

82nd IFA Annual Conference
Sydney (Australia), 26-28 May 2014



Fertilizer Outlook 2014-2018

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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 2013/14 to 2018/19. The third part provides projections of fertilizer supply for the period 2014 to 2018.

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 presented at the 82nd IFA Annual Conference held in Sydney, Australia in May 2014: the IFA report *Medium-Term Outlook for World Agriculture and Fertilizer Demand: 2013/14-2018/19* and the IFA report *Fertilizers and Raw Materials Global Supply: 2014-2018*. These two comprehensive reports are strictly reserved for IFA members.

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ECONOMIC AND POLICY CONTEXT

The world economy has been recovering since the second half of 2013

World economic activity started to rebound in the second half of 2013. Global GDP growth is expected to improve in 2014 and 2015, reflecting progressive recovery in advanced economies.

In the medium term, the world output is projected to rise by almost 4% annually, with rates slightly over 2% for advanced economies and over 5% for emerging and developing economies. The medium-term outlook is characterized by a slowdown of growth prospects in China compared to historical trends. Some of the main uncertainties in the outlook include public debt and fiscal adjustment fatigue in advanced economies, persisting high unemployment and the threat of deflation in the EU, the financial vulnerabilities of some emerging economies, and geopolitical tensions in the Middle East and in Ukraine.

Commodity prices in general, and crude oil prices in particular, remained high in 2013 and the beginning of 2014. Oil prices are seen as remaining stable in 2014 and would slightly contract in 2015.

Faster improvements in nutrient management performance may influence the outlook

Fertilizer management is mostly influenced by two sets of policies: fertilizer subsidies and nutrient management policies. In a five-year perspective, changes to fertilizer subsidy schemes can be anticipated in India to rebalance fertilization; fertilizers are likely to be subsidized in a larger number of Sub-Saharan African countries to trigger adoption by smallholders; effective and efficient nutrient management may become a policy goal of more and more countries, including some emerging economies; and food companies are increasingly setting their own nutrient management standards. All these anticipated changes will influence future fertilizer demand.

WORLD AGRICULTURE

Second largest crop ever in perspective for the 2014/15 campaign

Favourable weather conditions across all the major producing areas and very attractive crop prices boosted the 2013 harvest. Record outputs were achieved for all cereal and oilseed crops.

Global cereal inventories, as well as stocks held by the major exporters at the end of the 2013/14 campaign, have been rebuilt, leading to declining prices. However, prices remain relatively attractive compared to historical trends.

Preliminary forecasts for the 2014/15 campaign indicate that the 2014 global cereal output would be the second largest ever. If cereal production forecasts materialize, the campaign would be fairly balanced and the stock-to-use ratio would remain comfortable compared to two years earlier.

There are, however, fears that the impact on winter wheat of the drought in the southern plains of the United States (US) may be underestimated; and that rain-delayed maize plantings in the US Corn Belt might impact the maize area and yield. These concerns are exacerbated by those about the geopolitical situation in Ukraine and prospects for an El Niño event in 2014/15.

Agricultural markets would remain tight in the medium term

Production of cereals and oilseeds is projected to expand steadily, with higher growth rates for soybean and maize than for wheat and rice. About two-thirds of the productivity gains would come from higher productivity. Area expansion would mostly take place in South America and the Commonwealth of Independent States (CIS) for annual crops, and in Southeast Asia for oil palm.

Because maize ethanol production is seen as growing modestly over the outlook, the increase in global cereal consumption in the next five years is expected to be led by a strong rebound of feed uses. Utilization of maize is projected to rise faster than demand for wheat and rice, reflecting the contribution of feed uses. Trade volumes are seen as increasing strongly, led by rising imports by China to meet its feed requirements.

The world stock-to-use ratio for rice would contract from its current high, while the ratios for wheat and maize are expected to tighten slightly, raising concerns about the vulnerability of the wheat and coarse grain markets.

With persisting tight market conditions, international cereal prices are seen as firming over the outlook and remaining attractive, well above their pre-crisis levels.

FERTILIZER DEMAND

World fertilizer demand is seen as rebounding firmly in 2013/14

Supported by strong crop prices in the first half of the year and a rebound in South Asia, world consumption in 2013/14 is seen as growing by 3.1% year-on-year, to 184 Mt nutrients. N demand would readjust following weak growth in 2012/13. It is expected to rise by 3.1% to 112.2 Mt. World demand for P fertilizers would rebound modestly, by 1.4%, to 41.7 Mt, while K consumption is seen as sharply up, by 5.3%, to 30.2 Mt.

Fertilizer demand in 2013/14 is anticipated to contract slightly in North America as a result of declining crop prices and unfavourable weather at the beginning of 2014. Demand is seen as up in the rest of the world. It would rebound firmly in South Asia, while high growth rates of 5% or more are seen in Oceania, West Asia, Latin America and Africa. Demand would expand more modestly in the remaining regions. South Asia, East Asia and Latin America would record the largest year-on-year increases in volume.

The outlook for 2014/15 is relatively positive, with declining but still fairly attractive prices for cereals and oilseeds, which are anticipated to stimulate fertilizer applications. Global fertilizer demand is forecast to expand by 2.1%, to 188 Mt. Demand for K would continue to grow firmly (+2.5%, to 31.0 Mt), while demand for P would rise faster than in the recent past (+2.4%, to 42.6 Mt), and demand for N would expand more modestly (+1.9%, to 114.3 Mt). Fertilizer demand would increase in all the regions but Oceania, where it would slightly retreat following a strong increase in the previous season. Demand would rebound in North America and continuous growth is seen in all the other regions, with rates above 3% in Africa, South Asia and Latin America. The largest increases in volume are anticipated in East Asia, South Asia and Latin America.

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

	N	P ₂ O ₅	K ₂ O	Total
11/12	107.9	41.4	28.0	177.2
12/13	108.8	41.1	28.7	178.6
13/14 (e)	112.2	41.7	30.2	184.0
<i>Change</i>	<i>+3.1%</i>	<i>+1.4%</i>	<i>+5.3%</i>	<i>+3.1%</i>
14/15 (f)	114.3	42.6	31.0	187.9
<i>Change</i>	<i>+1.9%</i>	<i>+2.4%</i>	<i>+2.5%</i>	<i>+2.1%</i>

(e): estimate; (f): forecast

Source: P. Heffer, IFA, June 2014

Global fertilizer demand is anticipated to reach 200 Mt in 2018/19

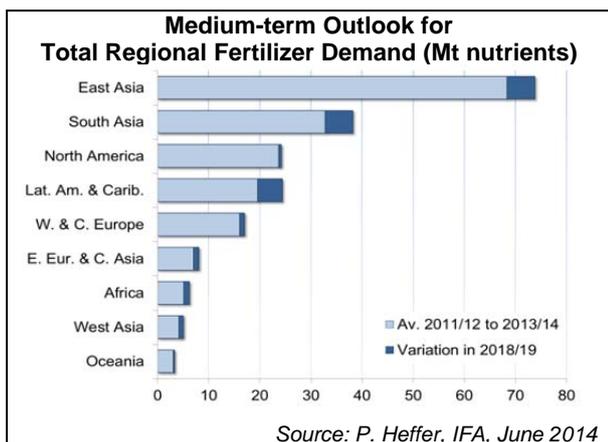
The medium-term outlook for agriculture remains favourable overall, with projected persisting tight market conditions and firm prices for the main agricultural commodities. Positive market fundamentals are expected to boost fertilizer use. Under the baseline scenario, world demand would rise on average by 1.8% per annum (p.a.) between the base year (average of the 2011/12 to 2013/14 campaigns) and 2018/19. For the first time ever, aggregate global demand would exceed 200 Mt. Demand for K fertilizers would expand faster (2.8% p.a. to 34 Mt) than that for P (1.9% p.a. to 46 Mt) and N (1.5% p.a. to 120 Mt) fertilizers.

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

	N	P ₂ O ₅	K ₂ O	Total
Av. 2011/12 to 2013/14 (e)	109.6	41.4	29.0	179.9
2018/19 (f)	119.8	46.2	34.2	200.3
<i>Av. Annual Change</i>	<i>+1.5%</i>	<i>+1.9%</i>	<i>+2.8%</i>	<i>+1.8%</i>

Source: P. Heffer, IFA, June 2014

The highest growth rates are forecast in Latin America (3.7% p.a.), where cultivated land area is expanding steadily, followed by Africa (3.4% p.a.), where volumes are still very low and several countries subsidize fertilizers to stimulate consumption, and West Asia (+3.1% p.a.), where the geopolitical situation can be expected to improve. Demand is seen as progressively rebounding in South Asia (2.6% p.a.), assuming transition to a more effective fertilizer subsidy regime, while East Asian demand growth would continue to decelerate (+1.3% p.a.) as China's N and P fertilizer demand reaches a plateau. Demand expansion in the rest of the world would be modest. East Asia, South Asia and Latin America are forecast to account for 27, 26 and 24%, respectively, of the global increase in demand.



Trends for the next five years show a progressive slowdown of N demand growth, while P and K demand would continue to expand linearly. This decline in N demand growth is driven by N use efficiency gains in developed countries and, more recently, in some emerging economies.

FERTILIZER SUPPLY

World nutrient sales were rather static in 2013 as a result of stagnant fertilizer demand. Fertilizer demand was depressed in South Asia, while showing marginal growth in East Asia and North America. The main depressing factors included variations in exchange rates and economic uncertainties. Global fertilizer consumption would likely recover in 2014.

World Fertilizer Consumption Calendar Year Basis			
Mt nutrients	2013	2014(e)	2018(f)
Nitrogen N	111.3	113.7	119.5
Phosphorus P ₂ O ₅	41.8	42.2	45.9
Potassium K ₂ O	29.7	30.8	34.0
Total	182.8	186.7	199.4

Source: P. Heffer, IFA, June 2014

Global nutrient sales for all uses in 2013 were estimated at 236 Mt *nutrients*, increasing 2.0% over 2012. On average, the fertilizer industry operated at 79% of installed capacity.

Global fertilizer demand is growing moderately

In the medium term, global fertilizer consumption would show moderate annual growth of 1.8% to reach 199.4 Mt *nutrients* in 2018. Increases are projected for all three major nutrients, with average annual growth rates of 1.5% for nitrogen, 2.0% for phosphorus and 2.9% for potassium.

Total sales in the fertilizer and industrial sectors in 2018 are forecast at 263 Mt *nutrients*, representing a 12% increase over 2013.

Positive effects from industry investments

Investments in new capacity by the fertilizer industry will have positive effects in the form of new supply to secure growing fertilizer demand and employment in the manufacturing and mining sectors. Close to 200 expansion projects are expected to come on stream in the next five years, in addition to 30 projects related to phosphate rock mining.

Global capacity of fertilizer products and raw materials would increase by 146 Mt products, or 18%, over 2013. These developments equate to a total investment of US\$110 billion. Close to 40 thousand direct jobs and 60 thousand indirect jobs would be created through the fertilizer industry's on-going investments in new productive capacity.

Global and regional supply trends

A number of developments would occur across regions, reinforcing some regional capacity trends to benefit from abundant natural resource endowments.

Mutual interests in supporting and expanding domestic consumption or securing access to feedstock for import will foster intra- and inter-regional partnerships.

Polarization appears to emerge between exportable supply regions and import demand regions. The optimization of operational and environmental performance is leading the fertilizer industry towards more vertical and horizontal integration and inducing broad-based consolidations in developed countries.

Nitrogen Outlook

Large ammonia capacity increases expected in East Asia and Africa

Global ammonia capacity is projected to grow 16% over 2013, reaching 245 Mt NH₃ in 2018.

The main additions to capacity will be in East Asia (China, Indonesia), Africa (Algeria, Egypt, Nigeria), West Asia (Saudi Arabia, Iran, Bahrain) and Latin America (Venezuela, Brazil).

Moderate net growth of seaborne ammonia supply

Global seaborne ammonia availability in 2018 may increase 3-4% over 2013 to reach 19 Mt, assuming a gradual ramp-up of new capacity. The integration of new downstream capacity would reduce global seaborne ammonia availability to below 18 Mt in 2015 and 2016.

Firm demand in nitrogen industrial segments supports global consumption

Global nitrogen supply in 2018 is projected at 176 Mt N and demand at 161 Mt N.

Significant growth in demand is seen in East Asia (+9 Mt N, especially in industrial segments), South Asia (+3.0 Mt N) and Latin America (+2.0 Mt N). In other regions demand would increase by 0.4-1.0 Mt N.

Global industrial nitrogen demand is projected to expand by an overall 30% between 2013 and 2018, compared with a 7.4% increase in the fertilizer sector.

Growing potential nitrogen surplus after 2016

Global potential supply would be more than adequate to meet growing demand. Potential annual surpluses due to the difference in global supply of and demand for nitrogen products would accelerate from 7-10 Mt N in 2015-2016 to exceed 13 Mt N by 2017.

Under a slow-growth supply scenario, all new supply would be absorbed by the growth of demand until 2015. Expansion of supply would start to exceed demand growth by 2016, resulting in higher potential surplus, which may equate to 6% of potential supply in 2018.

World Nitrogen Potential Supply/Demand Balance (million metric tonnes N)

	2014	2015	2016	2017	2018
Supply					
Capacity	178.37	187.02	193.78	199.73	201.47
Potential Supply*	152.77	159.59	165.78	172.06	176.49
Demand					
Fertilizer Demand	113.65	115.71	116.95	118.23	119.50
Non-fertilizer Demand	31.65	33.81	35.90	37.47	38.97
Distribution Losses	2.50	2.57	2.63	2.70	2.76
Total Demand	147.80	152.09	155.47	158.40	161.23
Potential Balance	4.97	7.50	10.31	13.66	15.26
% of Supply	3%	5%	6%	8%	9%

* Supply is effective capacity, equating to maximum achievable production. It is derived by multiplying capacity by the highest achievable operating rate.

Source: M. Prud'homme, IFA, June 2014

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

Close to 60 new urea units are planned to come on stream between 2014 and 2018, of which 25 would be located in China. Beyond 2016, all new urea capacity worldwide will be located outside China, confirming the broadening of capacity expansion to other countries.

Global urea capacity would increase by 41 Mt between 2013 and 2018, to 245 Mt. This corresponds to a compound annual growth rate of 3%. East Asia would contribute 36% of the net capacity increase, followed by Africa (22% share) and North America (13%).

Global urea supply is estimated at 182 Mt in 2013, 188 Mt in 2014 and 216 Mt in 2018, growing at a projected average annual rate of 4% over 2013.

Firm demand growth in industrial uses and moderate growth in agriculture

Global demand for urea for all uses is forecast at 203 Mt in 2018, increasing 34 Mt over 2013 or at a 3.3% average annual growth rate over the next five years. Significant increases in urea demand are seen in East Asia (mostly industrial demand), South Asia, and Latin America. These three regions will account for 80% of the world's urea demand growth during the forecast period.

Stable balance in the near term as demand growth matches supply growth

Over the next five years the potential surplus will remain relatively stable over the period from 2014 to 2015, see an upward correction in 2016-17 and remain stable afterward.

A slow-growth scenario would suggest a gradual increase of potential surplus, with potential decreases in 2015 and 2018 as a result of project delays.

World Urea Potential Supply/Demand Balance (million metric tonnes product)					
	2014	2015	2016	2017	2018
Supply					
Capacity	212.17	224.64	237.13	244.33	244.98
Potential Supply*	188.17	195.84	204.74	211.41	215.97
Demand					
Fertilizer Demand	149.10	153.74	155.53	157.61	159.51
Non-fertilizer Demand	30.70	34.64	38.18	40.51	42.95
Total Demand	179.80	188.38	193.71	198.12	202.46
Potential Balance	8.37	7.46	11.03	13.29	13.51
% of Supply	4%	4%	5%	6%	6%

Source: M. Prud'homme, IFA, June 2014

Phosphate Outlook

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

Global phosphate rock supply would grow 18% over 2013, to 258 Mt in 2018. Together, Morocco, China and Saudi Arabia will account for 62% of this 40 Mt increment.

Growing phosphoric acid capacity in Morocco, Saudi Arabia, China and Brazil

The global phosphoric acid capacity in 2018 is projected at 61.5 Mt P_2O_5 , representing a net increase of 7.2 Mt over 2013. Between 2013 and 2018 a total of 30 new acid units are currently planned for completion, of which two-thirds will be outside China. Large capacity additions will occur in Morocco, Saudi Arabia, China and Brazil.

Global supply of phosphoric acid is estimated at 52 Mt P_2O_5 in 2018. Between 2013 and 2018 global phosphoric acid supply would increase by overall 6.7 Mt overall, representing an average annual growth rate of 3.0% over 2013.

Moderate demand growth and new supply, leading to a gradual increase of potential surplus in the near term

Global phosphoric acid demand is forecast to grow at an annual rate of 2% over 2013, to reach 48 Mt P_2O_5 in 2018. Global phosphoric acid supply/demand potential conditions show a stable potential balance in the short term, followed by a moderate increase starting in 2016 and reaching 4.3 Mt P_2O_5 by 2018, representing 8% of potential supply.

World Phosphoric Acid Potential Supply/Demand Balance (million metric tonnes P_2O_5)					
	2014	2015	2016	2017	2018
Supply					
Capacity	55.60	57.67	58.62	60.41	61.51
Potential Supply*	46.71	48.14	49.33	50.80	52.03
Demand					
Fertilizer Demand	37.33	38.18	38.98	39.74	40.49
Non-fertilizer Use	5.59	5.88	5.95	6.15	6.28
Distribution Losses	0.86	0.88	0.90	0.92	0.94
Total Demand	43.77	44.94	45.83	46.81	47.71
Potential Balance	2.93	3.20	3.50	3.99	4.32
% of Supply	6%	7%	7%	8%	8%

Source: M. Prud'homme, IFA, June 2014

A slow supply-growth scenario shows a reduction of potential supply by 0.6 Mt P_2O_5 in 2018, leading to a possible surplus of less than 3.8 Mt, equating to 7% of potential supply in 2018.

Large DAP capacity expansions over the next five years, all earmarked for export

About 22 new units for processed phosphates are planned between 2013 and 2018. China would account for one-third of them. Morocco and Saudi Arabia would add another seven new facilities.

Global capacity of the main processed phosphate fertilizers would grow by 5.1 Mt P_2O_5 between 2013 and 2018, to 47.7 Mt P_2O_5 . The expansion of DAP capacity would account for 80% of this increase.

Potash Outlook

Significant capacity additions over the next five years

Potash capacity has continued to be developed worldwide, but at a slower pace since 2011. About 20 expansion projects are being carried out by established producers for completion between 2014 and 2018.

Only three greenfield projects are planned for completion before 2019, in Canada and Russia. Global potassium capacity is forecast to increase from 49.7 Mt K_2O in 2013 to 60.7 Mt in 2018.

North America and EECA to account for 88% of world incremental supply between 2013 and 2018

Global potential potassium supply would increase to 51.4 Mt K_2O in 2018, representing an overall increment of 8.8 Mt, or 20.7% growth over 2013.

Three regions would account for nearly all the projected increase of potential supply: North America (mainly Canada), would contribute 4.6 Mt K_2O , followed by Eastern Europe and Central Asia (EECA) (Russia and Belarus) with 3.4 Mt and East Asia (China) with 0.8 Mt. Expansions in the first two regions are earmarked for the export markets.

Sustained potash demand over five years

Global demand for potassium is estimated at 38.3 Mt K_2O in 2018, equating to an average annual growth rate of 3.0% between 2013 and 2018.

World potash demand would expand at an average annual rate of 1.6 Mt MOP p.a. between 2013 and 2018.

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

Global demand would grow in parallel with supply until 2016. By 2017 the annual incremental supply would accelerate and start to exceed global demand growth.

World Potash Potential Supply/Demand Balance (million metric tonnes K_2O)

	2014	2015	2016	2017	2018
Supply					
Capacity	50.53	54.69	56.70	60.26	60.72
Potential Supply*	43.57	45.17	46.97	49.74	51.44
Demand					
Fertilizer Demand	30.79	31.58	32.36	33.17	33.99
Non-fertilizer Demand	2.84	2.92	3.01	3.10	3.19
Distribution Losses	0.99	1.02	1.04	1.07	1.10
Total Demand	34.62	35.51	36.41	37.34	38.28
Potential Balance	8.95	9.66	10.56	12.40	13.16
% of Supply	21%	21%	22%	25%	26%

Source: M. Prud'homme, IFA, June 2014

Under a slow-growth scenario, the five-year global supply and demand would show relatively stable potential surpluses of 9-10 Mt K_2O between 2013 and 2017, followed by an increase to 11.5 Mt in 2018, equating to 23% of projected supply.

Sulphur Outlook

New supply of exportable sulphur in West Asia and lower import demand in China and the United States

Global production of elemental sulphur would grow by 31% over 2013, to reach 73.3 Mt S in 2018, on account of higher S recovery from the oil and gas sectors. Large increases in exportable output are anticipated in Abu Dhabi, Turkmenistan and Saudi Arabia. Production increases in China and the United States would reduce their respective 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 3.8% over 2013, to 70.4 Mt S in 2018.

This increase would mainly be driven by firm growth of sulphuric acid consumption in industrial segments (particularly in ore leaching operations) and by recovery in demand for fertilizers.

Supply/demand deficit shifting to a potential modest surplus

The global supply/demand situation of elemental sulphur shows a resilient deficit in 2014, shifting to a moderate surplus, with the potential to reach about 3 Mt S in 2018.

World Elemental Sulphur Potential Supply/Demand Balance (million metric tonnes S)

	2014	2015	2016	2017	2018
Sulphur Demand					
Sulphur for sulphuric acid	53.44	55.36	57.48	59.83	62.04
Non-sulphuric acid uses	7.99	8.11	8.18	8.25	8.34
Total Demand	61.44	63.47	65.65	68.08	70.38
Sulphur Supply					
Oil recovered	27.56	28.70	29.76	30.76	32.11
Gas recovered	28.05	31.52	33.96	35.84	36.38
Others, including Frasch	3.72	3.90	4.31	4.83	4.80
Total Supply	59.33	64.12	68.02	71.42	73.29
Potential Balance	<u>-2.11</u>	<u>0.65</u>	<u>2.37</u>	<u>3.35</u>	<u>2.91</u>
% Balance/Supply	-4%	1%	3%	5%	4%

Source: M. Prud'homme, IFA, June 2014

This slow-growth supply scenario equates to a growth rate of 6% p.a. over 2013. Under this slow-growth scenario, the supply/demand situation would remain in deficit until 2016 and then shift to a marginal surplus in 2017 and 2018 of less than 1.8 Mt S.