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# Short-Term Fertilizer Outlook 2015 – 2016

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This public summary 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 on the occasion of the IFA Strategic Forum held in Paris, France in November 2015. It draws on two reports that were prepared for the IFA Strategic Forum; these detailed reports are restricted to IFA members only: *Short-Term Prospects for World Agriculture and Fertilizer Demand: 2014/15-2016/17* and *Global Fertilizer Supply and Trade: 2015-2016*.

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# ECONOMIC AND POLICY CONTEXT

## ***Weak economic growth in 2015, but a rebound is expected in 2016***

World economic growth prospects for 2015 are disappointing, largely due to weakening expansion in emerging economies. The 2015 global gross domestic product (GDP) is seen as rising by 3.1%, according to the International Monetary Fund (IMF), i.e. 0.3% less than in 2014 and 0.4% below IMF's forecast of April 2015. Global activity is projected to rebound in 2016, with a 3.6% year-on-year expansion.

The trend observed since 2011 has been largely influenced by decelerating growth in China, dropping to below 7% in 2015 and around 6% as forecast for 2016, compared to more than 10% per year between 2000 and 2010. This activity slowdown results in weaker import growth in China, declining international trade and weakening commodity prices, which have a higher than expected impact on some of the major commodity exporters, especially Russia and Brazil. Weakening commodity prices have also triggered currency depreciation in a number of advanced and emerging economies.

The decline in commodity prices is exemplified by crude oil prices, which dropped by 50% over the past 12 months to their lowest level in more than five years. With structural supply-demand imbalances, commodity prices are expected to remain low in 2016. Similar trends are observed for agricultural commodities, as illustrated by the United Nations' Food and Agriculture Organization (FAO) Food Price Index, which fell in August to its lowest level since 2009. This contraction reflects weakening prices for all the main agricultural commodities.

## ***No major fertilizer-related policy changes anticipated in 2016***

Policies in developed countries put increasing emphasis on environmental stewardship in general, and on nutrient use efficiency and recycling in particular. Environmental aspects also influence nutrient management in emerging economies. China's decision earlier this year to limit growth in fertilizer consumption to 1% per year between 2015 and 2020 is the most notable example, but there are questions regarding its implementation. Related to that decision, the Chinese government has decided to apply a 13% VAT on fertilizer sales from September of this year.

India's recent mandate to coat all domestically produced urea with neem oil to improve urea use efficiency is another example; however, it seems this approach does not provide (or only partly provides) the expected environmental, agronomic and economic benefits.

The evolution of subsidy regimes also has a critical impact on fertilizer demand. 2015 has seen little change in the urea subsidy and Nutrient Based Subsidy (NBS) regimes in India and, a priori, no ambitious change is expected for the 2016/17 campaign. In Sub-Saharan Africa, a number of countries are struggling with the sustainability of the fertilizer subsidy schemes in place, raising questions about the viability of these schemes and their long-term impact on fertilizer use in Africa.

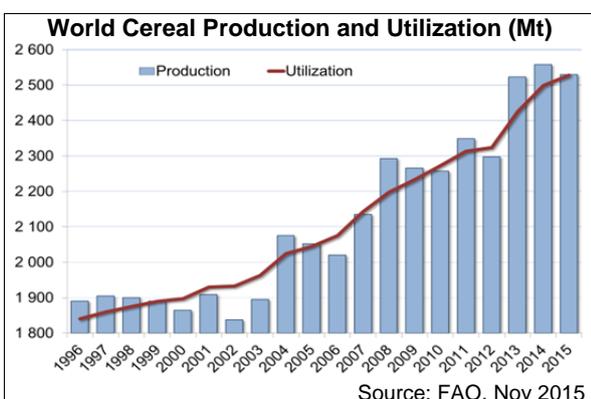
At the global level, negotiations have been taking place on a number of nutrient-related issues, including those on the Sustainable Development Goals (SDGs) adopted in September, which will set the global sustainable development agenda for the coming 15 years. Negotiators are now discussing indicators for monitoring the SDGs. Some of the proposed indicators explicitly refer to nitrogen (N) and phosphorous (P) (e.g. N use efficiency). In addition, 2015 was the United Nations International Year of Soils, a year-long event that drew the attention of all stakeholders to the need to preserve or improve the health of soils, which are a very slowly renewable resource. Obviously, nutrient management has a key role to play in this respect, which may be reflected in future policies. A number of other international organizations or initiatives are also addressing N and P policies, especially the United Nations Environment Programme (UNEP), the Organisation for Economic Co-operation and Development (OECD) and the International Nitrogen Management System (INMS), all of which are calling for greater nutrient use efficiency and reduced losses to the environment. The climate change negotiations in November/December in Paris (COP21) may also focus on nutrient management with, on the one hand, proposals to reduce nitrous oxide (N<sub>2</sub>O) emissions from fertilizer and, on the other hand, consideration of the initiative to increase soil organic matter by four parts per thousand per year during the next 50 years (the '4 per thousand' initiative) with the objective of simultaneously enhancing carbon sequestration in soils and making agricultural soils more healthy for improved food security.

# WORLD AGRICULTURE

## ***A balanced agricultural campaign in 2015/16, with signs of a potentially tightening market***

The 2014 world cereal harvest established a new record, driven by larger wheat and maize crops.

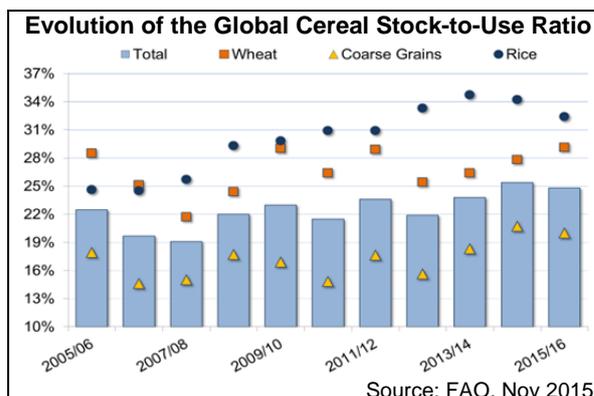
Influenced by declining and low international prices for most agricultural commodities, and short rainfall in some important cereal production areas, the 2015 global cereal crop is forecast to slightly contract, by approximately 1%. The larger wheat harvest would not offset the anticipated drop in maize and rice production. A record soybean crop is also anticipated in 2015/16.



The winter crop area for the 2016 harvest is projected to slightly contract in response to low wheat prices and dry conditions at planting in some of the key growing areas. At the same time, maize plantings in the southern hemisphere are affected by irregular or below-average rains.

Following two consecutive years of strong growth, world cereal uses are seen as rising more moderately in 2015/16, by about 1%. The increase in wheat and rice utilization is driven by food uses. Coarse grain utilization would remain almost unchanged. The 2015/16 campaign is expected to be balanced, with a marginal surplus or deficit.

Changes in world cereal inventories are seen as negligible in 2015/16, with a small increase in wheat stocks offsetting a drop in those of rice while coarse grain inventories would remain almost unchanged. At the end of 2015/16 China is projected to store 250 million metric tonnes (Mt) of cereals, accounting for 44% of world stocks.



By the end of the 2015/16 campaign, the stock-to-use ratio is forecast to increase for the third consecutive year for wheat, to slightly retreat for maize, and to contract for the second year in a row for rice. While the stock-to-use ratios for the three cereal groups are seen as remaining at comfortable levels, the stock-to-disappearance ratios for the major exporters indicate slightly tightening market conditions for coarse grains and rice.

With ample availabilities, international prices of cereals, oilseeds, sugar and cotton declined or remained low over the past 12 months. Prices are anticipated to stay depressed in the coming months unless unfavourable weather affects some of the major exporters.

## FERTILIZER DEMAND

### ***Low crop prices affect world fertilizer demand in 2015/16***

The 2015/16 campaign is impacted by low international agricultural commodity prices and by weakening economic activity in emerging economies. Global fertilizer demand in 2015/16 is forecast to retreat by 0.1%, to 183.1 Mt. The 0.1% increase in N demand (110.4 Mt) would not fully counterbalance demand contractions of 0.9% for P (40.8 Mt) and 0.2% for potassium (K) (31.9 Mt).

**Global Fertilizer Demand (Mt nutrients)**

	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	Total
2012/13	108.6	41.4	29.2	179.1
2013/14	109.9	40.5	30.4	180.7
2014/15 (e)	110.3	41.1	32.0	183.4
<i>Change</i>	<i>+0.4%</i>	<i>+1.6%</i>	<i>+5.4%</i>	<i>+1.5%</i>
2015/16 (f)	110.4	40.8	31.9	183.1
<i>Change</i>	<i>+0.1%</i>	<i>-0.9%</i>	<i>-0.2%</i>	<i>-0.1%</i>
2016/17 (f)	112.0	41.6	33.0	186.6
<i>Change</i>	<i>+1.4%</i>	<i>+2.1%</i>	<i>+3.3%</i>	<i>+1.9%</i>

(e): estimate (f) forecast

Source: IFA, Nov 2015

Regionally, demand is seen as dropping in Latin America and Oceania, following strong expansion in previous years, as well as in West Asia due to geopolitical tensions. Demand would stagnate in East Asia. Increases in the rest of the world would not offset the declining regions. The largest year-on-year changes in volume are seen in Latin America (contraction) and South Asia (expansion).

### **World fertilizer demand is seen as rebounding in 2016/17**

Demand in 2016/17 is expected to be influenced by persisting low (but probably no longer declining) crop prices and rebounding economic growth in emerging economies.

Global fertilizer demand is forecast to expand by 1.9% in 2016/17, to 186.6 Mt, assuming no major changes to agricultural market fundamentals; a progressive change in fertilizer subsidy rates in India that would support balanced fertilization; and continuous improvement of N and P use efficiency in China. Driven by increased supply in China, K demand is seen as growing firmly (+3.3%, to 33.0 Mt). Demand for N and P is seen as expanding more modestly, by 1.4% to 112.0 Mt for N, and by 2.1% to 41.6 Mt for P.

Fertilizer demand is forecast to contract in Oceania, supposing that El Niño will have a negative impact on regional agriculture. It is seen as stable in Western & Central Europe, and it would rise elsewhere. Assuming easing economic conditions in Brazil and Argentina, demand would strongly rebound in Latin America. Demand would also rebound firmly in West Asia, presuming average weather conditions and reduced sanctions against Iran. Growth would remain modest in North America and East Asia, as the outlook is influenced by improvement in fertilizer use efficiency. Firm expansion is forecast in Eastern Europe & Central Asia, South Asia and Africa. The largest changes in volume are seen in Latin America and South Asia, followed by East Asia.

Between 2013/14 and 2016/17, global demand is expected to increase by only 3.3% (i.e. about 1% per year), with much stronger growth for K (+8.7%) than for N (+2.0%) and P (+2.8%). Over the same period, North America would be the only region recording negative growth. South Asia would witness the strongest expansion, in both absolute and relative terms.

### **The forecast remains subject to significant uncertainties**

IFA's baseline forecast is subject to a number of uncertainties, in particular the evolution of the world economic and geopolitical context; weather-related crop shortfalls (especially in relation to El Niño); 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 improving nutrient management performance, capping and/or taxing fertilizer use, and increasing the recycling of organic nutrient sources.

Uncertainties are relatively balanced in 2015/16 for all three nutrients. For 2016/17, downside risks tend to dominate the outlook, reflecting the global economic prospects. Proportionally, risks are seen as higher for K than for P and N due to greater volatility in the P and K markets.

## **FERTILIZER SUPPLY**

2015 was characterized by near-stagnant demand and few trade opportunities. Meanwhile, capacity and supply availability are increasing on account of investment decisions taken four to five years ago during the post-2008 era. The fertilizer industry nowadays is faced with over-capacity issues. Rationalization and consolidation activities have emerged in key producing countries.

World nutrient sales in 2015 were estimated at 241 Mt *nutrients*, representing a moderate increase of 2% over 2014. Fertilizer sales, which accounted for 78% of total sales, were estimated at 183 Mt *nutrients*, showing no growth over 2014. Net industrial uses and non-allocated tonnages reached 58 Mt *nutrients*.

Global sales of primary nutrients were essentially driven by firm domestic deliveries. Home deliveries rose by 3%, to 189 Mt nutrients, and contributed 78% of total primary nutrient sales.

Global nutrient demand in 2015 was adequately supplied from existing production capacity and from newly-commissioned operations. However, feedstock issues and political tensions have continued to impact production and global trade.

In 2015 global production of the main fertilizers marked a pause; there was little or no variation in the output of most products, with the exception of increasing DAP volumes.

Potash production declined, while other products registered modest increases. Globally, the fertilizer industry operated at 78% of installed capacity.

### ***Moderate growth in 2016 global sales***

World fertilizer demand in 2016 is seen as recovering. Global nutrient demand for all uses is estimated to grow by 1-2%, reaching 245 Mt *nutrients*; however, production levels might be lower, especially for potash and DAP, as a result of large import volumes late in 2015, which would translate into significant carry-over inventories in key consuming countries (e.g. China, India).

### ***Significant capacity expansions in 2016***

Close to 100 new production units and expansion projects are expected to be operational in 2015 and 2016, adding 20 Mt nutrients of incremental capacity for the manufacture of primary products (ammonia, P acid and potash).

## **Nitrogen Outlook**

### ***Large ammonia capacity increases in the United States, Saudi Arabia, Indonesia, Nigeria and Russia***

Global ammonia capacity is projected to grow by 5% in 2016 to 232 Mt. Large capacity increases are seen in the United States, Saudi Arabia, Indonesia, Nigeria and Russia.

### ***Seaborne ammonia supply expanding in 2016***

Global seaborne merchant ammonia capacity in 2015 was stable, as no new source of supply was commissioned during the year. Global seaborne availability in 2016 is projected to increase by 2%, to 18.9 Mt, thanks to new supply emerging in Saudi Arabia, Malaysia, Russia and Iran.

### ***Accelerating potential nitrogen surplus in 2016***

In 2016 the global nitrogen balance shows an accelerating potential surplus, due to substantial supply increases against modest demand growth.

### ***A massive 20 Mt of new urea capacity in 2015/16***

Close to 30 new units are planned to come on stream in 2015 and 2016, with two-thirds located outside China. Global urea capacity would increase by 5% in 2015, to 218 Mt, and by 4% in 2016, to 227 Mt. China's capacity growth is seen as decelerating. The main additions to capacity outside China will occur in Algeria, Indonesia, Iran, Nigeria, Russia and the United States.

Global urea supply is estimated at 179 Mt in 2015 and 187 Mt in 2016.

### ***Firming growth in demand for agriculture and industrial uses, but an increasing supply/demand imbalance into 2016***

Global urea demand in 2016 would grow by 3%, to 173 Mt, driven by firming urea use in both fertilizer and industrial applications.

The global urea supply/demand balance in 2015 maintained a substantial potential surplus on account of large capacity increments. The supply/demand balance in 2016 would show a growing supply-driven imbalance, expanding by nearly 40% to 14 Mt (8% of potential supply). Large exportable supply will emerge in Africa and will keep expanding in West Asia and Eastern Europe and Central Asia (EECA). Higher demand and imports are seen in South Asia, Latin America and Europe. A significant 25% decrease is projected in the United States, leading to a significant reduction of urea import demand into 2016.

## **Phosphate Outlook**

### ***A large supply of phosphate rock emerging in Africa, East Asia and West Asia***

Global phosphate rock supply in 2016 is projected to expand by 6% over 2014, to 232 Mt. Large expansions are projected in only three countries: Morocco, Jordan and China. These increases are partially offset by reductions in the United States and by the situation in Syria. The bulk of the incremental supply would be mostly dedicated to captive downstream processing.

### ***Growing phosphoric acid capacity in Morocco in 2015 and 2016***

Global phosphoric acid capacity is projected at 56.4 Mt  $P_2O_5$  in 2015 and 58 Mt  $P_2O_5$  in 2016. No new merchant grade phosphoric acid (MGA) supply will emerge in the short term. Global phosphoric acid capacity remained virtually unchanged in 2015, but would grow by 3% to 58 Mt  $P_2O_5$ . This 2 Mt increase would mostly occur in Morocco. No new MGA supply is projected in the short term.

### ***Moderate demand growth and new supply, leading to a gradual rise in potential surplus***

The global supply/demand balance for phosphoric acid showed a small increase in potential surplus in 2015. However, the imbalance is projected to expand further in 2016 despite growing phosphate demand.

Rising exportable supply will mostly emerge in Morocco and West Asia. China will remain in a large surplus position for the next few years. Regional deficits are projected to be stable in Europe and Oceania, and slightly lower in South East Asia. Regional deficits would expand in Latin America and South Asia, signalling sustained import demand for 2016.

#### ***Large expansion of export-oriented capacity in Morocco in 2015/16***

Very few capacity projects are slated for completion in 2015, with little development outside China and Morocco. Global processed phosphates capacity would grow by 3% over 2015, to 97 Mt products in 2016. DAP would account for 95% of the capacity increment between 2014 and 2016. Morocco would contribute 66% of the total increase in capacity in 2015/16, and China would be responsible for 17%.

### **Potash Outlook**

#### ***Global capacity lower in 2015, but rising fast in 2016***

For the first time in more than a decade world potash capacity registered a decrease in 2015, dropping to 51.4 Mt  $K_2O$ , due to the removal of capacity in Russia, the United States and Laos. Global potash capacity in 2016 is projected to expand by +8% over 2015, to 55.5 Mt  $K_2O$  (94 Mt products). Canada would contribute 87% (3.6 Mt  $K_2O$ ) of the capacity increment. In product terms, global potassium capacity in 2016 is estimated at 94 Mt products.

#### ***North America and EECA account for 78% of world incremental supply over 2014***

Global potash supply is projected at 43.5 Mt  $K_2O$  in 2015, growing to 44.6 Mt  $K_2O$  by year-end 2016. In terms of MOP equivalent, global potash supply would reach 74.3 Mt in late 2016. Regional supply would increase in North America and EECA.

#### ***Global potash demand recovering in 2016***

Following a 4% decrease in 2015, global potash demand is projected to grow by 4% in 2016, to 39.6 Mt  $K_2O$  (65-66 Mt MOP equivalent).

#### ***Growing supply/demand imbalance as a result of large capacity expansions in 2015/16***

The derived potash balance shows growing potential surpluses in 2015, with a potential decline to 5.0 Mt  $K_2O$  in late 2016. This results from a gradual ramp-up of new capacity in Canada and Russia and firming demand.

Potential surpluses in EECA and West Asia would remain stable, but would decline in Europe. Only North America would see rising exportable 'potential' supply. Regional deficits are forecast to expand in all regions, with notable increases in East Asia and Latin America.

### **Sulphur Outlook**

#### ***Nearly balanced sulphur market in 2015***

Global production of elemental sulphur in 2015 was close to 58.9 Mt S, increasing by 6%. Domestic supply continues to expand in some of the world's largest sulphur consuming countries.

Global consumption of elemental sulphur was estimated at 59 Mt S, growing by 3.5% over 2014. This increase is driven by sustained demand in sulphur-based fertilizer production and industrial uses, against a decline in ore leaching uses.

The global sulphur market in 2015 was nearly balanced between production and demand. Considerable production tonnage still remains located in remote locations.

#### ***Firming sulphur demand, but faster growth in supply seen in 2016***

In 2016 world elemental sulphur production is forecast to grow by 7%, to 64 Mt S. Global consumption of elemental sulphur is projected to expand by 3%, to 61 Mt, thanks to firming demand in fertilizer and industrial segments and rising sulphur nutrient demand.

#### ***Supply/demand deficit shifting to moderate potential surplus in 2016***

The resilient but diminishing production deficits of the past decade would shift from chronic deficits to potential surpluses of elemental sulphur, which may exceed 2.5 Mt in 2016.

Sulphur exportable supply from new production is seen as expanding by 3 Mt S, with incremental tonnage from Abu Dhabi, Saudi Arabia, Turkmenistan and Qatar. Planned capacity expansions and the ramp-up of production at new phosphoric acid plants in 2016 will add incremental sulphur import demand into Morocco, Tunisia and Jordan.