

Swamped With Supply

Semi-Annual Global Fertilizer Outlook

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Matheus Almeida
Senior Analyst – Farm Inputs
RaboResearch Brazil
matheus.almeida@rabobank.com



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Regional Summaries

Environmental policy leads China's industry to a restructuring



- Chinese fertilizer prices are forecast to remain at low levels in 2020.
- Chinese agricultural product prices remain at low levels, and the export market is slack.
- National supply-side reforms in the fertilizer sector and pressures from environmental protection policy have greatly impacted the industry, which helps accelerate industry restructuring and standardize market competition.

Delayed harvest and planted acres in question in the US



- Fertilizer demand is expected to rebound after seasonal issues in previous crops.
- Corn acres are expected to grow, as soybean fundamentals favor planting corn over soy.
- However, heavy channel inventory and a delayed harvest are likely to figure significantly in farmers' decisions.
- Fundamentals still point to weak pricing dynamics for N, P, and K producers through Q2 2020.

EU regulations require low volumes of highly efficient products



- Fertilizer demand in the major EU markets is expected to decrease by 1.8% from 2018/19 to 2020/21, driven by stricter environmental regulations.
- In this scenario, farmers must improve fertilizer efficiency in order to continue to attain higher yields. Since global crop commodity prices look flat in 2020, yields are a major driver of farmer margins.
- Fertilizer producers face record-low prices, weak demand, and pending emissions pressures.

Higher demand and lower local production in Brazil enhance imports



- Amid improved farmer margins in 2H 2019, fertilizer demand is expected to grow 2%.
- Local production is expected to drop by 6% in 2019, after some turnaround.
- Fertilizer imports are forecast at 28.2m metric tons in 2019 – a 2.7% increase vs. 2018.
- Lower fertilizer prices and a good scenario for commodities are expected to support fertilizer demand growth in 2020.

Drought will keep local Australian demand in check



- Drought continues to grip the eastern states of the country, while a dry season also hit the west, significantly impacting urea demand.
- If rain hits drought-affected regions prior to planting, farmers will take a conservative strategy to fertilizer applications next season.
- Local markets are well supplied ahead of next season, which will mitigate any price increases driven by supply shortage.

We expect downside ahead for local New Zealand prices



- We expect there is downside ahead for local New Zealand retail prices, with the peak demand during spring now concluded and local prices yet to reflect the decline in global values.
- New environmental reforms will require New Zealand farmers to operate within tougher environmental constraints than they have in the past.

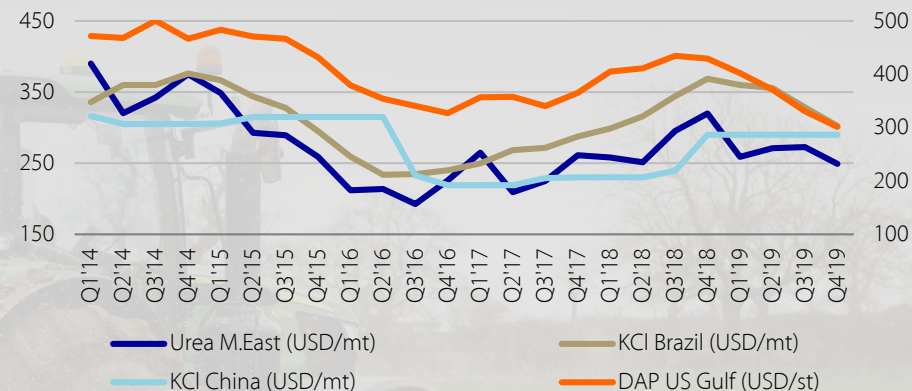
Price Dashboard

Currency – selected countries

	Q4 2018	Q3 2019	Q4 2019	Q4/Q3	YOY
BRL/USD	3.81	3.97	4.12	4%	8%
CNY/USD	6.92	7.02	7.05	0%	2%
INR/USD	72.08	70.33	71.28	1%	-1%
USD Index	1,201	1,205	1,205	-0%	0%
RUB/USD	66.64	64.65	64.13	-1%	-4%
USD/AUD	0.72	0.69	0.68	-1%	-5%
USD/EUR	1.14	1.11	1.11	-1%	-3%

Source: Bloomberg, Rabobank 2019

Fertilizer prices – USD/metric ton (LHS), USD/short ton (RHS)



Source: Bloomberg, Green Markets, Rabobank 2019

Commodities

	Q4 2018	Q3 2019	Q4 2019	Q4/Q3	YOY
Wheat CBOT – US\$/bu	511	487	513	5%	0%
Corn CBOT – US\$/bu	370	389	382	-2%	3%
Rice CBOT – US\$/cwt	10.68	11.68	11.89	2%	11%
Rice ZCE – CNY/mt	2,271	2,547	2,772	9%	22%
Soybean CBOT – US\$/bu	878	873	915	5%	4%
Soybean/Corn	2.37	2.24	2.40	0%	0%

Source: Bloomberg, Rabobank 2019

Energy

	Q4 2018	Q3 2019	Q4 2019	Q4/Q3	YOY
NG1 – NYM (USD/MMBtu)	3.72	2.33	2.47	6%	-34%
UK NG ICE (GBP/therm)	68.33	31.59	41.36	31%	-39%
China port thermal coal	632	586	559	-5%	-12%
ZCE Thermal Coal (USD/mt)	630	583	559	-4%	-11%
Crude Oil – NYM (USD/bbl)	59.34	56.44	55.46	-2%	-7%

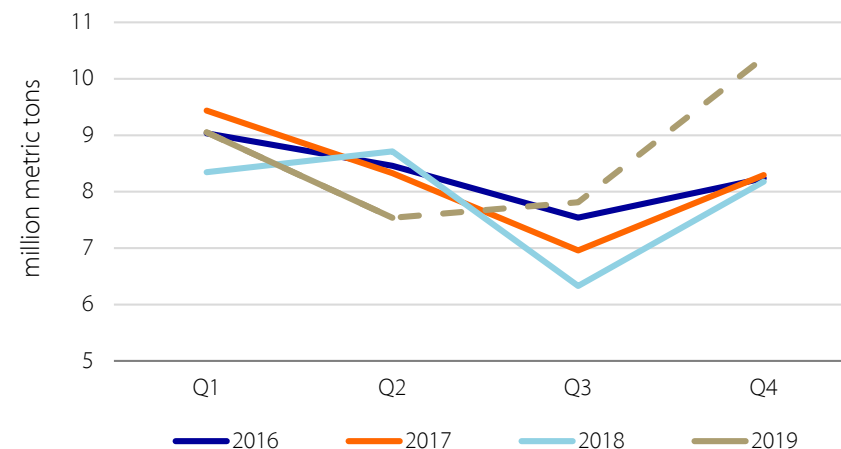
Source: Bloomberg, Rabobank 2019

Nitrogen

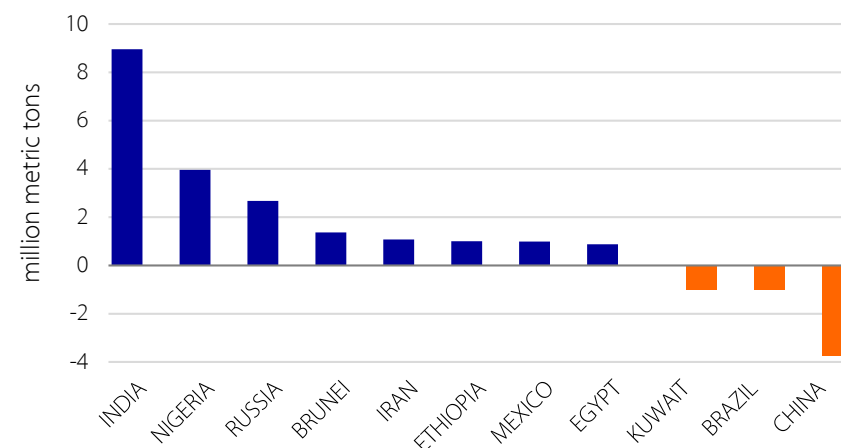
Significant increase in urea imports from India postpones price reduction

- Urea imports into India were boosted in 2H 2019, as delayed subsidy payments reduced domestic production. This additional demand for second-semester volumes, together with higher imports from Australia and uncertainties regarding Iran and China, gave some support to prices during Q2 2019.
- However, Chinese exports appeared very solid from July onward, forcing prices down. Despite the restrictions on nitrogen production, a sum of factors, such as lower local demand, reduction on energy costs, zero export tariffs, and a weak CNY vs. USD, has led to an excess of supply and driven companies to foreign markets.
- The soybean/corn ratio fell below 2.4 at CBOT, and the relatively high price of wheat is expected to stimulate US farmers to switch away from soybean crops and increase nitrogen demand for the next crop season.
- On top of that, harvest delays in the US may shift nitrogen application from ammonia in the fall to urea/nitrate application in the spring of 2020, improving US imports during Q1 and Q2 2020.
- Domestic Indian urea production will also be key in defining the course of urea prices in 1H 2020. Some players are resuming ammonia and urea production, but the subsidy level may still cause some cash flow issues for those companies and limit production during 2020.
- Rabobank expects prices to recover during 1H 2020 in response to the improvement of US demand and the maintenance of Indian demand at higher levels. However, given recent increases in capacity and China's continued presence in the international market, the current level of production is likely to limit prices to below last year's average, USD 300/mt FOB Middle East.

Urea imports of selected countries by quarter, 2016-2019e



Urea capacity change forecast, 2018-2023f

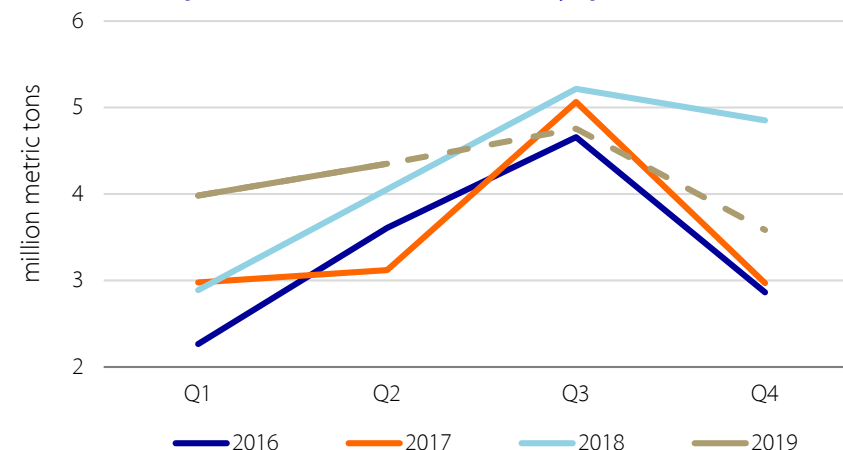


Phosphate

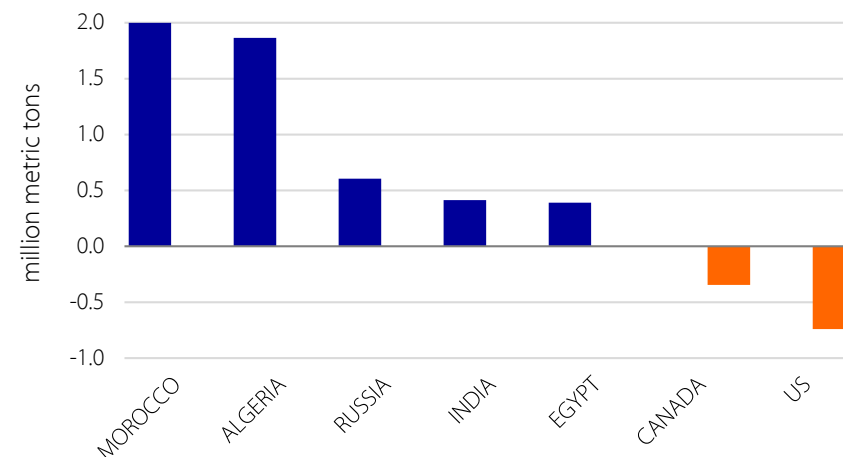
Processed phosphate prices are at their lowest level in more than ten years

- The phosphate market faced a significant reduction in demand during 2019, due to weather issues in the first semester of the year in the US and India, higher fertilizer prices, and relatively low commodity prices.
- Weather issues in the US during planting season reduced spot demand, which, combined with record imports from October 2018 until March 2019, resulted in higher stocks in the channel. Higher imports in the first semester in a stagnant demand environment also inflated Indian stocks.
- Aside from the demand decrease, the steady increase of new phosphate capacity in 2017 and 2018 finally hit the market in 2019. Even with the robust increase in processed phosphate trading during 1H 2019, MAP and DAP prices started to weaken in the first quarter. By November, they lost one-third of their value in 12 months and now are at their lowest levels in more than ten years.
- In August of this year, a group of Chinese phosphate producers announced operation closures from September onward, due to low prices. However, the strength in the USD/CNY (partly due to the trade war), as well as discounted prices of sulphur and ammonia, helped Chinese producers mitigate some of the reduction in margins, and allowed MAP and DAP prices to dive below USD 300/mt before the industry finally started to cut production.
- The temporary reduction of production – for maintenance or because of negative margins – is likely to promote a small recovery in DAP and MAP prices until the end of the year, in spite of low demand. For the first half of 2020, the resumption of production may keep prices below the 2019 average (around USD 350/mt FOB Baltic and NOLA). A firmer recovery during 2H 2020 will depend on commodity prices.

DAP/MAP imports of selected countries by quarter, 2016-2019e



Processed phosphates' capacity change forecast, 2018-2023f

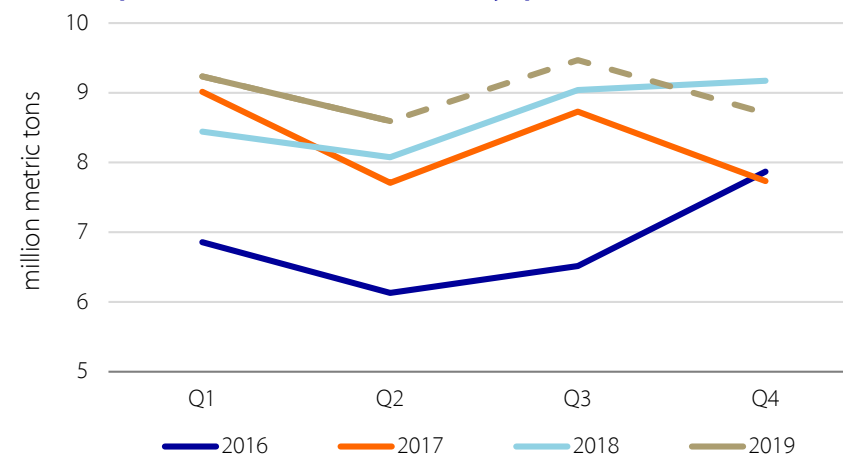


Potash

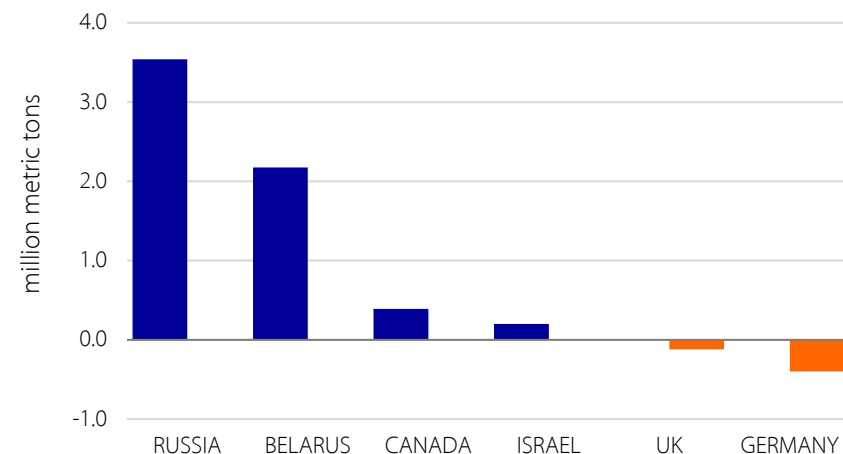
Lower global demand and higher stocks pressure prices down

- The strong demand for potash in the US, Brazil, and China supported prices during 1H 2019, but slowing demand in the northern hemisphere after plantings revealed the excess of supply.
- Aside from the weather issues in the US that cut demand, commodity prices (palm oil, soybeans, cotton, and coffee) have leveled off at five-year lows, giving no support to higher potash prices, which are at their highest levels since mid-2015.
- One of the most remarkable signs of the oversupply is the delay in purchase agreements between Indian and Chinese companies and suppliers. Supply agreements used to be finalized in the period from June to July, but India's first deal was done only at the end of October.
- Stocks in China remain at higher levels, and an agreement among the main producers and local industry is only expected for Q1 2020.
- As a result of the higher stocks in the main destinations, potash prices have reduced between 9% and 16% from January to November, depending on the region.
- In order to control local inventories, some companies are temporarily cutting the less efficient production plants. This may balance the potash supply-and-demand scenario by the beginning of next year and, together with Chinese contracts, create some support for price recovery. Until then, the lack of demand will keep pressuring prices down.

MOP imports of selected countries by quarter, 2016-2019e



Potash capacity change forecast, 2018-2023f



Australia

Below-average local demand keeps prices in line with global values



Conservative application strategies will keep a lid on any demand-driven price rises during 2020

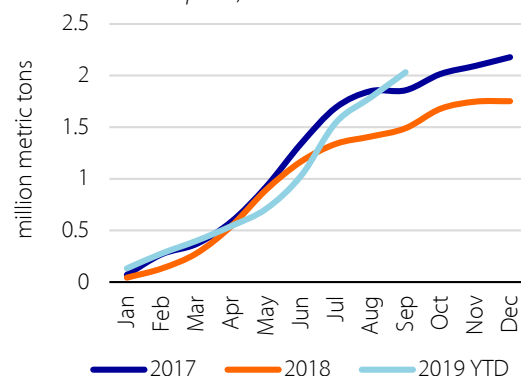
- If healthy rainfall arrives prior to winter crop planting next season, we expect farmers will take a conservative strategy toward nutrient application, as many recover from drought or a below-average crop in 2019. As a result, we expect below-average demand will keep Australian fertilizer values in line with global benchmarks during 2020.
- Heading into 2020, local urea stocks are well supplied, which will help mitigate any localized shortages witnessed during the 2019 winter. According to the latest import data supplied by CRU, 2.03m metric tons made its way to Australian shores in 2019. This is well above the 1.86m metric tons and 1.49m metric tons imported during the same time period in 2017 and 2018, respectively.
- We expect the Australian dollar to weaken against the US dollar in 2020 and to trade at 0.65 by November. A weaker currency will reduce local importers' purchasing power and bring some upward pressure to local fertilizer prices.

Drought and flood hit local production and demand

- While the fall in global fertilizer prices was favorable for local farmers, demand was impacted by drought and poor conditions on either side of the country.
- According to Fertilizer Australia, sales of nitrogen fell 5.3% in FY 2018/19, 5.8% below the five-year average (nutrient metric tons). Despite the tough conditions, farmers maintained phosphate demand, and sales increased 0.3% YOY, 1.2% above the five-year average. Sales of potassium fell 2.1%.
- It was also a difficult year for local producer Incitec Pivot (IPL). Large floods damaged the train line between the Phosphate Hill plant and port. IPL recently announced the flooding and disruption that followed cost the company AUD 115m of earnings before interest and tax (EBIT).

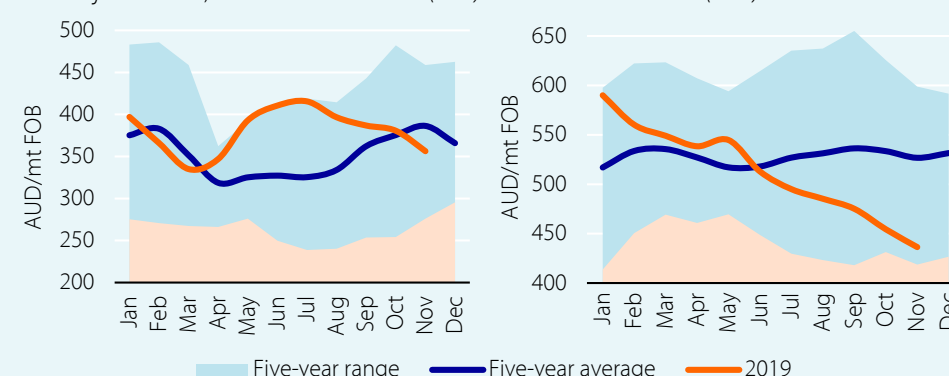
Australian urea markets are well supplied ahead of 2020

Australian urea imports, 2017-2019



AUD-adjusted global prices of urea and DAP are now below the five-year average

AUD-adjusted urea, excl. Middle East FOB (LHS) and DAP excl. US Gulf (RHS)



Source: CRU, Rabobank 2019

Source: Bloomberg, Rabobank 2019



Wesley Lefroy
Agricultural Analyst

+61 2 8115 2008
wesley.lefroy@rabobank.com

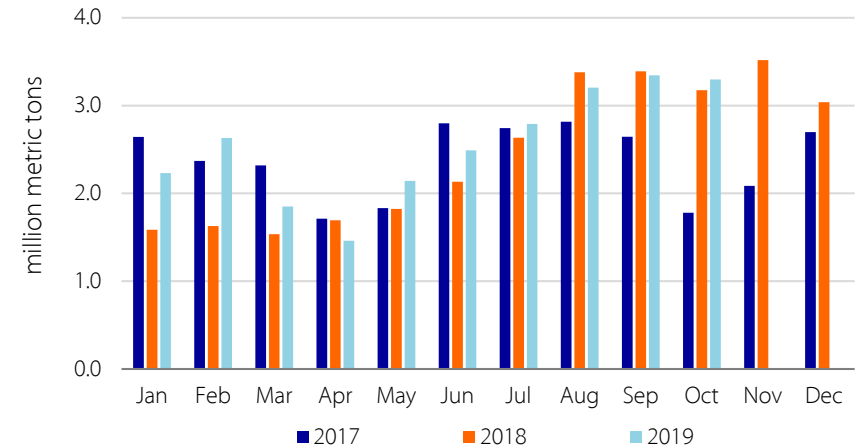
Brazil

Area expansion and healthy farm economics support demand growth

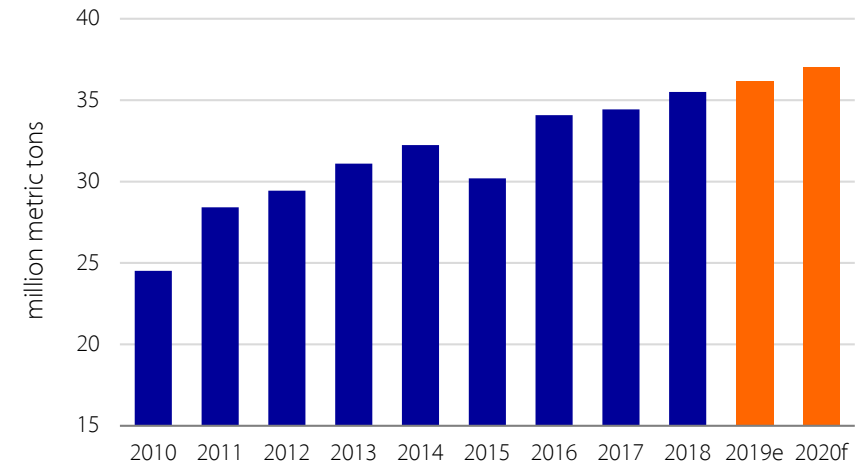


- Gains in the spot prices of soybeans and corn in the local market, plus declines in fertilizer prices in the international market at the end of 1H and beginning of 2H, improved the barter ratio between these commodities and fertilizers, and the expectations for farmers' margins for the 2019/20 crop. This scenario should guarantee high NPK application rates, which, in addition to the 2% crop area increase expected for 2019/20, are likely to support fertilizer consumption. Rabobank forecasts Brazilian fertilizer demand slightly above 36m metric tons for 2019, a 2% increase year-on-year, and imports above 28 m metric tons, a 2.7% gain over 2018.
- Local urea production has been affected by the high costs of production, while two phosphate rock mines were closed temporarily in the middle of the year due to residual management adjustments. As a result, fertilizer output is likely to reduce by 6% this year.
- The devalued Brazilian real vs. the US dollar has partly offset fertilizer price reductions and maintained other costs at relatively high levels in local currency. However, the weak Brazilian real has supported commodity price levels and improved expectations for farmers' margins.
- For 2020, the positive scenario for local feed demand and commodity prices are likely to sustain fertilizer demand growth. Rabobank forecasts another 2% demand increase in 2020, to 37m metric tons. Lower fertilizer prices and narrowed industry margins are expected to incentivize imports and limit a revamp of local production.
- As the soybean crop represents almost 50% of fertilizer demand, it is very important to closely monitor the evolution of African swine fever) worldwide and its impact on feed demand, as well as the trade war between the US and China.

Fertilizer imports by month, 2017-2019



Annual fertilizer consumption, 2010-2020f



Source: ANDA, IFA, Rabobank 2019



Matheus Almeida
Senior Analyst

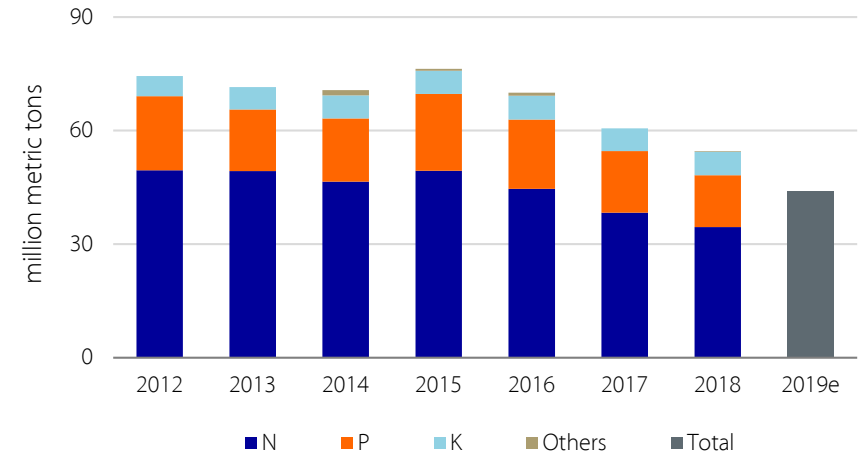
+55 11 5503 7435
matheus.almeida@rabobank.com

China

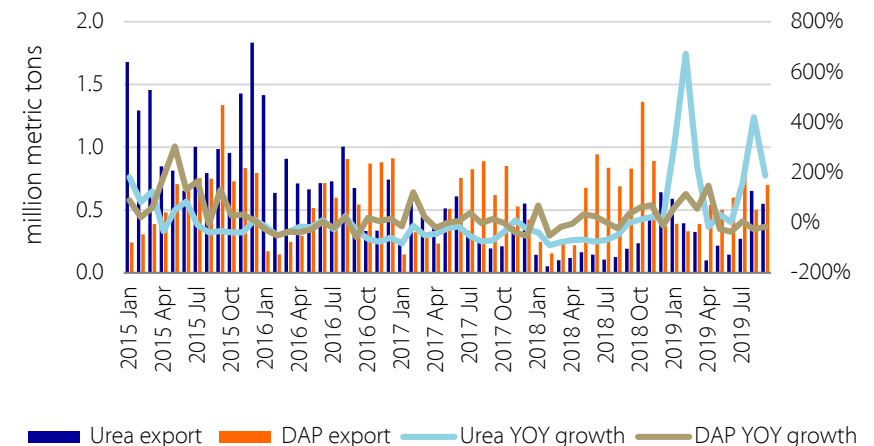
Weak demand offsets lower production and creates an exportable surplus

- China's fertilizer prices are expected to remain at low levels in 2020. Although environmental protection pressure exists, the oversupply situation is still affecting the Chinese fertilizer market, especially the relatively high utilization rates of urea and high import volumes of potash. For the phosphate market, weak sulphur prices cannot support DAP's high prices. In addition, China's agricultural product prices remain at low levels, and the export market is slack, impacting fertilizer demand.
- Driven by a government initiative to reduce mineral fertilizer application, application per hectare will continue to decrease, especially commodity fertilizer (N, P, K) application. But there is still room for compound fertilizer application improvement. Compound fertilizer demand is expected to continue to grow, particularly special fertilizer for specific crops.
- Due to the US-China trade war and global economic uncertainties, the Chinese renminbi is weakening against the US dollar, which is positive for China's fertilizer export market. As China is one of the largest exporters of fertilizer, the country's players will benefit from a devalued renminbi, especially urea and phosphate manufacturers. However, demand in major export markets is close to saturation, and it will be very difficult to rely on export markets to support domestic fertilizer prices.
- In the medium term, pressures from national supply-side reforms for fertilizers and environmental protection policy have greatly impacted the industry, which helps to accelerate industry restructuring and standardize market competition. China's fertilizer industry will shift from high-speed growth in production to high-quality development. Supply and demand are expected to rebalance when inefficient capacity is phased out in the next few years. Manufacturers with strong capability in production, R&D, marketing, and upgraded environmental protection production facilities will survive and prosper in the future market.

Chinese fertilizer production, 2012-September 2019



Urea and DAP export volumes, 2015-July 2019



Source: National Bureau of Statistics of China, CRU, Rabobank 2019

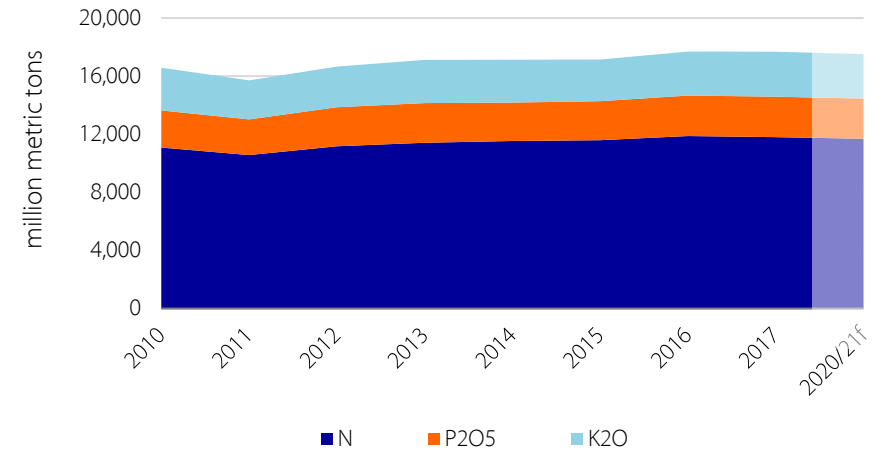
Western Europe

Environmental regulations will limit fertilizer demand growth

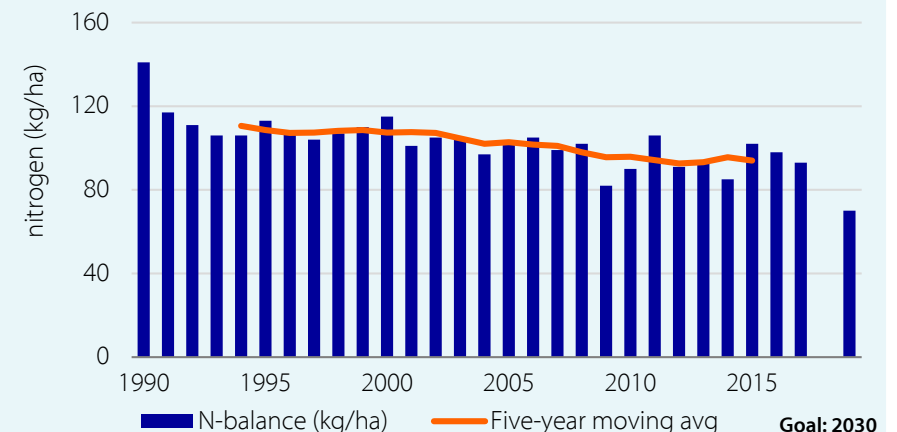


- Total EU fertilizer consumption is estimated at 20m metric tons of nutrient for 2018 (agricultural and industrial use). For the period 2017/18 to 2020/21, however, fertilizer demand is estimated to decrease by 0.9%. Over the next decade, total N+P+K fertilizer consumption is forecasted to stay relatively constant (0.7%), though nitrogen demand is expected to decrease going forward due to stricter environmental regulations.
- Total EU crop area remains stable. Fertilization rates per hectare have peaked in western EU countries but are growing in most central and eastern EU countries, where there are still considerable yield gaps.
- Approximately 75% of agricultural land is fertilized in the EU (the unfertilized area is grassland, idle, or set-aside land). Within the fertilized area, arable crops account for 68% (43% cereals, 9% oilseeds, and 9% fodder crops), permanent crops for 8%, and grassland for 24%. In countries with regions that have high livestock density, like the Benelux, Denmark, Ireland, and Germany, manure competes with chemical fertilizers.
- In western EU countries, the most significant demand driver is increasingly tighter nutrient regulations – the European Commission has tightened rules to reduce water pollution caused by nitrates from agriculture. Germany (the third-largest fertilizer consumer in the EU) introduced a new fertilizer ordinance in mid-2017 to reduce N surpluses (with the goal of a 25% reduction by 2030). While still too soon to evaluate longer-term effects, mineral fertilizer sales went down by 9% in the first six months. In order to reach higher crop yields, farmers in the western EU will have to focus on fertilizer efficiency.

Total fertilizer use in western and central Europe, 2010-2021f



Germany: Total N-balance on agricultural land, 1990-2030f



Source: CRU, IFA, Rabobank 2019



Harry Smit
Elizabeth Lunik
Chia-Kai Kang

+31 6 2013 1391
harry.smit@rabobank.com

New Zealand

Local prices are holding up despite global decline



We expect downside ahead for local prices

- We expect there is downside ahead for local NZ retail prices, with the peak demand during spring now concluded and local prices yet to reflect the decline in global values.
- Local prices have remained relatively stable throughout the 2019 calendar year. Despite a 29% fall in global DAP (FOB US Gulf) and a 11% decline in global urea values (FOB Middle East) in NZD terms, local values have only declined 5.1% and 5.5%, respectively. Typically, local values can take six months or more to reflect movements in global prices, due to the time spent on procurement, shipping, and distribution.
- Inclement weather, particularly in the lower South Island, impacted some urea application this spring. While grass conditions and soil moisture levels were favorable across a majority of New Zealand, temperatures for October remained cooler than average.

New environmental reforms will impact nutrient application

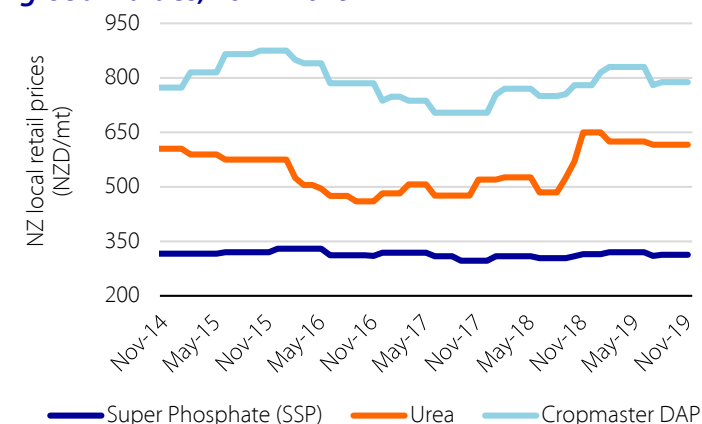
New environmental reforms will require New Zealand farmers to operate within tougher environmental constraints than they have in the past. While the exact details are yet to be finalized, the reforms are focused on two areas: water quality and greenhouse gas (GHG) emissions.

The proposed reforms will require NZ farmers to reduce nitrogen leaching into fresh waterways. Historically, the majority of NZ has not been subject to direct limits on nitrogen leaching, meaning that the regional limits represent a new constraint. There will also be a direct GHG emissions price applied to all fertilizer purchases by 2025.

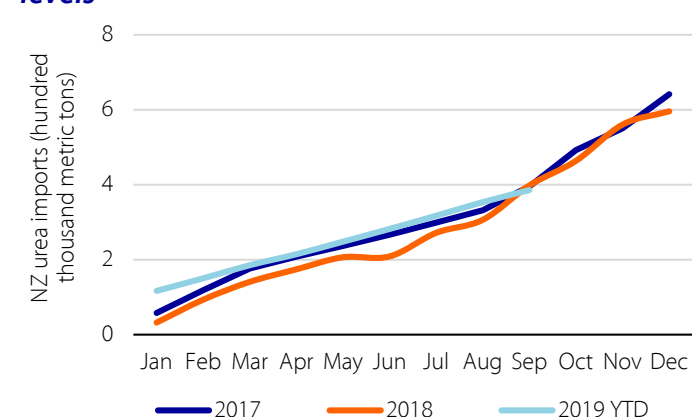
For NZ farmers, we see two ways to reduce the cost associated with new reforms: investing in innovations that improve environmental efficiency, and investing to improve the alignment between land-use intensity and the receiving environment of the land.

For our full analysis, please see: [Farm to Your Strengths: Investing to Farm Under New Environmental Reforms](#) by Blake Holgate.

Local prices have yet to reflect the decline in global values, 2014-2019



1H 2019 urea imports were above 2017 and 2018 levels



Source: Ravensdown, CRU, Rabobank 2019

Wes Lefroy
Agricultural Analyst

+61 2 8115 2008
wesley.lefroy@rabobank.com

North America

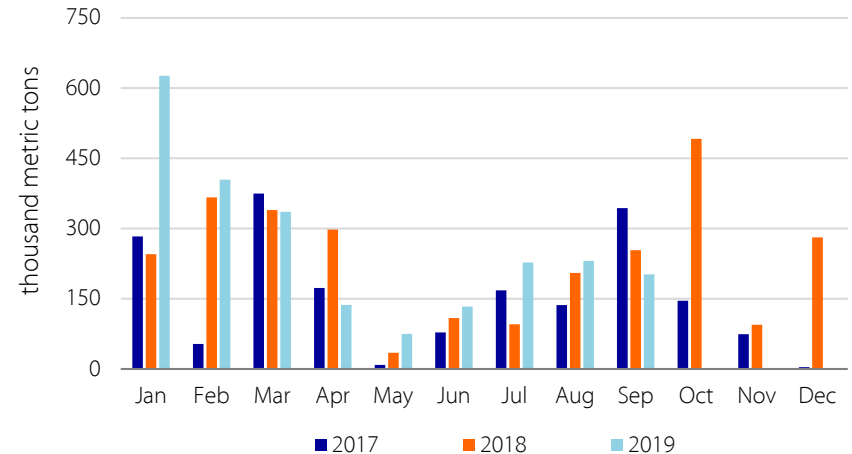
Pricing outlook favors farmers over producers

- We expect fertilizer prices to remain weak through Q1 2020 (at least), as North American curtailments (and recent Chinese pullbacks) appear to have done little more than slow the slide. The retail channel remains robust, as lagged inventory from the previous season and delayed harvest continue to pose questions around the fall and spring application windows. Farmer appetite for P and K is likely to come into question, given the underlying corn and soybean prices and the specter of poor farm economics. However, given current prices, it may be a prime opportunity for well capitalized farmers to replenish soil nutrients.

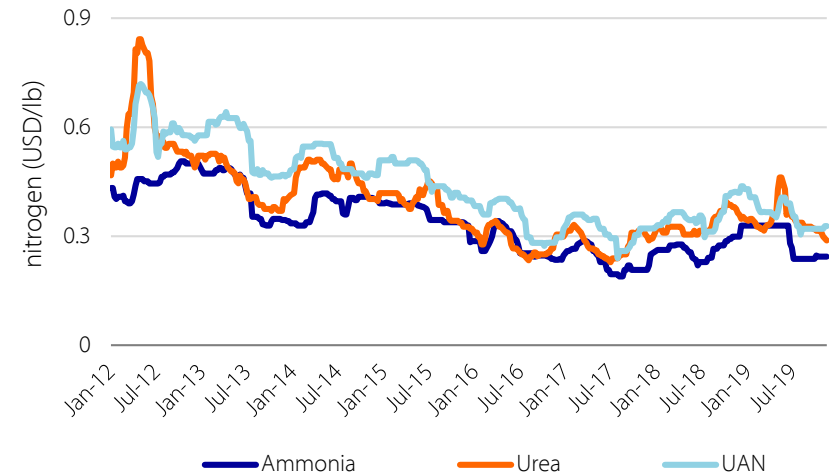
Product

- Nitrogen:** Ammonia represents the cheapest product per nutrient pound for farmers as we head into a fall season that could push some applications into urea-based products in the spring. Harvest timing and yields, and the number of corn acres planted next season could force some volatility in urea prices in 1H 2020.
- Phosphates:** MAP and DAP prices continue to show weakness, as significant imports in Q4 2018 and Q1 2019 (+37% YOY) and low demand have forced the industry to curtail production. Questions about domestic demand will persist, due to poor farm economics and delayed harvest, but any improvement in pricing will more likely be seen in Q2 2020, absent any further curtailments or international demand surprises.
- Potash:** North American MOP prices seem as likely to be pressured by international factors as by domestic concerns. NTR curtailment has limited the downward pressure, but heavy inventories in Brazil and China look likely to slow down exports out of Canpotex. This will likely leave ample supply in the North American market, and we could yet see prices slide further.

MAP/DAP fertilizer import volumes into the US, 2017-2019



Evolution of Nitrogen fertilizers' prices, 2012-2019



Source: Bloomberg, CRU, Rabobank 2019



Samuel Taylor
Analyst

+1 (212) 808-6814
samuel.taylor@rabobank.com

RaboResearch Food & Agribusiness Farm Inputs Team



Dirk Jan Kennes
Global Strategist – Farm Inputs



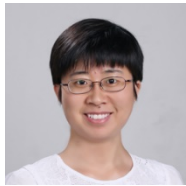
Europe & Africa
Harry Smit
Senior Analyst – Farm Inputs



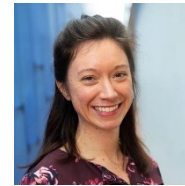
Australia & New Zealand
Wesley Lefroy
Analyst – Agriculture



Europe & Africa
Chia-Kai Kang
Associate Analyst – Farm Inputs



Asia
Jingyan Sun
Analyst – Farm Inputs



Europe & Africa
Elizabeth Lunik
Analyst – Farm Inputs



North America
Samuel Taylor
Analyst – Farm Inputs



South America
Matheus Almeida
Senior Analyst – Farm Inputs



Rabobank



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