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Greenwheel Insights

Iran conflict: cascading implications for fertiliser & food

Summary

The US-Israeli strikes on Iran and the retaliatory **closure of the Strait of Hormuz have severed one-third of globally traded fertiliser and a quarter of global Liquefied Natural Gas (LNG) supply** at a single chokepoint. **The timing is acutely damaging,** coinciding with spring planting and fertiliser application windows across the Northern Hemisphere.

A triple threat of higher fertiliser prices, potential yield reductions, and rising transport costs is set to feed through to food prices over the coming months, with few meaningful relief valves even if the conflict ends soon. **The crisis throws into sharp relief the resilience case for precision agriculture technologies and practices**.

Paul Drummond

Climate and Environment Research Lead, Greenwheel

*The **Redwheel Biodiversity Strategy aims to provide long-term capital growth** in a portfolio of global companies whose products and services have the potential to protect Natural Capital **and improve nature-related economic and societal resilience**. Portfolio Manager Amanda O'Toole sets out how agricultural technology holdings in the Redwheel Biodiversity portfolio, such as Deere & Company, **may be well placed in the current environment**.*

Company Spotlight

Deere & Company enables farmers to reduce and optimise fertiliser use through an integrated precision agriculture stack that combines GPS-guided equipment, variable-rate application, machine vision (e.g. See & Spray), and its cloud-based Operations Centre.

These tools allow inputs to be targeted - considering soil variability, crop health, and real-time conditions - rather uniform application across acreage, while preserving or improving yields**. With elevated and volatile fertiliser and natural gas prices, the value of this optimisation rises sharply, accelerating adoption opportunity for Deere's precision capabilities**.

Crucially, Deere offers not just equipment but an integrated ecosystem of software, data, and services, driving incremental revenue and margin expansion. **As adoption scales, the focus shifts toward higher-return, recurring revenue streams** with stronger pricing power. This reinforces Deere's ability to sustain returns with healthy margins and positions it as a **structural beneficiary of input cost inflation and supply chain fragmentation.**

Amanda O'Toole

Portfolio Manager, Redwheel Biodiversity Strategy

Background

The current conflict began on 28 February 2026, when the United States and Israel launched coordinated strikes against Iran (Operation Epic Fury). **Iran responded by 'closing' the Strait of Hormuz** to commercial shipping and initiating drone and missile strikes against Gulf energy infrastructure. As of mid-March 2026, **hostilities continue, and commercial traffic through the Strait has largely ceased**.

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The Fertiliser Crescent

The Strait of Hormuz is the world's most significant fertiliser chokepoint. One-third of globally traded fertiliser transits the Strait, while the Persian Gulf region produces for around half of global urea exports and 30% of global ammonia exports, both core components of nitrogen-based fertilisers.[i] Saudi Arabia supplies 20% of the world's phosphate rock[ii], the primary material for phosphate-based fertilisers, with exports from key facilities on its Gulf coast halted. Nearly half of internationally traded sulphur, another key input to phosphate-based fertilisers, are also produced in the Gulf region and remain at risk.[iii]

Fossil fuel foundations

Supported by its strategic location, **the region's cheap and abundant fossil fuel reserves are key to its position as the crux of global fertiliser supply**.

Natural gas is the primary feedstock, energy source and cost driver behind the production of nitrogen-based fertiliser, first through the extraction of hydrogen, and subsequently the production of ammonia and urea. It forms the basis of fertiliser production in the region, and via liquified natural gas (LNG) exports, for fertiliser production in other key global regions. **Around a fifth of global LNG supply remains trapped and unable to transit the Strait of Hormuz**.[iv]

Sulphur for phosphate-based fertilisers is produced as a byproduct of oil and gas refining in the region.

Reap what you sow: looming food security challenges

In just three weeks fertiliser prices around the world have spiked and production and use has curtailed. The **timing coincides with fertiliser application windows for a host of key crops across the northern hemisphere**, where around 90% of the global population live. Impacts by key region are:

- **United States**: facing a 25–35% spring supply deficit at the worst possible moment for corn planting; urea prices up >30%,[v] with up to 1.5 million acres potentially switching from nitrogen-hungry corn to soybeans.[vi]

- **Europe:** domestic fertiliser production has been constrained since 2022 by high gas costs since the start of the conflict in Ukraine, while Egyptian urea prices (its imported alternative) have grown by 30% while production is squeezed by Israeli gas field disruptions.[vii] This comes as fertiliser applications for winter cereals is already underway.

- **Indian subcontinent:** India is doubly exposed. It is the world's largest urea importer and is heavily reliant on LNG for domestic fertiliser production, which is now heavily curtailed.[viii] This comes just ahead of the critical March–May stocking window for the June Kharif rice season. In Pakistan, LNG supply disruptions have forced the country's two largest urea producers offline, threatening domestic nitrogen supply ahead of the spring wheat season.[ix]

- **China:** imports half of its sulphur from the Gulf and is now drawing down strategic reserves to protect spring planting. Depleted reserves mean China is likely to progressively restrict fertiliser exports, removing one of the few potential alternative global supplies.[x]

However, **Sub-Saharan Africa is potentially the most acutely vulnerable region**, with over 90% of fertilizer imported, no strategic reserves and with disruption coinciding with Kenya and West Africa's main planting season.[xi]

A triple threat of higher fertiliser prices, potentially lower crop yields and higher transport costs are likely to feed through to food prices in the coming months. Alongside growing pressure on consumers, farmers are likely to experience compressed margins.

These pressures are likely to worsen if the conflict continues, with few significant relief valves. **Even if the conflict ends soon significant relief would not be felt for weeks to months**, as facility repairs and supply chain replenishment takes time.

Precision agriculture: Investing for resilience

Globally, crops use around half of the nitrogen applied to them; the remainder is lost to the surrounding environment.[xii] **Precision agriculture is an approach to farming that uses data, technology, and real-time monitoring** to manage crops and inputs at fine spatial and temporal resolution, **allowing efficient use of key inputs such as fertilisers, cutting waste, costs and environmental impact while preserving yields**.

Precision agriculture can reduce nitrogen fertiliser use by roughly 10–20% without yield loss, **rising towards 30–40%** with the most advanced implementation or where inefficiencies are greatest. [xiii] **Global adoption remains relatively low** - fewer than 25% of farms in high-income countries use even basic precision tools, falling to 5% for low- and middle-income economies.[xiv] As such, **the opportunity for precision agriculture to deploy as a resilience measure to buffer future shocks is large** and **has been bought into sharp relief.**

[i] UNCTAD (2026)
[ii] Maaden (2026)
[iii] NDSU (2026)
[iv] Basquel (2026)
[v] White (2026)
[vi] Hanrahan (2026)
[vii] Minihan (2026)
[viii] Parija (2026)
[ix] Thukral & White (2026)
[x] Bloomberg (2026)
[xi] Oolo (2026)
[xii] Govindasamy (2026)
[xiii] Ruder (2026)
[xiv] McKinsey (2023)

Key Information

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