.2 Main findings

Figure 15 shows the projected impacts of the conflict in 2026. We show the range of impacts for the three scenarios: short term conflict, medium term disruption and long term shirt. In most cases, the more intense scenario, the long term shift, has the strongest results, but this is not always the case, especially when some contradictory forces are at play e.g. the income effect for an African country exporting oil and importing fertilizer. The simulations reveal a stark and highly asymmetrical economic reality, particularly when comparing the epicentre of the conflict with the rest of the world.

At the global aggregate level, the ongoing crisis is undeniably a net negative for consumers, even if some macroeconomic indicators appear deceptively resilient. Globally, general household welfare (household real income) is projected to decline by roughly 0.5–1.6 percent, while the volume of household food consumption shrinks by 0.6–1.3 percent. During the year, agrifood real retail prices faced by most consumers will increase by 0.2–0.6 percent, indicating very limited food price pressure in the short run. At the same time, global agrifood income contracts by 0.6–1.9 percent, showing impacts on both sides of the agrifood value chains.

Figure 15. Potential impacts in 2026: economy wide results



Notes: The height of the box represents the spread between the short, medium and long term scenarios. Most of the time, the long term scenario, with the larger and more persistent shock has the more adverse outcomes, but not always due to indirect effects. Percentage changes displayed.

Source: MIRAGRODEP simulations.

Looking at the differences across regions, it can be seen that the most devastating impact falls on household real income within the Gulf countries. Assuming no policy response, these countries face a catastrophic decline by 14.4–18.3 percent in real income. This reflects the sheer economic paralysis of being in a war zone, cut off from global trade, and facing increases in prices for most goods and services. Other regions experience more moderate declines, with Asia facing the most severe impacts at around 1.5 percent decline, followed by Latin America with declines of up to 1.2 percent.

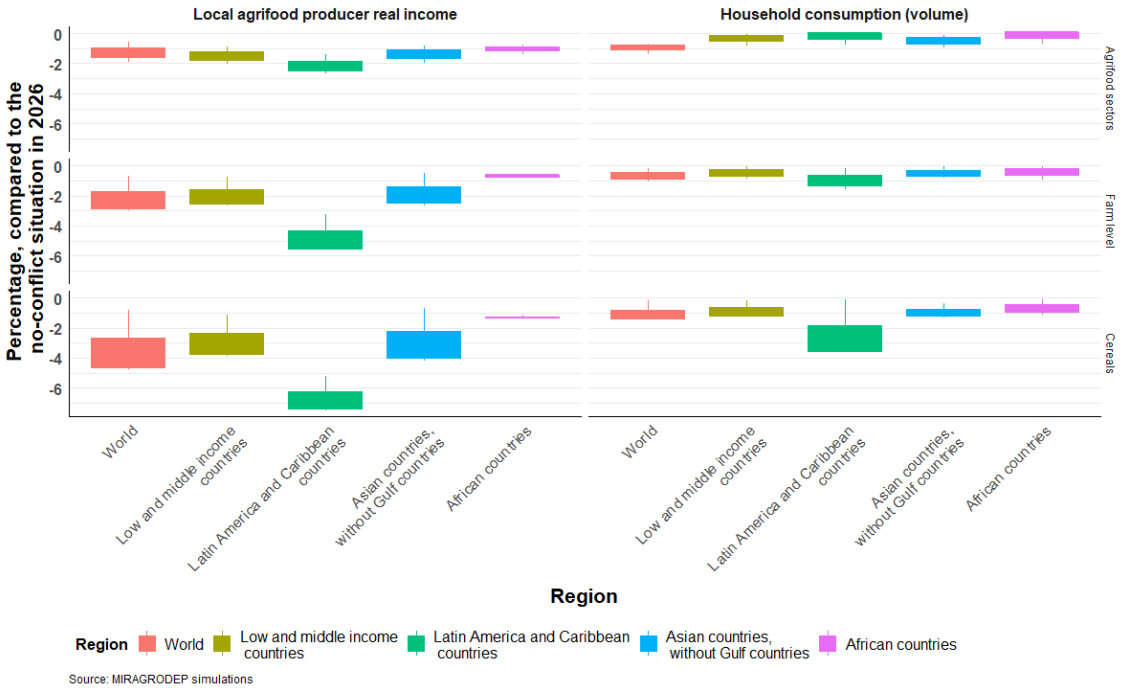
The Gulf's demand is negatively affected through a contraction in the volume of food consumed by households. Food consumption in the Gulf plummets by 17–20 percent. Due to trade constraints, physical food supplies simply do not reach the region, and the resulting shortages significantly inflate prices. For Asia, Latin America, and Africa, the impacts are much milder. Some short-duration scenarios even show tiny positive increases such as Latin America at 0.04 percent or Africa at 0.08 percent likely because food that was destined for the Gulf is temporarily trapped in domestic markets, marginally boosting local availability before production scales down. Ultimately, longer disruptions lead to net declines everywhere up to 0.9 percent in Asia.

Regarding real agrifood sector income, the Gulf countries appear as an anomaly with a positive sign. Paradoxically, local agrifood production in the Gulf increases significantly, ranging from 0.9 percent to 7.7 percent, and farmers increase their income. This is a classic wartime import-substitution effect. Because the Gulf is physically blockaded from importing its usual massive share of food, these nations are forced to artificially ramp up whatever local production they can muster at any cost, while still having access to inputs at reduced costs since they cannot be exported. Everywhere else, real income in the agrifood sector shrinks. Latin America is hit hardest during the year, down by 1.4–2.7 percent, aligning with its massive exposure to surging fertilizer prices. Asia and Africa also experience consistent real income contractions.

Results for Africa is presented as a single regional block — showing aggregate household welfare ranging from a slight 0.2 percent gain to a 1.1 percent loss — but this masks a strong internal division. It is vital to emphasize that the continent is split into two very different realities, with contrasted outcomes including both winners and losers. Oil-exporting nations such as Nigeria and Angola capture massive revenue windfalls from the surge in global energy prices, and these gains pull the aggregate African numbers upward. However, the vast majority of African nations are net importers and remain highly vulnerable. They do not benefit from higher revenues. Instead, they must pay higher premiums for fuel to keep their economies running and for the fertilizers needed to grow their food. For these countries, macroeconomic shock is severe, compounding existing debt, increasing the risk of economic crisis, and worsening food insecurity.

Figure 16 shows the breakdown across the broader agrifood sector, the farm level, and specifically cereals. For the sake of analysis, the extreme distortions of the Gulf countries are excluded, since in this case the macroeconomic effects of the conflict dominate and the sectoral breakdown becomes less relevant.

Figure 16. Potential impacts in 2026 on sectoral consumption and income, percentage change



Notes: The height of the box represents the spread between the short, medium and long term scenarios. Most of the time, the long term scenario, with the larger and more persistent shock has the more adverse outcomes, but not always due to indirect effects.
Source: MIRAGRODEP simulations.

A clear narrative emerges. The more reliant a sector is on fertilizers, the deeper the economic impact. These results clearly demonstrate that cereal producers experience the heaviest losses, confirming their vulnerability as intensive fertilizer users. At the global level, in the most extreme scenario for 2026, broader agrifood income drops by 1.89 percent. When this is narrowed down to the farm level, the loss deepens to 3.01 percent. However, for cereals, the decline plunges to a severe 4.78 percent. Even in the short-term scenario — where the main disruptions are limited to one month and not all planting decisions are affected — global farm impacts are milder (-0.67 percent), but cereal producers already feel the pressure more acutely (-0.78 percent). This illustrates that when fertilizer prices spike, high-input crops such as rice, corn, and wheat suffer faster and experience disproportionately stronger margin compression.

Across almost all scenarios and regions, the shock to producer income is significantly larger than the decline in household food consumption. Only part of the cost increase is passed on to consumers. This creates a massive margin squeeze for farmers, who absorb the bulk of fertilizer and energy price shocks, while consumers experience a smaller, though still painful, reduction in available food.

The most striking regional disparity is Latin America's vulnerability, consistent with the earlier discussion of intensive, high-yield agricultural models like Brazil's and the ex-ante vulnerability assessment in Section 3.1.2. For the 2026 cropping season, in the most severe scenario, Latin American cereal producers face a 7.27 percent drop in net real income, compared to Africa (1.31 percent drop) and Asia (4.21 percent drop).

Examining the 2030 outcomes under the long-term scenario allows the assessment of the lasting economic scarring of a prolonged conflict. Comparing the global economy in 2030 with and without the conflict shows how initial supply shocks evolve into structural macroeconomic drags. While the acute shocks of 2026 moderate as markets adapt, the global economy settles into a persistent state of reduced growth, higher energy costs, and increased trade costs.

The Gulf region shows painful adaptation by 2030. Food consumption remains 7.30 percent below a non-conflict baseline, an improvement from the roughly 17 percent loss in 2026. Elsewhere, the agricultural sector is permanently constrained by higher costs and slower growth, although the localized panic of 2026 has eased. Real agrifood producer income remains 1.38 percent below baseline.

Latin America's agrifood sector, hit by declines of 2.68 percent in 2026, partially recovers to a decline of 1.67 percent by 2030, reflecting structural adaptation as farmers shift away from fertilizer-intensive crops and develop domestic input alternatives. Yet they cannot fully offset the penalties of a disrupted global market.

Globally, households continue to consume less than in a peaceful baseline. Food consumption remains 0.94 percent lower, and household welfare is down 1.45 percent. The 2030 simulation confirms that under a prolonged conflict, there is no full recovery. Markets establish a new, equilibrium with slightly poorer economies.

4.2 Additional risks

4.2.1 Macroeconomic long-term risks

The ongoing conflict in the Persian Gulf carries significant long-term risks for both regional and global economies. Disruptions in oil, gas, and fertilizer exports have already triggered immediate price spikes, but prolonged instability could exacerbate inflationary pressures, depress economic growth, and destabilize markets worldwide. Sustained high energy prices would increase production and transportation costs for goods and services far beyond the region, fueling broader commodity price inflation and placing additional strain on already vulnerable populations. Countries heavily dependent on Gulf imports, particularly in Asia, Africa, and the Middle East, could experience compounded economic shocks, with rising input costs undermining agricultural production, industrial output, and household purchasing power but also leading to depreciation of the currencies of low-income countries.

The International Monetary Fund has highlighted that a protracted closure of the Strait of Hormuz or extended supply interruptions could push global inflation significantly higher while slowing recovery in fragile economies, potentially triggering a worldwide ripple effect on trade, investment, and food security. The reactivation of inflationary pressures could lead central banks to react by increasing interest rates, putting more pressure on economic growth, indebted countries, and farmers (Georgieva, 2026).

4.2.2 Global food and energy security risks

Beyond economic effects, the crisis poses systemic risks to global food and energy security. Fertilizer shortages, combined with higher energy costs, threaten future agricultural yields, particularly in regions heavily reliant on Gulf nitrogen and phosphate supplies. Lower crop production could trigger spillover effects across food commodities, where tighter grain supplies drive further food price inflation and exacerbate hunger in low-income, import-dependent countries. Simultaneously, remittance flows from the Gulf, a lifeline for millions of households in South Asia and East Africa, are at risk, potentially reducing household income and consumption for tens of millions of people.

4.2.3 Extended move of food to biofuels

A sudden or prolonged shift toward biofuels in response to high fossil-fuel prices can create significant short- and long-term risks for global food commodity markets by strengthening the link between energy and agricultural prices and by diverting crops, inputs, and land and water away from food production. Historically, expansions in biofuel production, especially for ethanol and biodiesel derived from staple crops such as corn, soybeans, and palm oil, have exerted upward pressure on those crop prices by increasing demand for feedstocks that are also core food and livestock feed commodities. For example, research from Persson (2015) shows that the surge in biofuel production in the mid-2000s was associated with substantial increases in corn, with estimates indicating that increased biofuel demand contributed significantly to price rises in those markets as biofuel feedstock demand outpaced supply growth in the short run.

When energy prices spike, as in the wake of disruptions to Persian Gulf oil exports, policymakers and markets can lean even more heavily on biofuels as a partial energy alternative. This policy-driven increase in demand for biofuel feedstocks, still reinforced by tax incentives, can encourage farmers to shift acreage toward corn, soybeans, or other energy crops and away from other staple food crops. That shift reduces the effective supply of food crops and compresses inventories, which can push food commodity prices higher over the medium term. Over time, mandates for ethanol and biodiesel blending could shift long-term incentives and change acreage enough to ripple through grain markets and influence other food price indices.

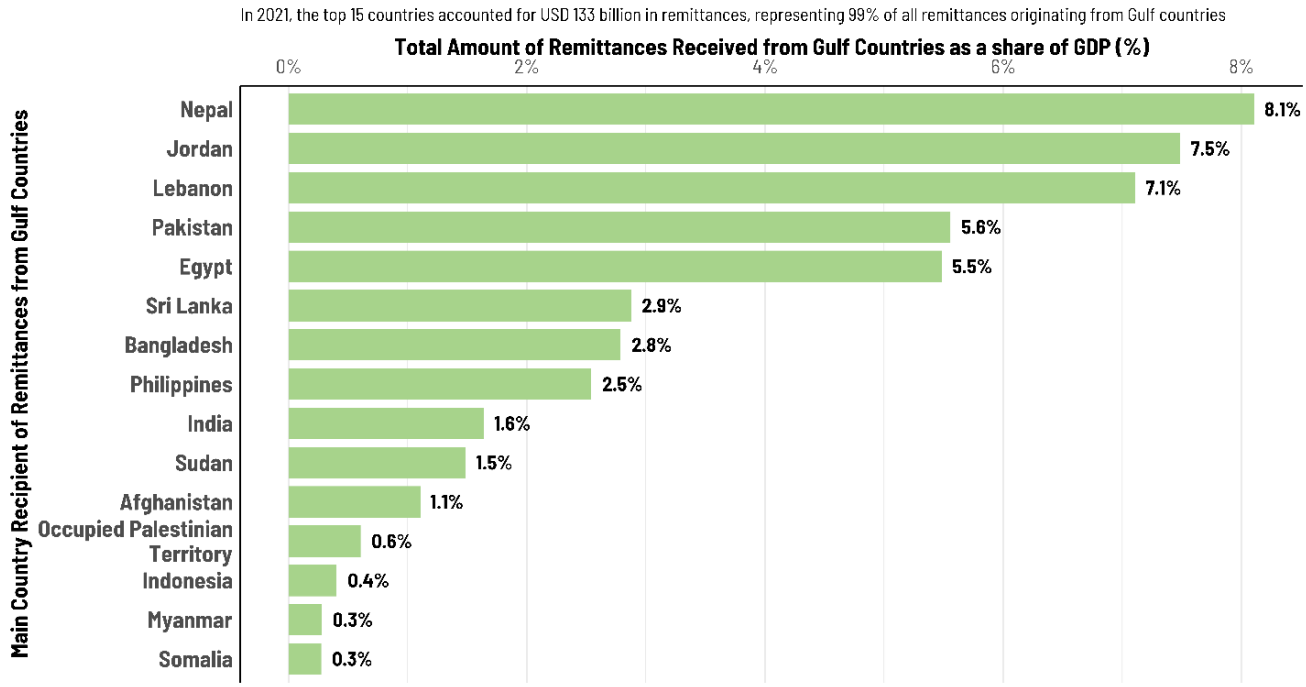
This food-versus-fuel dynamic poses a particular risk as the world faces compound shocks — higher fertilizer and fuel costs, increased biofuel mandates, and potential crop production shortfalls. If farmers plant more biofuel feedstocks to capture higher returns or to meet regulatory requirements, cropping patterns can shift further, tightening food crop availability and amplifying price volatility. In a stressed global market, this could lead to larger supply shocks and stronger food price responses in 2027 and beyond, especially if other supply constraints like lower yields from fertilizer shortages or adverse weather coincide with elevated demand for biofuel feedstocks. In this scenario, the feedback loop between energy policy, crop prices, and food availability compounds the original crisis, exacerbating food insecurity risks in import-dependent regions.

4.2.4 Reduction of remittances

Another indirect but significant impact is through labour and remittance linkages. The Gulf economies host millions of foreign workers from South Asia, Southeast Asia, and Africa who send home billions of dollars in remittances each year (Figure 17)(World Bank, 2023). The conflict threatens those livelihoods. For instance, there are approximately 9 million Indian expatriates in the GCC states sending home USD 50 billion annually, roughly 3 percent of India's GDP. If security conditions force expatriate workers to return or if Gulf economies contract due to the conflict, countries like India, Pakistan, Bangladesh, Nepal, the Philippines, and Egypt could see a sharp drop in remittance inflows.

This loss of income for tens of millions of households would have knock-on effects on poverty and consumption in those countries. As one example, Indian officials warn that a protracted conflict not only endangers energy security but also could significantly dent India's economic growth by reducing those remittances and placing 9 million Indian jobs in the Gulf at risk. Other South Asian countries like Pakistan, Bangladesh, and Nepal and East African nations with large diaspora in the Gulf face similar concerns.

Figure 17. Main countries exposed to remittances loss (2021)



Source: World Bank. 2023. The Global Knowledge Partnership on Migration and Development (KNOMAD) database. [Accessed on 14 March 2026]. https://data360.worldbank.org/en/dataset/WB_KNOMAD

4.3 Policy options to mitigate risks

Ensuring regional stability and maintaining freedom of navigation in the Persian Gulf are essential for global energy and food security. Diplomatic engagement to de-escalate tensions and reopen the Strait of Hormuz for civilian trade should be prioritized. Such efforts are critical to prevent localized disruptions from cascading into wider economic and humanitarian crises.

The Persian Gulf conflict poses immediate and systemic risks to global energy, fertilizer, and food markets. A coordinated, multi-layered policy response is urgently required to manage short-term shocks, safeguard vulnerable populations, and strengthen long-term resilience. Recommendations are structured across short-, medium- and long-term horizons.

4.3.1 Short-term measures: stabilize markets and ensure supply flows

Develop alternative trade routes and contingency logistics. Reduce dependence on the Strait of Hormuz by expanding pipeline capacity for oil and gas to Red Sea and Mediterranean ports, improving rail and trucking corridors — for example, through Türkiye or the International North-South Transport Corridor — and securing access to alternative ports, including Oman and Red Sea hubs. Temporary measures such as naval escorts for commercial shipping and war-risk insurance guarantees can help restore partial flows through Hormuz.

Enhance market monitoring and preparedness. Agencies like the IEA and FAO should continuously monitor oil, gas, fertilizer, and staple food markets to detect volatility and emerging supply gaps. Early warning systems can trigger interventions, including strategic petroleum reserve releases or targeted fertilizer stock allocations, to prevent panic-driven price spikes.

Support vulnerable import-dependent countries. Low-income nations facing surging import costs require immediate support. International financial institutions and donor governments should provide emergency food aid, balance-of-payments support — for instance, through FAO's Food Import Facility — and humanitarian assistance to countries at risk, including Yemen, Lebanon, Somalia, and Afghanistan. Safety nets and targeted subsidies are essential to shield populations from sharp price increases.

Finance farmers and maintain agricultural production. Access to credit and financial support for farmers exposed to higher fertilizer and energy costs is critical to avoid liquidity constraints that could compromise planting decisions and future yields. Policies should protect farmers from interest rate spikes caused by tight monetary conditions.

Avoid short-term biofuel demand surges. In response to high fossil-fuel prices, incentives and subsidies for biofuels should be carefully managed to prevent a rapid diversion of food crops toward energy production, which could exacerbate food price volatility.

4.3.2 Medium-term measures: diversify supply and strengthen regional cooperation

Diversify import sources and enhance regional coordination. Countries dependent on Gulf energy, fertilizer, or food supplies should expand procurement from alternative partners, including North America, Latin America, and Africa, adopting an optimal trade partner portfolio[2] and investing in the development of new supply chains. Fertilizer-importing nations can explore North African sources or invest in regional production capacity. Gulf States and neighbouring countries should coordinate reserve sharing and avoid export restrictions that worsen shortages.

Promote market resilience and contingency planning. Governments should continue to develop risk-mitigation strategies for supply disruptions, including maintaining strategic reserves of critical commodities and reinforcing storage and distribution infrastructure.

4.3.3 Long-term measures: build structural resilience

Invest in sustainable domestic agriculture and energy alternatives. Countries should invest in sustainable agricultural productivity and input-saving technology to expand domestic food production where feasible. Globally, investments in renewable energy and energy efficiency can reduce reliance on volatile Gulf oil and gas supplies.

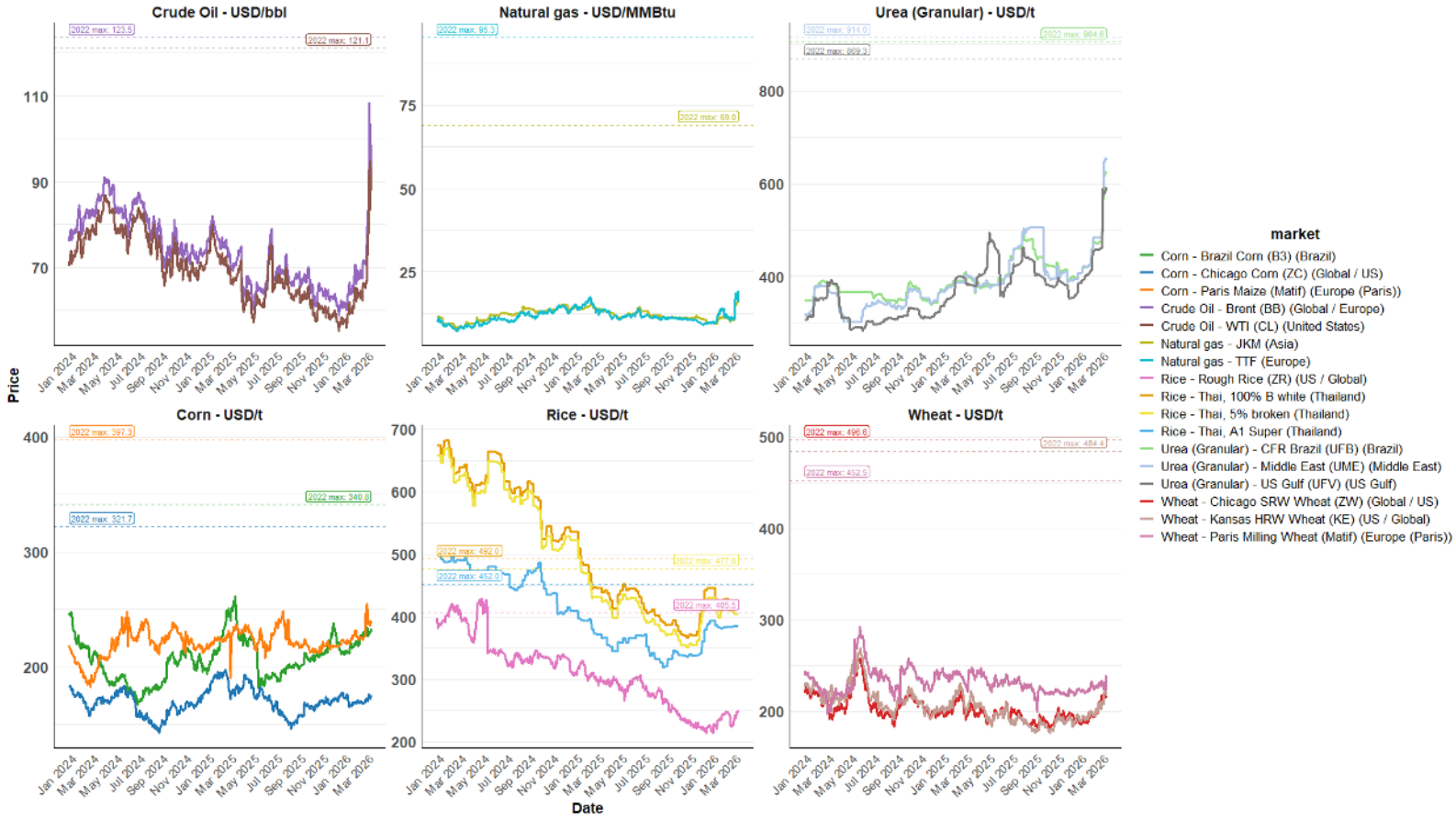
Develop sustainable fertilizer production. Localized production, including green ammonia initiatives, can decrease dependence on imported fertilizers and buffer markets against external shocks.

Prepare for structural market shifts. Prolonged instability may drive long-term changes, including expanded biofuel production, altered cropping patterns, and persistent commodity price volatility. Policymakers should incorporate these potential shifts into agricultural, energy, and fiscal planning to mitigate cascading effects on food security and economic stability.

[2] FAO develops new innovative analytical approaches to provide cost-benefit analysis of trade diversification strategies.

ANNEX

Figure A1. Price trends for energy, fertilizers and agrifood commodities (since January 2024)



Sources: Investing.com. 2026. Commodities. [Accessed on 12 March 2026]. https://www.investing.com/commodities for Crude Oil WTI (CLc1), Brent Oil (LCOc1), Dutch TTF Natural Gas (TFAc1), LNG Japan/Korea Marker PLATTS Future (JKMc1) , US Corn (CCMc1), US Corn (EMAc1), US Corn (Cc1), Rough Rice (RRK6), US Wheat (Wc1), HRW Wheat (KWc1) and Milling Wheat N2 (BL2c1); Yahoo Finance. 2026. Urea (Granular) - US Gulf (UFV). [Accessed on 12 March 2026]. https://finance.yahoo.com/chart/UFV%3DF; Yahoo Finance. 2026. Urea (Granular) - Middle East (UME). [Accessed on 12 March 2026]. https://finance.yahoo.com/chart/UME%3DF; Yahoo Finance. 2026. Urea (Granular) - CFR Brazil (UFB). [Accessed on 12 March 2026]. https://finance.yahoo.com/chart/UFB%3DF and FAO. 2026. Food Price Monitoring and Analysis (FPMA) Tool. [Accessed on 12 March 2026]. https://fpma.fao.org/giews/fpmat4/global/#/dashboard/home; Thai Rice Exporter Association. 2026. Export Rice Prices. [Accessed on 12 March 2026]. http://www.thairiceexporters.or.th/default_eng.htm for other commodities.

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