Four years of disruptions have profoundly reshuffled the fertilizer market

23/03/2025

Confidential

Key points

After four years of major disruption, the global fertiliser market is showing signs of stabilising in 2025. Prices for the three basic fertilisers - nitrogen, phosphate and potassium - used on their own or to produce complex blends, are returning to their historical averages. This normalisation is due in particular to the fall in the price of natural gas, the main input for production, which has reduced the production costs of nitrogen fertilisers (urea and ammonia). After falling in 2022, production is on the rise again, and production capacity is set to increase significantly over the next few years.

The world market remains dominated by a handful of countries, with Russia, the EU, China, Canada and five other countries accounting for more than three-quarters of global exports. But this apparent stability masks major shifts in the market.

Russia has thus strengthened its position as world export leader, with its share rising from 16% to almost 19% between 2019 and 2023: Europe's decision to reduce its purchases of Russian natural gas has led to a gas surplus in Russia, enabling Russian producers to increase their production of ammonia and urea. Russia has managed to maintain its production of phosphate and potash, enabling it to produce complex fertilisers in large quantities.

European producers, deprived of Russian gas, have on the contrary been forced to close many ammonia and urea plants, sometimes permanently. They are also facing other challenges, such as the structural decline in fertiliser consumption and increasingly stringent decarbonisation requirements. Meanwhile, US and Canadian producers are not affected by such turbulence, but they could suffer the effects of a tariff war between Washington and Ottawa.

For its part, China, the world's leading producer and consumer of fertilisers, has embarked on an in-depth rationalisation of the sector to reduce consumption that has become excessive. It has also enacted export restrictions to guarantee availability on the domestic market, which have caused its share of the worldwide export market to fall. China is also seeking to diversify its supplies of potash, the only class of fertiliser for which it is not self-sufficient. Major Chinese investments could make Laos the world's second largest producer after Canada, overtaking Russia and Belarus.

Finally, Saudi Arabia has taken advantage of its phosphate reserves and access to cheap gas to become a major player in the market in just a few years, with exports now comparable to those of Morocco and the United States.

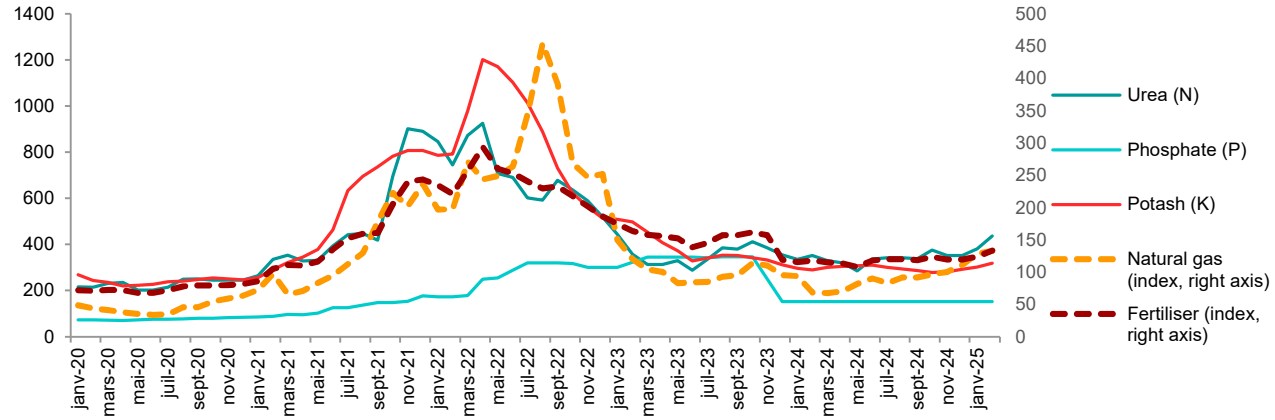
1. The global market is gradually returning to balance

1.1. After four years of crisis, prices are back to historical averages

After **four years of major disruption on the markets for ammonia and potash**, two of the three main categories of fertiliser along with phosphate, the **beginning of 2025 has seen a gradual normalisation of world prices**. According to the World Bank, fertiliser prices have returned to a **level comparable to the 2010-2020 average**[1]. However, the World Bank index is still almost **twice as high** as the January 2020 price.

This improvement is mainly due to the **fall in the price** of **urea**, from more than USD 925/tonne at the height of the crisis, in April 2022, to USD 436/tonne in February 2025, according to the World Bank[2] (graph 1). This fall can be explained by the **fall in natural gas prices** from the levels reached during the energy crisis of 2021, and then after Russia's invasion of Ukraine in February 2022. Urea is produced from ammonia, which is itself obtained by transforming natural gas.

Graph 1: Prices of the three main classes of fertiliser, in USD/tonne



Source: World Bank

The price of **potash** also fell to USD 318/tonne in February 2025, down from USD 1,200/tonne in April 2022. This **surge had been mainly triggered by the sanctions imposed by the European Union (EU) and the United States against Belarus**, a major producer and exporter (see below), and by China's decision to restrict its exports at the beginning of 2022[3]. Once again, these factors have dissipated. In December 2022, the EU eased sanctions against certain "oligarchs"[4] linked to Belarusian potash, and Minsk gradually circumvented the sanctions (see also below).

Lastly, **phosphate** prices have fallen back sharply**, stabilising at USD 152.5/tonne.** It had **quadrupled between January 2021 and January 2023**, reaching USD 345/tonne, due to strong demand, confinement in China - the world's leading producer[5] - and the impact of the war in Ukraine, Russia being another major exporter. The contract price set by Morocco's **OCP** (Office chérifien des phosphates), the world's second-largest producer and leading exporter, and used as a benchmark by the World Bank and others, has been

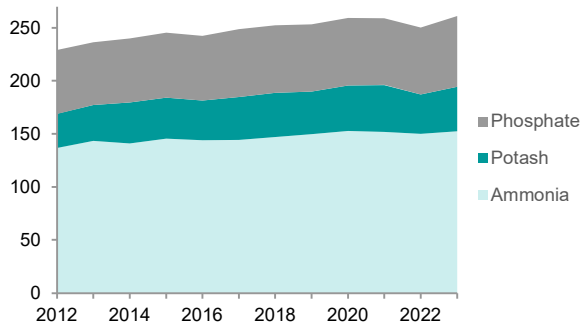
[1] Fertilizer prices stabilize amid lower input costs and trade shifts, *World Bank Blogs*, 15/01/2025
[2] Commodity Markets, *World Bank*, consulted on 11/03/2025
[3] How sanctions on Russia and Belarus are impacting exports of agricultural products and fertilizer, *IFPRI*, 09/11/2022
[4] EU agrees to ease Russia fertilizer curbs after row, angering Ukraine, *POLITICO*, 15/12/2022
[5] Phosphorus price spikes: A wake-up call for phosphorus resilience, *Frontiers*, 01/03/2023

stable since November 2023. This relatively low price is due to **increasing competition from other producers**, such as Egypt, which is forcing the Moroccan giant to maintain low prices.

1.2. Production of key inputs back on track

The factors mentioned above also led to a **fall of production in 2022**, **particularly for potash**, which fell from 44 to 37 million tonnes (Mt) of nutrient equivalent between 2021 and 2022, and to a lesser extent **for ammonia** (152.8 to 150 Mt of nutrient equivalent between 2020 and 2022). **But production has been on the rise again since 2023 for all three classes of fertiliser** (graph 2). The trend should remain favourable: **the International Fertilizer Association (IFA) expects installed production capacity worldwide to grow by 8% between 2023 and 2028 for ammonia, 11% for phosphate, and even 19% for potash**, driven by investments in Russia and a gigantic Chinese project in Laos (see box below).[6]

Graph 2: World production of the three main classes of fertiliser, in Mt of nutrient equivalent



Source: International Fertilizer Association (IFA)

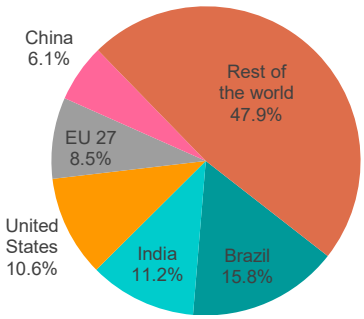
Thanks to these new capacities, the IFA predicts a **capacity surplus of several million tonnes** for each of the three classes of fertiliser by 2028. However, actual availability could fall, for example in the event of a new economic or geopolitical shock, or the **rise of other industries consuming the same raw materials**. In its calculations, the IFA has not taken into account a **potential increase in the production of LFP (lithium iron phosphate) batteries** outside the Chinese market. This technology, increasingly favoured by the automotive industry, could therefore account for 3% of global demand for phosphorus pentoxide (P2O5, a phosphate derivative used as a fertiliser as in LFP batteries) by 2030[7]. The use of ammonia in the energy sector, which is still in its infancy, could eventually cause major disruption to the fertiliser market.

1.3. World trade is still dominated by a handful of countries

The global fertiliser market remains highly concentrated, with **Russia, the EU, China, Canada and five other countries accounting for over 70% of global exports** (graph 4).

This concentration is also found among importers: the EU, Brazil, India, the United States and China alone account for just over half (52.1% in 2023) of total imports (graph 3). The presence of China and the United States as both exporters and importers can be explained by the complementary nature of the three classes of fertiliser. China, the world's leading producer of phosphate and ammonia, imports large quantities of potash. The United States, on the other hand, is dependent on its neighbour Canada (see below) and on Russia for potash.

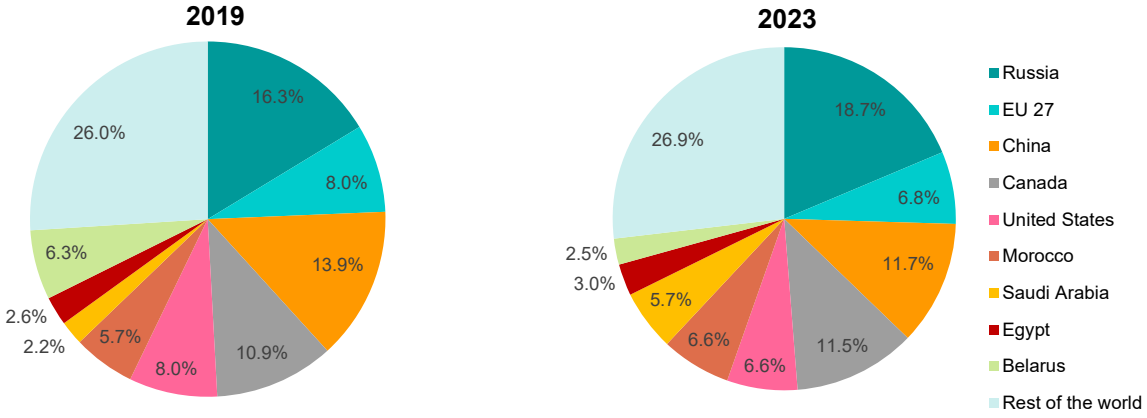
Graph 3: World's main fertiliser importers, 2023



Source: TradeMap data, GSA analysis.

[6] Summary Report: Medium-term fertilizer outlook 2024-2028, International Fertilizer Association, 18/07/2024
[7] Critical materials: Batteries for electric vehicles, International Renewable Energy Agency, 26/09/2024

Graph 4: World fertiliser exporters (% of total)



Source: TradeMap data, GSA analysis. Intra-EU trade has been subtracted from total EU exports. The HS code used (31) covers the three main classes of fertiliser (N, P, K) in finite form, as well as binary and ternary fertilisers.

As graph 4 shows, these four years of crisis have resulted in **substantial changes in the market shares of the main exporters**:

- Russia has become the world's leading fertiliser exporter, with its market share up by almost three points to 18.7%.
- **China and the European Union have seen their relative shares fall**.
- Among medium-sized exporters**, Belarus' market share has been divided by three**; however, this collapse can be explained, at least in part, by the falsification of certain customs data to evade European sanctions.
- Saudi Arabia has become a key player: with its share of world exports rising from 2% to 5.7% between 2019 and 2023, the kingdom is now virtually on a par with Morocco and the United States.

2. Russia strengthens its dominance on the global fertiliser market

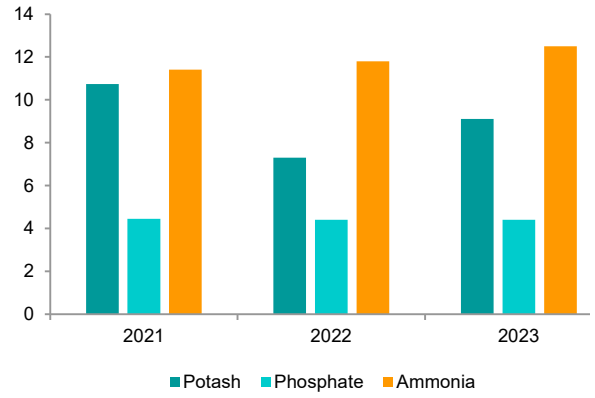
2.1. Sanctions on Russian gas have boosted its fertiliser production

The start of the war in Ukraine in February 2022 has paradoxically enabled Russia to **strengthen its its position as the world's leading fertilizer exporter**: almost 19% of exports by value in 2023, compared with 16.3% in 2021. **The main factor is linked to the retaliatory measures taken by the EU** against Russia following the start of the war. Western countries ruled out any sanctions against Russian fertiliser exports to avoid any shock on world food markets, but the EU limited its imports of Russian natural gas. In so doing, it deprived Europe's main nitrogen fertiliser producers of their main source of input, while **creating a surplus of low-cost gas in Russia**, enabling Russian ammonia and urea producers to increase their output, thanks to new factories, the construction of which had begun before the war[8,9] (Russia has made agri-food and related industries a strategic priority since the first sanctions were imposed following the invasion of Crimea in 2014).

[8] New 2200 MTD Urea plant successfully commissioned - Casale, *Casale*, 22/12/2022
[9] Metafrax produced the first 300 thousand tons of urea, *metafrax.ru*, 04/08/2023

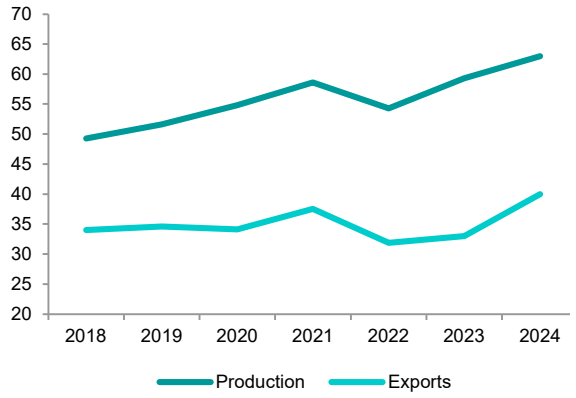
In other words, **Russia has transformed the gas it previously exported to the EU into ammonia and urea, exported in the form of fertilisers.**

Graph 5: Production of the three main classes of fertiliser, Russia (Mt)



Source: TASS. Figures expressed in equivalent

Graph 6: Fertiliser production and exports, Russia (Mt)



Source: RAPU, Interfax. Figures expressed in gross weight

Furthermore, Russia has managed to **maintain its phosphate production and to restore potash production**, which had fallen by 32% between 2022 and 2023 after some European buyers decided to source their supplies elsewhere[10] (graph 5). As a result, Russia has **no shortages of the three main classes of** fertiliser and can therefore produce complex fertilisers in large quantities. According to the Russian Association of Fertiliser Producers (RAFP), **Russia's total fertiliser production reached 63 Mt in 2024**[11] (+6% year-on-year), a **performance unmatched since the Soviet era**. Domestic consumption, after rising sharply in the 2010s, has stabilised: 5.5 Mt in 2023[12], compared with 5.4 Mt in 2022: surplus production can therefore be exported without fear of domestic shortages.

The sector is also strongly supported by Vladimir Putin himself, who is stepping up his meetings with industry leaders[13,14,15] and visits to production sites. The Kremlin views fertiliser exports as strategic: they generate **foreign currency revenue** and are a **diplomatic tool**, with Moscow promising deliveries at preferential rates to certain countries in exchange for their support, notably to the United Nations[16].

The case of the missing Belarusian potash

Part of the increase in Russian exports may also be explained by the difficulties faced by its Belarusian ally. **The world's third-largest potash producer behind Canada and Russia in 2020, Belarus saw its exports sanctioned by the United States and the European Union in 2021**, following the unrest caused by the disputed presidential election. In line with these measures, in January 2022 Lithuania blocked deliveries via its territory, through which over 90% of Belarusian exports passed. **Belarusian exports initially collapsed,**

[10] Metals and the invasion: Russian potash exports rebound, expansion at risk, *S&P Global Market Intelligence*, 24/02/2023
[11] Expressed in gross weight and not in tonnes of nutrient equivalent
[12] Russia could boost fertilizer production to 64-65 mln tonnes, exports to over 42 mln tonnes in 2025 - assoc, *interfax.com*, 27/12/2024
[13] Meeting with President of the Russian Association of Fertiliser Producers (RAFP) Andrei Guryev, *President of Russia*, 03/05/2023
[14] News | PJSC Uralkali, www.uralkali.com, 13/01/2022
[15] Russia is ready to expand fertilizer exports - Fertilizer Daily, *Fertilizer Daily*, 02/12/2022
[16] Growing foothold: how Russia donates fertiliser to deepen African alliances | Global development | The Guardian, *the Guardian*, 13/03/2023

falling from 11.7 Mt in 2020 (the last year in which Belarus published its figures) **to 4.1 Mt million tonnes in 2022, according to "mirror data" reported by importing countries**[17]. This fall explains the collapse of Belarus' share of world exports between 2019 and 2023 (graph 3).

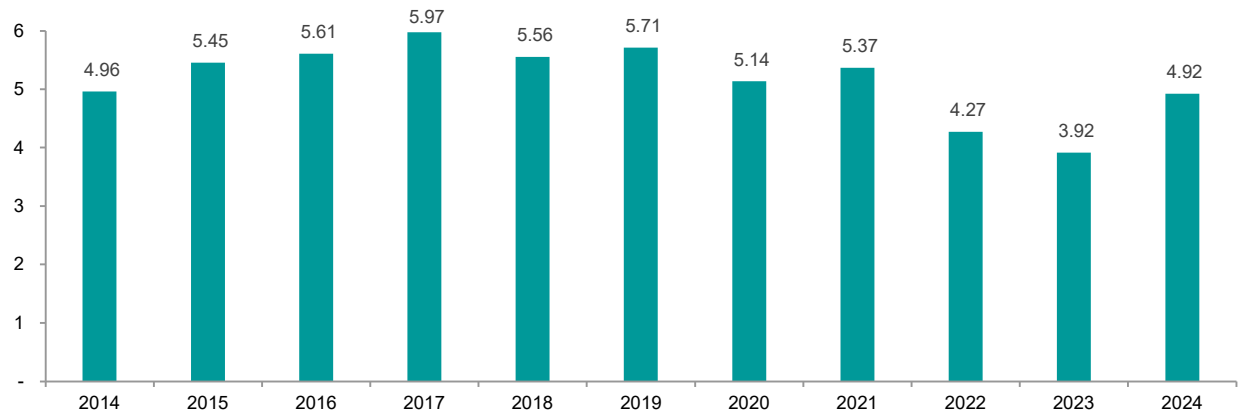
Sanctions and the Lithuanian blockade forced Belarus to find **new export routes via Russia**: by rail to China, through the port of St Petersburg on the Baltic[18], and more recently the port of Makhachkala on the Caspian, to Central Asia and Iran[19]. Belarus has thus been able to **double its exports to China between 2022 and 2023**. By contrast, it has virtually lost access to the Indian market and seen its sales to Brazil halved[20].

However, Belarus is gradually managing to recover its exports: **8.8 Mt were shipped via Russia in the first 10 months of 2023**, according to Russian sources[21], and would have reached 10 Mt in 2024, according to the specialist firm Argus[22], testifying to Minsk's ability to circumvent Western sanctions. However, **this upturn in exports is not reflected in the customs statistics**: Minsk no longer provides figures for its phosphate exports, and the mirror data from its partners show only 4.8 Mt of exports in 2023. With good reason: **some exporters falsify goods manifests to disguise their Belarusian origin**, which **is replaced by fictitious origins**, such as Uzbekistan (which does not produce potash)[23]. Some Belarusian production could also be declared as being of Russian origin: Russian potash exports increased by 70% in the first half of 2024.[24]

2.2. Russian exporters look to new markets

The rise in Russian exports has been accompanied by a substantial redistribution of its export markets. **The EU, hitherto Russia's biggest customer, has considerably reduced its share of Russian exports, from between 17% and 20% to just 10% by 2023**. This decline is not due to sanctions, which have never affected

Graph 7: Russian fertiliser imports by the European Union, in Mt/year



Source: Eurostat

the Russian fertiliser sector, but to voluntary measures taken by certain buyers, for reputational reasons or out of fear of sanctions in other sectors (logistics, banking transactions, etc.) or of doing business with Russian "oligarchs" who are also subject to sanctions. According to Eurostat, European imports fell from 5.3 Mt in 2021 to 4.2 Mt the following year and 3.91 Mt in 2023. However, they **rose sharply in 2024** (4.92 Mt), mainly as a

[17] TradeMap data
[18] A Murky Cypriot Firm Is Helping Belarus Export Potash - In Breach of EU Sanctions, *OCCRP*, 08/08/2024
[19] Belarus sends potash fertilizers to Iran via Russia | Pozirk, *Pozirk*, 12/11/2024
[20] Tough business in tough times: Belarusian exports of potash fertilisers | OSW Centre for Eastern Studies, *OSW Centre for Eastern Studies*, 20/11/2024
[21] Belarus increases mineral fertilizer exports through Russian territory in 3.4-fold in Jan-Oct - expert, *Interfax*, 27/11/2023
[22] Global potash market stabilizes: the impact of Russian and Belarusian exports - Fertilizer Daily, *Fertilizer Daily*, 24/10/2024
[23] Falsified fertiliser documents - a concerning trend | Gard's Insights, *Gard*, 01/02/2022.
[24] Exports of potash fertilizers from Russia increased by 70% - Eurasia Business News, *Eurasia Business News*, 07/08/2024

result of urea exports, which Russia produces at low prices thanks to its natural gas surplus[25] (graph 7). The situation could change: **on 14 March, EU member states approved[26] a proposal from the European Commission[27] to increase customs duties on these imports over the next three years**. These measures also apply to Belarus.

Russian exports were mainly rerouted to India and Brazil, and remained high in China. **The United States also remained a major buyer of Russian fertilisers**, with a share of around 10%, unchanged since 2021 (table 1).

Lastly, **Africa's share of Russian exports has remained relatively flat at around 5%**. However, for reasons of diplomatic influence, Moscow has made this market a priority[28], and is increasing its political contacts,[29,30] and commercial contacts[31] to increase its market share on the continent. However, it faces stiff competition from Morocco - Africa's leading supplier of fertiliser - as well as from Egypt and other players such as Saudi Arabia.

Table 1: Main Russian fertiliser importers, as a share of export value

	2016	2017	2018	2019	2020	2021	2022	2023
Brazil	13%	17%	20%	21%	21%	27%	27%	23%
India	5%	4%	4%	5%	7%	4%	13%	17%
United States	7%	8%	11%	11%	8%	10%	9%	10%
EU27	20%	20%	18%	18%	17%	17%	14%	10%
China	10%	6%	5%	8%	8%	6%	5%	8%
Africa	7%	6%	5%	5%	6%	6%	4%	5%
Rest of the world	42%	42%	38%	34%	34%	33%	30%	27%

Source: TradeMap, GSA analysis

2.3. Russian production should continue to grow

The industrial capacity of Russian fertiliser producers should continue to grow in the coming years. **After a record year in 2024, they are already anticipating a 3% rise in production and a 5% increase in exports in 2025**[32]. More than USD 6 billion has been invested in the construction of several new ammonia and urea plants, which - if they are all completed - will **add at least 2.8 Mt of ammonia capacity and, more importantly, almost 6.5 Mt of urea**, almost doubling production capacity. Export terminals on the Baltic[33] and the Black Sea[34] are also planned. All these investments will enable Russia to consolidate its status as the world's leading exporter.

[25] As Russia shifts from gas exports to fertilizers, it is time for the EU to act - Euractiv, *Euractiv*, 19/06/2024
[26] Agreement within the EU on taxes targeting new Russian agricultural products | Mediapart, *Mediapart*, 14/03/2025
[27] Commission document register - COM(2025)34, *ec.europa.eu*, 28/01/2025
[28] Putin says Russia will continue working on supply of grain, fertilizers to Africa, www.aa.com.tr, 25/07/2023
[29] African Hunger Crisis Deepens as Leaders Call for Sanctions Relief During Russia Visit - NewZimbabwe.com, *NewZimbabwe.com*, Date not found
[30] Russian producers of mineral fertilizers are ready to double their shipments to African countries, *Russia-Africa Summit*, 02/08/2023
[31] PhosAgro Increased Shipments to Africa by One Third in 2024, *PhosAgro*, 25/02/2025
[32] Russia to boost fertilizer exports by 5% in 2025 - Association - Business & Economy - TASS, *TASS*, 12/03/2025
[33] New Russian ammonia export terminal met with skepticism by European market | S&P Global, *S&P Global Commodity Insights*, 20/12/2024
[34] Russia's Togliattiazot to start construction in March for transshipment complex for ammonia, urea at Black Sea | ICIS, *ICIS Explore*, 07/03/2023

3. Declining demand, climate targets drive EU fertiliser crunch

3.1. Domestic market in structural decline

In addition to reduced supplies of Russian gas (see above), the EU fertiliser sector is experiencing other difficulties. The first is the **structural decline in fertiliser consumption by European agriculture**. This trend, which has been underway since the late 1980s, is continuing: consumption has fallen from 160 kg/ha of arable land in 2017 to 124 kg/ha in 2022, according to the World Bank[35]. The trade association Fertilizers Europe expects **consumption of nitrogen to fall by 4%, phosphate fertilisers by 1%** and potassium fertilisers by 2% between now and 2032[36]. This reduction is the result of European and national regulations aimed at curbing pollution linked to the excessive use of fertilisers, the reduction in the area under cultivation, the development of organic farming[37], etc.

3.2. Decarbonisation targets will weigh heavily on the industry

European producers of nitrogen fertilisers will also be faced with **increasingly stringent regulations on CO_2 emissions**. The free allocation of carbon credits tradable on the European Trading System (ETS), from which they have benefited until now, will be progressively reduced from 2025 until 2034, when they will disappear entirely. And manufacturers will not be able to switch to low-cost imported ammonia: the border carbon adjustment mechanism (CBAM) will be gradually introduced until it affects 100% of the sector's imports in 2034[38].

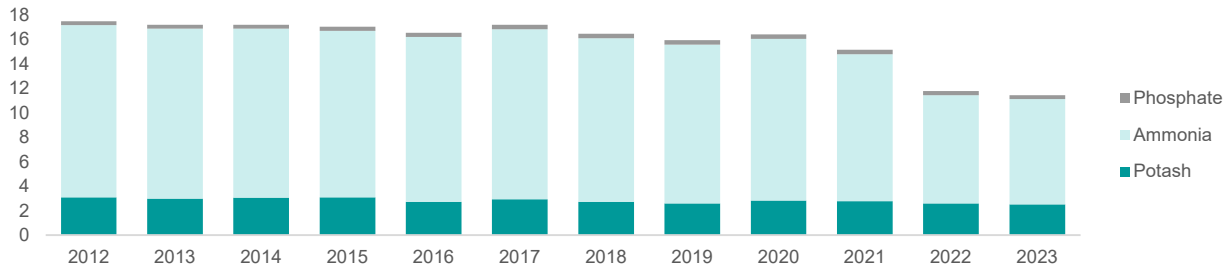
In theory, **these measures should accelerate the decarbonisation of nitrogen fertiliser production**. But replacing natural gas with "green" hydrogen (produced by electrolysis using renewable energy sources), the EU's preferred option, is still far from being economically viable. The EU has only a few dozen MW of electrolysis capacity, compared with the 6,000 MW theoretically needed to produce the 2.1 Mt of hydrogen consumed each year in the EU to produce ammonia[39]. The median cost of 'green' hydrogen in Europe, around €6/kg, is still twice as expensive as conventional hydrogen[40]. As for 'blue' hydrogen - produced from natural gas, but sequestering the associated CO2 emissions - it comes up against the still high cost of carbon capture systems (CCS)[41].

3.3. Production and exports are falling

All of these factors have led to a **sharp fall in nitrogen fertiliser production in Europe[42] from 2021** - a year marked by the gas crisis - and even more so in 2022 and 2023: from 13.2 Mt nutrient equivalent in 2020, European ammonia production has fallen to 8.61 Mt in 2023 (-34%). For the other two classes of fertiliser, the fall is around 10% over the same period (graph 8). At the height of the crisis, in September 2022**, up to 70% of European ammonia production capacity was at a standstill, a percentage that was still around 20 to 30% at the beginning of 2025**[43]. While most of these closures were temporary, **several large ammonia plants have shut down permanently**: one of BASF's two plants in Ludwigshafen, Yara's plants in Tertre (Belgium) and Montoir-de-Bretagne (France), CF Fertilisers in Ince (UK), and others. **European fertiliser production will therefore not return to pre-crisis levels until the sector is thoroughly restructured.**

[35] Fertiliser consumption (kilograms per hectare of arable land) - EU, World Bank database, consulted on 14/03/2025
[36] Fertilisation | En matière d'engrais, l'Union européenne à contre-courant | Action agricole Picarde, *Action agricole Picarde*, 16/11/2024
[37] In Europe, organic farming occupies 9.9% of cultivated land, *Touteleurope.eu*, 07/07/2023
[38] Drastic changes ahead for the nitrogen fertilizer industry in the EU - Rabobank, *Rabobank*, 09/02/2024
[39] Drastic changes ahead for the nitrogen fertilizer industry in the EU - Rabobank, *Rabobank*, 09/02/2024
[40] Green hydrogen price index, *businessanalytiq*, consulted on 19/03/2025
[41] Carbon capture: despite the hype, the outlook is uncertain, Global Sovereign Advisory, 28/01/2024
[42] Here the members of the European Union, Norway, Great Britain and the Balkans
[43] EU agriculture: Time to make balanced decisions - EU Reporter, *EU Reporter*, 20/02/2025

Graph 8: Fertiliser production in Europe, in Mt of nutrient equivalent



Source: IFA. Sum of Western and Central Europe regions

Trade war risk looms over US-Canada fertiliser supply chain

Both major players in the global fertiliser market (graph 3), Canada and the United States are **mutually dependent** for their production of complex fertilisers, made up of two or three basic fertilisers. Canada is the world's leading producer and exporter of potash (32.4% and 41% of the world total, respectively)[44], supplying 85% of potash imports to the United States, which accounts for 46% of its exports[45]. With low production capacity on its soil (0.4 Mt, out of 5.3 Mt consumed in 2023), the United States can hardly do without its neighbour to the north for this essential element, particularly for maize, soya and potato crops, as well as certain vegetable crops.

Canada imports a large proportion of its phosphate from the United States, particularly from Florida and Idaho, where the main US producers are located. This dependence has been increased by unstable trade relations with Russia and the war in Ukraine, which have prompted Canada to increase its imports from the US[46]. Even when Canada sources supplies from other parts of the world, notably Morocco and Europe, the logistics often involve transit through the United States. These imports of phosphates and other fertiliser raw materials frequently arrive via the port of New Orleans, before being transported via the Mississippi river system and then by rail to Canada[47]**. The United States is also a major supplier of nitrogen fertilisers** (accounting for around 50% of Canadian imports in 2023).

The Trump administration's announcement of a 25% increase in customs duties on Canadian products - including fertilisers - in March 2025, and Ottawa's possible adoption of retaliatory measures, are therefore raising fears of a **profound disruption to the interdependent North American fertiliser industry**. **The price of potash has already risen by almost 15% in the United States**, in anticipation of these protectionist measures[48], heightening fears of a general rise in the cost of agricultural inputs, threatening the profitability of farms in the United States. US and Canadian fertiliser manufacturers, represented by the Fertilizer Institute[49] and Fertilizer Canada[50] respectively, therefore launched a lobbying effort to demand exemption measures, which did not prevent Ottawa from adding fertilisers to its list of products affected by its countermeasures in the event of US customs duties coming into force.[51]

By pushing up the cost of inputs traded between Canada and the United States, a possible tariff war **would also threaten, to a lesser extent, exports of complex fertilisers (binary and ternary) from both countries to the rest of the world**. In 2024, the United States exported more than $372 million worth of NK, PK and NPK fertilisers containing potash, the majority of which came from Canada, over 80% of which was exported

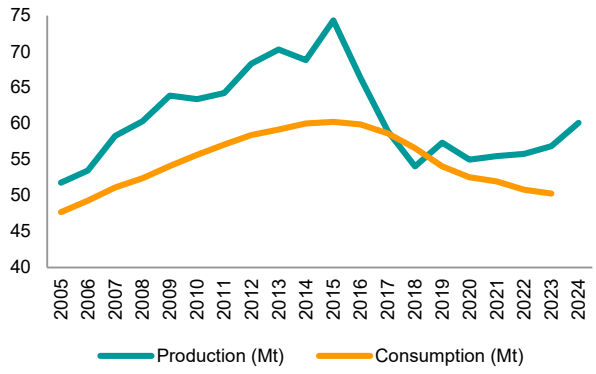
[44] Potash Facts - Natural Resources Canada, *natural-resources.canada.ca*, 04/02/2025
[45] How Trump's Tariffs Will Affect Farmers and Food Prices | Civil Eats, *Civil Eats*, 05/03/2025
[46] Understanding the risks and vulnerabilities of the Canadian agricultural fertilizer market, *CAPI*, December 2022
[47] Le port de Churchill en voie de faciliter la distribution du phosphate de la Saskatchewan | Radio-Canada, 07/03/2025
[48] US, Canadian farmers face soaring fertilizer prices amid Trump trade war | Reuters, *Reuters*, 07/03/2025
[49] U.S. fertilizer industry seeking tariff exemption for potash and nitrogen from Canada - RealAgriculture, www.realagriculture.com, 02/02/2025
[50] Fertilizer Canada is deeply concerned by the announcement of tariffs from the U.S. and Canadian governments impacting North American fertilizer trade, *Fertilizer Canada*, 03/02/2025
[51] Cattle, corn, ethanol, and fertilizer on Canada's proposed $125 billion counter-tariff list - RealAgriculture, www.realagriculture.com, 04/03/2025

to markets other than Canada. This does not, however, apply to its exports of MAP and DAP, which do not require potash for their production, and represented USD 2 billion in 2024. Canada is much less exposed, since fertilisers containing phosphate or nitrogen (most of which come from the United States) accounted for just 15% of its exports in 2015.

4. China streamlines its industry, even if it means reducing exports

Because of its population and its policy of food sovereignty, **China is the world's leading producer and consumer of fertilisers**. The country is by **far the world's leading phosphate producer**, with estimated production of 90 Mt in 2023, or almost 41% of the world total[52], or almost three times more than its main competitor, Morocco (35 Mt). It is also the **world's leading producer of ammonia**, with 56 Mt in 2022, or around 30% of the world total. On the other hand, it is only **the third largest producer of potash**, with around 6 Mt in 2023, 15% of the world total. Unsurprisingly, **this class of fertiliser accounts for almost all of China's fertiliser imports** (USD 4.7 billion in 2023, 84% of the total value).

Graph 9: Production and consumption of chemical fertilisers in China, in Mt/year



Source: National Bureau of Statistics of China

4.1. Since the 2015 peak, efforts have been made to rationalise the sector

After **several decades of uninterrupted growth, fertiliser production and consumption peaked in 2015**, at 74.3 Mt and 60 Mt respectively[53]. Since then, the Chinese authorities have undertaken to **rationalise the sector** and **put an end to uncontrolled consumption**: in 2015, Chinese farmers used 409 kg per hectare, almost 4 times the world average and 3.2 times that of the United States[54], accentuating the problems of pollution, soil acidification, eutrophication of lakes and rivers, and CO_2 emissions. Indeed, **Chinese ammonia is produced almost entirely from coal**. This choice makes the most of the country's immense coal reserves and limits its dependence on imported natural gas but produces around twice as much CO_2 per unit of ammonia produced.[55]

The Chinese government has **gradually ended several decades of support for fertiliser production and consumption**. After eliminating price controls in 2009, most production subsidies were abolished between 2015 and 2018[56]. At the same time, initiatives to improve farming practices have been undertaken to **reduce net fertiliser consumption without lowering crop yields**: slow-release fertilisers, optimised blends, soil analyses, etc. These measures have proved effective. **From its production peak in 2015 (60 Mt), domestic consumption has fallen to 50.2 Mt in 2023 (-16%)**[57]. The dual effect of market liberalisation and consumption reduction measures has led to the closure of the least efficient plants, compounded by administrative closures

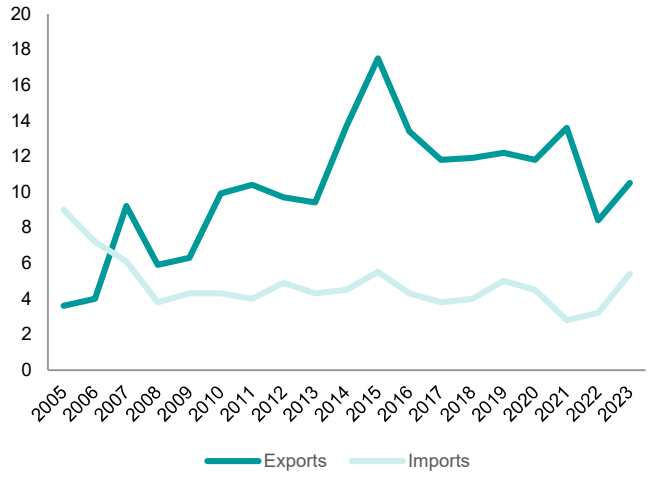
[52] Mineral Commodities Summary: Phosphate Rock, US Geological Survey, 30/01/2024
[53] China's Agricultural Policy Digest: Edition #3 - AGRA, *AGRA - Sustainably Growing Africa's Food Systems*, 22/11/2022
[54] Repositioning fertilizer manufacturing subsidies for improving food security and reducing greenhouse gas emissions in China - ScienceDirect, www.sciencedirect.com, 20/04/2016
[55] Why China's Renewable Ammonia Market Is Poised for Significant Growth - Center on Global Energy Policy at Columbia University SIPA | CGEP %, *Center on Global Energy Policy at Columbia University SIPA | CGEP*, 10/03/2025
[56] Repositioning fertilizer manufacturing subsidies for improving food security and reducing greenhouse gas emissions in China - ScienceDirect, www.sciencedirect.com, 20/04/2016
[57] China Chemical Fertilizer: Consumption | Economic Indicators | CEIC, www.ceicdata.com, 2024

of the most polluting plants - ammonia units in particular[58]. **Annual production fell from 74.3 Mt in 2015 to 54 Mt in 2020**, but has since recovered slightly, reaching 60 Mt in 2024 (graph 9).

4.2. Focus on the internal market

At the same time, Beijing has stepped up **measures to restrict exports** to guarantee the availability of fertilisers and prevent price increases on international markets from being passed on too directly to its own market. In 2021, the authorities introduced inspection certificates that amounted to a *de facto* ban on exports[59], before adopting temporary restrictions on phosphate exports (2022) and urea (2023). **Urea quotas were cut by a further 83% in June 2024**, prompting some customer countries to diversify their supply on a long-term basis[60]. As a result**, China's share of world exports fell from 17.5% in 2015 to 10.5% in 2023** (graph 3). The restrictions are set to continue into 2025, according to some market players.[61]

Graph 10: China's share of world fertiliser trade, in % of value



Source : TradeMap

China's Potash Pivot: Laos Emerges as a Strategic Supplier

China doubled its imports of potash - the only basic fertiliser for which it is not self-sufficient - between 2013 and 2024, to 12.8 Mt[62]. To reduce its dependence on its three main suppliers - Canada, Russia and Belarus - the country is looking to **secure other sources of supply,** particularly in **Laos**. Its southern neighbour is said to have the third largest reserves in the world, behind Canada and Russia[63]. Several Chinese groups have therefore invested in potash production in Laos, enabling the country to become China's **fourth-largest supplier**. These exports, which began in 2014 and reached 127,000 tonnes in 2020, exceeded 2 Mt in 2024, a level comparable to China's imports from Canada (2.4 Mt). Exported mainly to China, potash had become **Laos' second most important export** (after energy) by 2023, accounting for **9.4% of the country's exports at USD 975 million**. This increase was facilitated by the inauguration in 2021 of the **China Lao Railway** between Vientiane and Kunming.

These exports are set to continue to grow: in 2022, the Chinese group Asia Potash International launched a **USD 4.3 billion investment to operate a new concession in Laos**. This mine will initially produce 1 Mt/year, with the capacity to be increased to 7 or even 10 Mt/year[64]. If these figures are achieved, **Laos would overtake Russia and Belarus to become the world's second largest producer after Canada**, and China's largest supplier. Other investors, notably Vietnamese[65], could follow Asia Potash's lead and in turn contribute to the development of potash production in Laos.

[58] China's environmental regulations will force nitrogen pla... - CRU Group, *CRU Group Website*, 11/10/2017
[59] China's state planner says taking steps to ensure fertiliser supplies | Reuters, *Reuters*, 20/10/2021
[60] PRC Fertilizer Export Controls Provoke Derisking Abroad - Jamestown, *jamestown.org*, 04/10/2024
[61] Water soluble fertilizers prices in China remain bearish in Jan 2025 amid the continuation of export restrictions, ChemAnalyst News, 05/02/2025
[62] TradeMap data
[63] Laos Positioned as World's Third-Largest Potash Fertilizer Producer, *kpl.gov.la*, 06/11/2024
[64] China's dependency on potash imports could give tiny Laos rare leverage - Radio Free Asia, *Radio Free Asia*, 15/06/2024
[65] Vietnam's $522mn potash mining project in Laos revived after eight-year pause | Tuoi Tre News, *Tuoi Tre News*, 10/01/2025

5. Gas, phosphate, and a plan: Saudi Arabia's rise as a major producer

With **substantial phosphate reserves** (estimated at 1.4 billion tonnes, the eighth largest in the world), Saudi Arabia has long been limited itself to extract and export this raw material without adding much value. But the kingdom has invested massively to capitalise on its other asset - the **availability of low-cost natural gas** - to develop an integrated value chain for fertilisers, particularly binary DAP and MAP, based on ammonia and phosphate. With success: now **the second largest exporter of DAP fertilisers[66], behind Morocco**, Saudi Arabia has seen its share of global fertiliser exports almost triple between 2019 and 2023, rising from 2.2% to 5.7% of the total (graph 3). And it intends to increase its production significantly over the next few years.

5.1. Public groups Ma'aden and SABIC Agri-Nutrients spearhead the sector

Founded in 1997 to develop the country's mining resources, Ma'aden launched Ma'aden Phosphates Company in 2007 in partnership with industrial chemicals group **SABIC**. These two companies then joined forces in 2014 with US fertiliser specialist **Mosaic** to form **Ma'aden Wa'ad Al Shamal Phosphate Company (MWSPC)**, until Ma'aden acquired Mosaic's shares in 2024.[67]

These alliances, backed by several billion US dollars of investment, have led to total vertical integration of the sector. At the Al Jalamid site, Ma'aden Phosphate Company extracts **11.6 Mt of ore per year**, which is then processed in a beneficiation plant that produces **up to 5 Mt of phosphate concentrate per year**. The phosphate concentrate is transported by rail to Ras Al Khair, where it is processed into fertiliser. The industrial complex, also operated by MPC, includes plants producing **phosphoric acid, sulphuric acid and ammonia**, which are essential components of phosphate and binary fertilisers. The company produces **more than 3 Mt of di-ammonium phosphate (DAP) a year**. Ma'aden has also invested more than USD 8 billion to build the Wa'ad Al Shamal Industrial City park, where seven plants enable it to produce an additional **3 Mt of complex fertilisers** (mainly DAP and MAP), for a **total capacity of 6 Mt/year**. Ammonia is supplied by **Ma'aden Fertilizer Company** (MFC), its dedicated subsidiary, which has invested USD 892 million in a 1.1 Mt/year ammonia plant.

The other major player in the Saudi fertiliser sector is **SABIC Agri-Nutrients** (formerly Saudi Arabian Fertilizer Company), founded in 1965 to develop urea and ammonia production, with capacities of 5 Mt/year and 3.4 Mt/year respectively. In 2021, the Group took over all the fertiliser activities of its parent company SABIC[68], in particular National Chemical Fertilizer Co. and Al-Jubail Fertilizer Co., enabling the new entity to operate as an integrated whole. The group plans to build a sixth industrial site in the city of Al Jubail to produce an additional 1.2 Mt/year of ammonia and 1.1 Mt/year of urea[69]. The Group is working closely with Saudi Aramco - its natural gas supplier - in particular to sequester the CO_2 produced by the transformation of gas into ammonia.

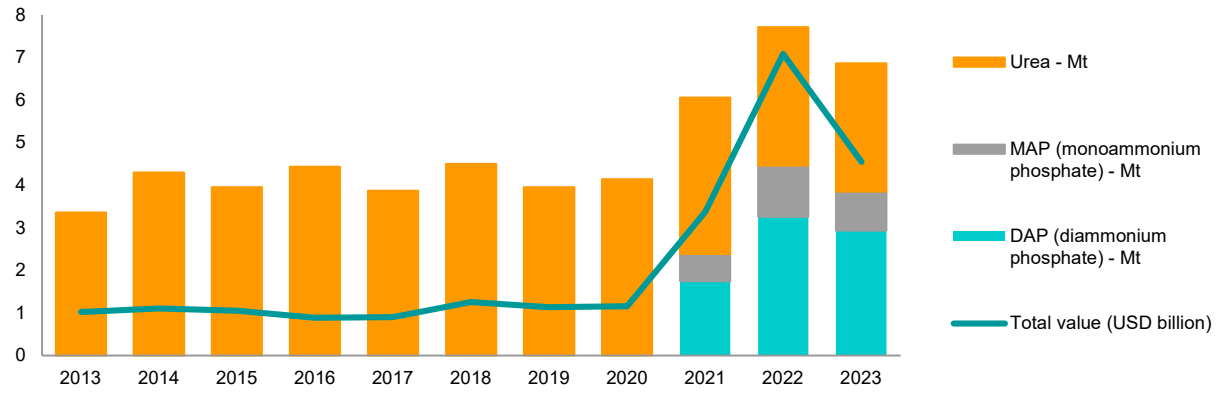
5.2. Exports up and set for further growth

Since fertilisers produced in Saudi Arabia are almost entirely sold abroad, this increase in production has led to a **significant rise in exports in recent years**, thanks in particular to the inauguration of complex fertiliser plants (DAP and MAP), which Saudi Arabia has only been exporting in significant quantities since 2021.

[66] Diammonium Phosphate (DAP) Fertilizer Exports from Saudi Arabia, *NationMaster*
[67] Maaden to acquire Mosaic Phosphates stake in Wa'ad Al Shamal by issuing new shares, *ArgaamPlus*, 24/04/2024
[68] Safco acquires Sabic's fertilizer business, www.usinenouvelle.com, 06/01/2020
[69] Saudi Arabia to build new blue ammonia plant | AGBI, *AGBI*, 04/07/2024

Between 2020 and 2022, exports almost **doubled in volume**, from 4.1 Mt to 7.7 Mt, and their value multiplied by more than six due to the surge in international prices, to reach more than USD 7 billion (graph 11). **In 2023, Saudi Arabia exported 6.86 Mt of fertilisers of all types, worth USD 4.5 billion.**

Graph 11: Saudi exports of fertilizers by type in volume (Mt) and value (USD)



Source: UNCOMTRADE data, GSA analysis

Exports should continue to grow, at least as far as phosphate fertilisers are concerned. In January 2025, Ma'aden signed **three contracts worth a total of USD 919 million** with a subsidiary of the Chinese company National Chemical Engineering for the expansion of the Ras Al Khair and Wa'ad Al Shamal industrial complexes. These projects, which will take 18 and 22 months to complete, are designed to strengthen the country's position on the international market and **consolidate its production infrastructure** by increasing capacity by a **further 3 million tonnes of fertiliser per year, bringing Ma'aden's total capacity to 9 million tonnes per year**.

5.3. Asia and Africa, priority markets

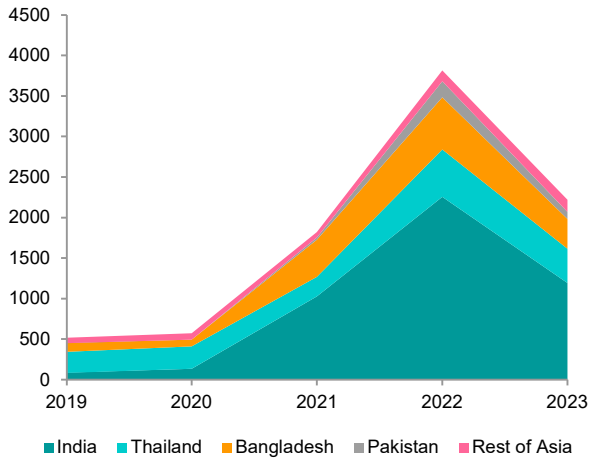
The Asia-Middle East region is **a key market** for Saudi fertilizers, accounting for 46% of exports (by value) in 2023. Since 2020, exports to these markets have **grown exponentially**, both in terms of volume and value. **India, Thailand, Bangladesh and Pakistan are among the main importers** (graph 12). In 2022, the **Indian cooperative Krishak Bharati** signed a long-term fertiliser supply agreement with Saudi Arabia[70]. That same year, **Thailand** signed an agreement to import **a further 100,000 tonnes of fertiliser[71]**, illustrating the growing interest of Asian markets in Saudi products. Also, in February 2025, a Saudi delegation headed by the Minister of Industry and Mineral Resources visited New Delhi to strengthen trade relations between the two countries.[72]

Saudi Arabia has also undertaken to expand its market share in Africa, notably by developing its own distribution channels. In 2019, **Ma'aden acquired Meridian Fertilizer Group, a Mauritius-based distributor of agricultural inputs and a key player in southern Africa** (including Malawi, Mozambique, Zimbabwe and Zambia). Since then, Meridian has invested in the construction of a fertiliser terminal in Malawi in 2021, and opened an office in South Africa[73]. **In 2022, SABIC acquired 49% of another fertiliser distributor, ETG Inputs Holdco Limited**, which operates in some thirty countries across the continent, notably in southern Africa, the Horn of Africa and the Gulf of Guinea.[74]

[70] India signs a long-term fertiliser import agreement with Saudi Arabia - 25/08/2022 | Zonebourse, *Zonebourse*, 25/08/2022
[71] Thailand to import an additional 100,000 tonnes of fertiliser from Saudi Arabia - Team France Export, *Team France Export*, 20/09/2022
[72] Saudi Arabia and India strengthen their industrial and mining cooperation, www.spa.gov.sa, 08/03/2025
[73] The global fertiliser market is undergoing profound change, GSA, 26/02/2023
[74] The global fertilizer market is undergoing profound change, Global Sovereign Advisory, 26/02/2023

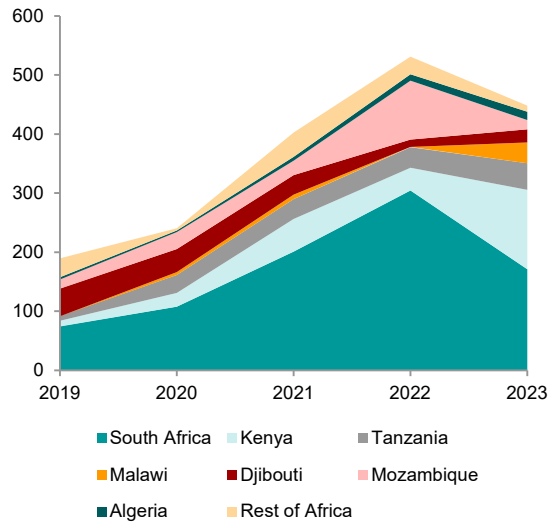
The results followed, with a **significant increase in exports to Africa between 2019 and 2022**. On the continent, South Africa is **the main importer of Saudi fertilisers**, followed by **Kenya, Algeria, Tanzania and Mozambique** (graph 13). Despite a diversification of commercial outlets and an increase in export volumes, Africa's share **has stabilised at around 10%**.

Graph 12: Saudi fertilizer importers in Asia, 2023 (USD million)



Source : TradeMap

Graph 13: Saudi fertiliser importers in Africa, 2023 (USD million)



Source : TradeMap