



International
Fertilizer Industry
Association

A/15/67b
June 2015
Final Version

83rd IFA Annual Conference
Istanbul (Turkey), 25-27 May 2015



Fertilizer Outlook 2015-2019

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This public summary report was prepared by Patrick Heffer, Senior Director of the IFA Agriculture Committee, and Michel Prud'homme, Senior Director of the IFA Production and International Trade Committee. The first part looks at the global context and agricultural situation. The second part provides global and regional fertilizer consumption projections for the period 2014/15 to 2019/20. The third part provides projections of fertilizer supply for the period 2015 to 2019.

This report is available to the general public on the IFA web site (<http://www.fertilizer.org>) or by request to the IFA Secretariat.

The Fertilizer Outlook draws on the final versions of two reports prepared on the occasion of the 83rd IFA Annual Conference held in Istanbul, Turkey in May 2015: the IFA report *Medium-Term Outlook for World Agriculture and Fertilizer Demand: 2014/15-2019/20* and the IFA report *Fertilizers and Raw Materials Global Supply: 2015-2019*. These two comprehensive reports are strictly reserved for IFA members.

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ECONOMIC AND POLICY CONTEXT

The world economy is progressively recovering, but remains fragile

Growth in world gross domestic product (GDP) remained disappointing in 2014. It is projected to gain momentum from 2015, with increases of 3.5% in 2015 and 3.8% in 2016. These increases would reflect a robust recovery in 2015 in advanced economies, which benefit from lower oil prices. In emerging and developing economies, growth would accelerate from 2016. In a five-year perspective the world output is projected to expand by some 4% annually, with rates slightly below 2% for advanced economies and slightly over 5% for emerging and developing economies. China's GDP growth would stabilize between 6 and 7%, while India's output would rise by almost 8% annually. Southeast Asia and Sub-Saharan Africa are projected to experience growth rates above 5%.

Following four years of relative stability, crude oil prices dropped sharply at the end of 2014 and the beginning of 2015 before rebounding in the second quarter of 2015. A similar trend was observed, to a lesser extent, for a number of other commodities. This sharp fall in oil prices benefits oil-importing economies, but dampens prospects in oil-exporting countries.

Exchange rates have been subject to significant movements during the past 12 months, with the US dollar significantly appreciating against most currencies.

Among the main risks to the outlook are the evolution of oil prices and exchange rates, possible deflation in key markets, geopolitical tensions in the Black Sea area and the Middle East, and Greece's potential exit from the Eurozone.

Policy developments will greatly influence the outlook

Policy developments are a major driver of future fertilizer demand. In China, total fertilizer consumption growth has been capped at 1% annually between 2015 and 2020 and no further growth will be permitted beyond 2020. In view of China's share of world fertilizer consumption (~30%), this change is expected to strongly influence the global outlook.

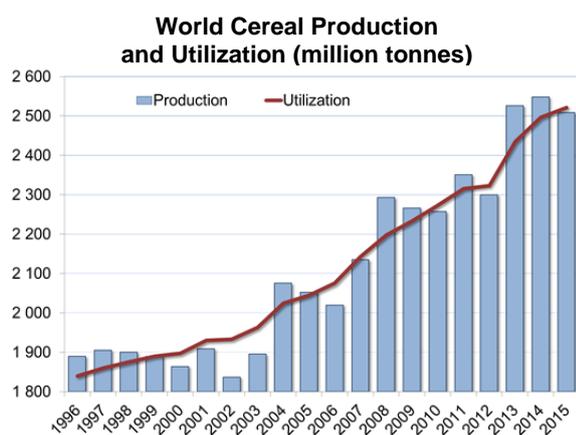
In India, the government is considering options to improve the effectiveness of its fertilizer subsidy scheme. The option that will be selected, and when this option would enter into force, remain unknown at this time. However, any option is likely to impact growth in demand for urea and to rebalance the N:P:K ratio. In Sub-Saharan Africa, firm fertilizer demand growth reflects the establishment of fertilizer subsidy regimes in a number of countries and increasing policy support to agricultural development. In developed countries there is a continuing emphasis on improving nutrient use efficiency. In addition, the food industry is setting nutrient management objectives as part of its sustainability standards.

WORLD AGRICULTURE

A third consecutive bumper cereal crop is expected in 2015

Favourable weather conditions in the main producing areas and still relatively attractive crop prices boosted the 2014 harvest. The world cereal output in 2014 slightly surpassed the 2013 record crop. This small increase was driven by a larger wheat crop. Following bumper harvests in 2013 and 2014, world cereal inventories and stocks held by the major exporters rebounded sharply in 2014/15, triggering drops in cereal prices.

In 2015, in response to declining and relatively low crop prices, it is anticipated that farmers will either reduce the area planted to cereals or manage their cereal fields less intensively. Assuming average weather conditions and yields, the global cereal output is seen as contracting from the 2014 record. This crop would still be the third largest ever. Early forecasts point to a drop of less than 1% year-on-year, as the increase in rice production would partly offset smaller wheat and coarse grain crops. World demand is driven by feed and food uses, as maize-based ethanol production in the United States plateaus. Global cereal inventories are anticipated to moderately retreat in 2015/16. The cereal stock-to-use ratio at the end of the campaign would drop by one percentage point. With comfortable availabilities in the main exporters, cereal prices are expected to remain low compared to those in recent history.



Source: FAO, May 2015

International oilseed, sugar, cotton and biofuel prices are also under pressure, reflecting abundant supplies of all the main crop commodities. Meat and dairy prices are following a downward trend, as well.

Agricultural markets are projected to tighten in the medium term

Production of cereals and oilseeds is projected to expand steadily from 2016/17, with higher growth rates for soybean and maize vs. wheat and rice. Yield improvements would dominate the outlook. Some area expansion is seen in countries with abundant land and water resources, such as Brazil, Indonesia and Russia.

Larger feed uses in developed and emerging economies, and food uses in least developed countries, are seen as driving future expansion of cereal and oilseed utilization. Industrial uses, which have been the main driver of cereal utilization during the past decade, would grow at a comparatively slow pace since cereal-based ethanol production is expected to rise only modestly over the outlook.

World inventories and stock-to-use ratios are projected to contract for all commodities, from a high starting point in 2014/15. The largest drops are anticipated for maize, soybean and cotton. With prospects for progressively tighter market conditions, international cereal prices might slightly firm over the outlook but would remain low in view of the large availabilities.

FERTILIZER DEMAND

World fertilizer demand is seen as rising steadily in 2014/15 and 2015/16

Supported by fairly attractive crop prices in the first half of 2014, world consumption in 2014/15 is seen as up by 2.0% year-on-year, to 185 million tonnes (Mt) nutrients. Gains are expected for all three nutrients: nitrogen (N) consumption would rise moderately, by 1.3%, to 111.8 Mt; phosphorous (P) consumption would rebound, by 2.5%, to 41.3 Mt; and potassium (K) consumption is seen as firmly up, by 4.2%, to 31.5 Mt. Aggregate consumption in 2014/15 is anticipated to retreat in Eastern Europe & Central Asia and in West Asia, as a result of regional geopolitical tensions and weaker economic performance. Due to declining crop prices, consumption is also seen as contracting in North America and Western & Central Europe. It would increase in the rest of the world, with the strongest growth rates in Oceania and Africa. In volume terms, the largest drop in consumption is anticipated in North America. Sizable volume increases are seen in East Asia, South Asia and Latin America.

The outlook for 2015/16 is less positive, reflecting low agricultural commodity prices relative to recent history. Global fertilizer demand in 2015/16 is forecast to expand by 1.0% year-on-year, to 186 Mt. P demand would continue its rebound (+1.1%, to 41.8 Mt). Following consecutive years of strong growth, demand for K would rise more modestly, by 0.8%, to 31.8 Mt. Growth in N demand would be moderate, rising by 1.0% to 112.9 Mt. Fertilizer demand would increase in all the regions but Oceania and Latin America, where it would slightly retreat in response to low crop prices. Assuming an improving geopolitical and economic context, demand would rebound slightly in West Asia and Eastern Europe & Central Asia. It would also partly recover in North America and Western & Central Europe. Continuous growth is seen in all the other regions. The main changes in volume are anticipated in South Asia, East Asia and North America.

Short-term Forecasts for World Fertilizer Demand (Mt nutrients)

	N	P ₂ O ₅	K ₂ O	Total
12/13	108.1	41.6	29.1	178.8
13/14	110.4	40.3	30.2	180.9
14/15 (e)	111.8	41.3	31.5	184.6
Change	+1.3%	+2.5%	+4.2%	+2.0%
15/16 (f)	112.9	41.8	31.8	186.5
Change	+1.0%	+1.1%	+0.8%	+1.0%

(e): estimate; (f): forecast

Source: P. Heffer, IFA, June 2015

Global fertilizer demand is anticipated to reach 200 Mt in 2019/20

The medium-term outlook for agriculture is mixed, starting with high inventories and low prices for the main agricultural commodities. Assuming average weather conditions and no major economic or policy changes, it may take a few years before stock-to-use ratios fall back to more favourable levels and agricultural commodity prices recover. The current context is not very conducive for boosting fertilizer demand, at least in the next two to three years. Under the baseline scenario, world demand would rise on average by 1.7% per annum (p.a.) between the base year (average of the 2012/13 to 2014/15 campaigns) and 2019/20. Aggregate global demand is projected to reach 200 Mt at the end of the outlook period. K demand would expand firmly (2.6% p.a. to 35.3 Mt); P demand would grow more moderately (1.8% p.a. to 45.7 Mt); N demand growth rates would continue to decline progressively (1.3% p.a. to 119.2 Mt), reflecting N use efficiency gains in developed countries and China.

Medium-term Forecasts for World Fertilizer Demand (Mt nutrients)

	N	P ₂ O ₅	K ₂ O	Total
Av. 2012/13 to 2014/15 (e)	110.1	41.1	30.3	181.4
2019/20 (f)	119.2	45.7	35.3	200.2
Av. Annual Change	+1.3%	+1.8%	+2.6%	+1.7%

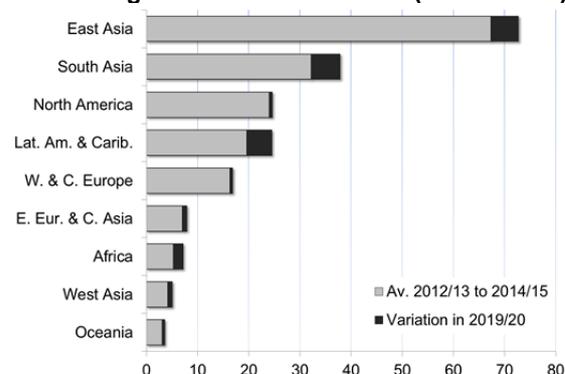
Source: P. Heffer, IFA, June 2015

The highest growth rates are found in Africa (4.4% p.a.), especially in Sub-Saharan Africa¹ (6.3% p.a.), where the policy and economic environment in a number of countries is stimulating demand. Demand would continue its rapid expansion in Latin America (3.0% p.a.), where the cropped area is increasing steadily, and in South Asia (3.0% p.a.), where P and K demand is progressively recovering from its sharp retreat in 2011/12 and 2012/13. Demand is also seen as rebounding in West Asia (2.9% p.a.) and Eastern Europe & Central Asia (2.0% p.a.), assuming easing geopolitical tensions. East Asian fertilizer demand growth continues to decelerate compared to the historical trend (1.0% p.a.), reflecting China's new policy of capping annual increases at 1% p.a. between 2015 and the end of the decade. Demand in developed economies is forecast to evolve marginally.

¹ Not including South Africa.

In volume terms, South Asia, East Asia and Latin America would account for 27, 25 and 23%, respectively, of the global increase in fertilizer demand. Africa would contribute 9% of global expansion.

Medium-term Outlook for Total Regional Fertilizer Demand (Mt nutrients)



Source: P. Heffer, IFA, June 2015

The forecast remains subject to major uncertainties

IFA's baseline forecast is subject to a number of uncertainties, in particular the evolution of the world economic context, weather-related crop shortfalls, the evolution of agricultural commodity prices and of fertilizer prices relative to crop prices, the evolution of the biofuel mandates, the evolution of fertilizer subsidy regimes, and new policies aimed at increasing nutrient use efficiency and recycling of organic nutrient sources.

FERTILIZER SUPPLY

World fertilizer demand in 2014 showed a modest increase. Fertilizer consumption was robust in East Asia, Latin America and Africa. Lower demand was seen in North America, Europe and West Asia, while demand remained static in South Asia.

Meanwhile, fertilizer supply flourished, as global production and trade reached record levels to meet world demand but also to replenish distribution pipelines.

The main exogenous factors impacting global supply in 2014 were natural gas supply shortfalls, rising uncertainties related to trade measures, and the massive drop in energy prices. Global fertilizer consumption in 2015 would show modest growth.

Global nutrient sales for all uses in 2014 were estimated at 240 Mt *nutrients*, increasing 1% over 2013. On average, the fertilizer industry operated at 80% of installed capacity.

Global fertilizer demand to grow by 1.5-2% per annum in the next five years

In the medium term, global fertilizer consumption would grow moderately at an annual rate of 1.7%, to reach 199.4 Mt *nutrients* in 2019. Increases are projected for all three major nutrients, with average annual growth rates of 1.3% for N, 2.1% for P and 2.4% for K.

Total sales in the fertilizer and industrial sectors in 2019 are forecast at 264 Mt *nutrients*, representing a 10% increase over 2014.

Massive societal benefits: investments in new capacity will secure future fertilizer supply while creating employment

Investments by the fertilizer industry will increase global fertilizer nutrient capacity, generate thousands of temporary construction jobs, and create permanent direct and indirect employment. Between 2014 and 2019, the fertilizer industry will invest close to US\$125 billion in more than 235 new capacity units, increasing global capacity by over 165 million tonnes products. IFA estimates that worldwide, close to 1.4 million persons are employed in the fertilizer sector. Over the next five years, investments by the fertilizer industry would create more than 45,000 direct and 95,000 indirect jobs.

Global diversification leading to extra-regional partnerships

Opportunities exist for margin expansion through global diversification. Following in the steps of large fertilizer companies in North America and Europe, large companies in other regions are now investing in Africa, Latin America and even China to expand their own diversification and integration through strategic alliances.

Regions with strong resource competitiveness factors are expanding their production capacity (North America, Eastern Europe & Central Asia, West Asia, and North Africa). In large fertilizer-consuming regions, extra-regional partnerships are being developed with local producing and distribution entities (Africa, Latin America).

Nitrogen Outlook

Large ammonia capacity increases are expected in East Asia and Africa

Global ammonia capacity is projected to grow by 16% compared with 2014, to 250 Mt NH₃ in 2019. The main additions to capacity will be in East Asia (China, Indonesia), Eastern Europe & Central Asia (Russia), North America (the United States) and Africa (Algeria, Egypt, Nigeria).

Modest growth of seaborne ammonia supply

Global seaborne ammonia availability in 2019 may increase 2% compared with 2014, to 18.8 Mt, assuming a gradual ramp-up of new capacity and completion of planned projects. The integration of new downstream capacity would reduce global seaborne ammonia availability in 2015 and 2016.

Firm demand in nitrogen industrial segments and sustained fertilizer consumption in East Asia, South Asia, Latin America and Africa support global nitrogen consumption in the near term

Global nitrogen supply in 2019 is projected at 174 Mt N and demand at 157 Mt N. Significant growth in demand would occur in East Asia (+8.5 Mt N), South Asia (+2.7 Mt N) and Latin America (+1.4 Mt N). In Africa, total demand would show a substantial increase of 19% compared with 2014, driven by rising fertilizer consumption (4% per annum). Global industrial nitrogen demand is projected to expand overall by 28% between 2014 and 2019, compared with a 6% increase in the fertilizer sector.

Supply growth to exceed growth in nitrogen demand during the next five years

Global potential supply would be more than adequate to meet growing demand. Potential annual surpluses would accelerate from 10 Mt N in 2016 to 18 Mt N in 2019.

Under a slow-growth supply scenario, global potential nitrogen supply would grow at 2.6% per annum, reaching 171 Mt N in 2019 compared with the base-case level of 174 Mt N. The potential surpluses would remain stable during the period from 2017 to 2019 at around 14 Mt N, equating to 9% of potential supply.

New urea capacity emerging in East Asia, Africa and North America

Urea was the major component of nitrogen production in 2014, representing 55% of total nitrogen output. Over the next five years, it is estimated that urea will contribute 72% of the projected ammonia capacity increment.

Close to 60 new units are planned to come on stream between 2014 and 2019, of which 20 would be located in China.

Most of the global increment post-2016 will occur outside China, in countries well-endowed with natural gas reserves.

Global urea capacity would increase by a net 44 Mt between 2014 and 2019, to 252 Mt. This corresponds to a compound annual growth rate of 4%. On a regional basis, three regions will account for two-thirds of the overall capacity growth. East Asia would contribute 35% of the net increase in capacity, followed by Africa (18%) and North America (15%).

Global urea supply is estimated at 179 Mt in 2014 and 211 Mt in 2019, growing at a projected average annual rate of 3.5% over 2014.

Strong demand growth in urea industrial uses, and sustained growth in agriculture

Global demand for urea for all uses is forecast at 198 Mt in 2019, increasing 32 Mt compared with 2014 or at a 3.6% average annual growth rate during the next five years. A significant increase in urea fertilizer demand is seen in South Asia, while industrial urea use would expand in East Asia (China) and Europe.

A soft balance in the short term, moving to potential growing surpluses in the long term

During the next five years, the potential surplus would decline between 2014 and 2018 as global demand growth exceeds supply growth. In 2019, the emergence of large capacity and supply would lead to growing surpluses in the longer term.

A slow-growth scenario would suggest a static potential surplus between 2016 and 2019, averaging 8.8 Mt/a urea and equating to 4% of potential supply.

Phosphate Outlook

A large supply of phosphate rock emerging in a few countries in Africa and West Asia

Global phosphate rock supply would grow 16% compared with 2014, to 255 Mt in 2019. Together, it is estimated that Morocco, Saudi Arabia, Jordan and China will account for 80% of this 35 Mt increment.

Growing phosphoric acid capacity in three exporting countries

Global phosphoric acid capacity in 2019 is projected at 62.9 Mt P_2O_5 , representing a net increase of 7.8 Mt over 2014.

Between 2014 and 2019, a total of 30 new acid units would be put on stream, of which three-quarters would be outside China.

Large capacity additions would occur in Morocco, Saudi Arabia, China and Brazil. The global supply of phosphoric acid is estimated at 51.1 Mt P_2O_5 in 2019, increasing 2.5% per annum between 2014 and 2019.

Moderate demand growth and a stable potential balance in the near term

Global phosphoric acid demand is forecast to grow at an annual rate of 2.4% compared with 2014, to 48.3 Mt P_2O_5 in 2019. Global phosphoric acid supply/demand potential conditions show stable potential balance in the short term, and a moderately growing potential surplus in late 2018/early 2019.

A slow-growth supply scenario shows a reduction in potential supply of 0.6 Mt P_2O_5 in 2019, leading to a possible surplus of less than 2.3 Mt P_2O_5 , equating to 4% of potential supply in 2019.

Massive capacity expansions over the next five years, with most being export-oriented

Close to 30 new units for processed phosphates are planned between 2014 and 2019. Together, China and Morocco will account for half of these plants. Other plants will be realized in Saudi Arabia, Brazil and India.

Global capacity for the main processed phosphate fertilizers would grow by 7.1 Mt P_2O_5 between 2014 and 2019, to 50.4 Mt P_2O_5 . The expansion of DAP capacity will account for the bulk of this increase, but these new plants could shift production to other phosphoric acid-based fertilizers.

Potash Outlook

Major brownfield projects and four new mines to come on stream between 2015 and 2019

Potash capacity will continue to expand at a rapid rate compared with 2014, as most projects initiated in the 2008-2012 period are now being commissioned. About 25 expansion projects are being carried out by established producers for completion between 2015 and 2019. Four large greenfield projects are planned for completion by 2019 in Canada, Russia and Belarus. Global potassium capacity is forecast to increase 16%, from 52.2 Mt K_2O in 2014 to 60.8 Mt in 2019.

North America and Eastern Europe & Central Asia to account for 70% of world incremental potash supply between 2014 and 2019

Global potential potassium supply would increase to 51.8 Mt K_2O in 2019, representing an overall increment of 9 Mt, or 21% growth compared with 2014. Three regions will account for the bulk of supply growth: North America (Canada) will contribute 7 Mt K_2O , followed by Eastern Europe & Central Asia (Russia, Belarus), with a net 1 Mt, and East Asia (China) with 1 Mt.

Moderate potash demand growth over five years

Global potassium demand for all uses would reach 39.5 Mt K_2O in 2019, representing an average annual growth rate of 2.5% between 2014 and 2019.

Short-term equilibrium moving towards a growing surplus in the long run

Global supply growth will exceed growth in demand in the long term. A moderate expansion of the prevailing surplus will continue until 2016; by 2017, the global potential surplus would accelerate as a result of the planned commissioning of new large-capacity projects.

Under a slow-growth scenario, the five-year global supply and demand would show relatively stable potential surpluses of 8-9 Mt K_2O in 2015 and 2016 and, by 2017, increase gradually to 11 Mt in 2019.

Sulphur Outlook

A new supply of exportable sulphur in West Asia and lower import demand in the United States

Global production of elemental sulphur in 2019 would grow by an overall 27% compared with 2014 (+15.2 Mt), to 70.8 Mt S, on account of higher sulphur recovery in the oil and gas sectors.

Large increases of exportable output are projected in Abu Dhabi, Qatar, Russia, Saudi Arabia and Turkmenistan. In the United States, increased sulphur production would reduce import demand in the near term.

Firm sulphur demand in industrial sectors, and moderate growth in the fertilizer sector

Global consumption of elemental sulphur is projected to grow at an annual rate of 3.3% compared with 2014, to 67.7 Mt S in 2019.

This increase is driven by firm demand growth for sulphuric acid in industrial segments and moderate growth in the fertilizer sector.

Supply/demand deficit moving to a potential growing surplus in the near term

Global supply of elemental sulphur would grow by an overall 27% during the next five years, compared with 16% in the case of global demand. The global supply/demand situation shows a marginal deficit in 2015, moving to a growing surplus in the near term and reaching 3 Mt S in 2019.

When taking into account historical slippage on projected supply, a slow-growth supply scenario shows a growth rate of 4.5% per annum over 2019, resulting in a marginal surplus in 2016 and 2017 followed by an acceleration to 1.8 Mt S by 2019.