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Fertilizer Outlook 2016-2020

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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 2015/16 to 2020/21. The third part provides projections of fertilizer supply for the period 2016 to 2020.

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

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ECONOMIC AND POLICY CONTEXT

Disappointing world economic growth in 2016 and uncertain medium-term prospects

World gross domestic product (GDP) growth remained low in 2015 and is not expected to rebound in 2016. Activity in advanced economies softened towards the end of 2015, and stresses in several large emerging market economies show signs of continuing.

Growth is projected to slowly reach around 4% by the end of the decade, with rates close to 2% for advanced economies and around 5% for emerging and developing economies. China's rate of growth would stabilize at around 6%, while India's would be almost 8%. Southeast Asia and Sub-Saharan Africa are projected to see rates above 5%.

Following a small rebound in mid-2015, oil prices continued to drop until January 2016, when they reached their lowest level since February 2004. Since then they have risen. Lower oil prices created conditions that allowed many central banks to put very accommodative financial policies in place and to lower interest rates. A serious risk of deflation has been considered to exist in a number of markets.

Following a sharp appreciation of the United States (US) dollar with respect to most currencies of developed and developing countries (with the notable exception of the Chinese yuan), exchange rates in the last 12 months tend to show the beginning of recovery for most currencies although they remain low. The Russian, Ukrainian, Brazilian and Argentinian currencies are the most impacted.

Policy developments greatly influence the outlook

Important policy developments recently occurred in China, India, the European Union (EU), Argentina and Sub-Saharan Africa.

In China, the 'zero-growth' policy adopted in 2015 caps fertilizer demand expansion at 1% per year between 2015 and 2020. This policy reinforces the slow growth trend observed for nitrogen (N) and phosphorous (P) fertilizer use since the beginning of the decade. In addition, the Chinese government has applied a 13% value added tax (VAT) on fertilizer sales from September 2015. The impact this measure will have on domestic demand is unclear.

Recently, China decided to end its maize stockpiling policy. It is anticipated that this will result in a smaller and less intensively cultivated maize area, to the benefit of soybeans.

In India, there has been no major evolution of the fertilizer subsidy regime in the past 12 months. The Maximum Retail Price for urea has remained stable, while the Nutrient Based Subsidy rates have been revised down for N and P, up for sulphur (S), and remain unchanged for potassium (K). With the objective of replacing the current fertilizer subsidy regime, which is channeled through the industry, India is testing Direct Benefit Transfer to farmers on a pilot scale.

The EU recently adopted its 'circular economy' strategy, a package anticipated to contribute to 'closing the loop' in product lifecycles through greater recycling and re-use. The strategy will apply to fertilizers, with incentives for greater recycling and re-use of various organic nutrient sources.

Argentinian farmers are expected to greatly benefit from the new grain export policy adopted following the presidential elections at the end of 2015. This policy removes or reduces export quotas and tariffs for cereals and soybeans.

A number of oil- and mineral-exporting Sub-Saharan African countries are hit by low commodity prices, which affects their ability to finance fertilizer subsidy regimes.

WORLD AGRICULTURE

Global cereal stocks will remain comfortable in 2016/17

Low prices and unfavorable weather impacted the 2015/16 cereal harvest, which is estimated to be slightly down from the 2014/15 record crop. The decline was driven primarily by coarse grains, while a smaller drop in rice production offset a small increase in wheat output. As global demand for cereals was roughly flat that season, global ending stocks remained high. International wheat and maize prices have continued to weaken under this pressure. However, rice prices have regained some ground since early 2016 due to the impact of El Niño on the 2015/16 crop.

Early prospects for 2016/17 are still mixed, but there are indications that global cereal production will be stable or slightly higher. Despite low prices, the coarse grains output is expected to rise due to favorable weather or higher relative returns compared to competing crops.

Rice production should rebound after El Niño ends in mid-2016. In contrast, the wheat harvest is forecast to be down from a record 2015/16 crop owing to reductions in both area and yield. Global use of cereals is expected to increase slightly in 2016/17, driven primarily by coarse grains and explained by stronger feed demand. Early expectations regarding global cereal stocks vary widely, but they all indicate still comfortable levels at the end of the season. Global stock-to-use ratios should therefore remain relatively high for the main cereals, preventing prices from improving significantly in 2016/17.

Cotton prices are expected to remain low as production rises and China plans to sell a portion of its important government reserve. Dairy prices are also pressured by ample supplies and meat prices have stabilized at low levels. In contrast, international oilseed and sugar prices regained some ground in early 2016 and are expected to strengthen in 2016/17, supported by a contraction in stocks.

Slower growth of agricultural production in the medium term

Expectations of a slowdown in population and economic growth during the next few years result in a smaller projected increase in global use of agricultural commodities compared to the past decade. Feed use will drive up demand for cereals and oilseeds, as the appetite for meat and dairy keeps growing in developing countries.

Growth in industrial uses, the main driver of cereal utilization in the past decade, is expected to remain modest.

Agricultural production should rise at a slower rate in the coming years, driven mostly by improved yields. Incentives to expand area will be limited except in South America. Production of maize and soybeans is projected to increase faster than that of wheat and rice, to meet the growing needs of the livestock sector.

Global inventories and stock-to-use ratios of most agricultural commodities are expected to contract during the next few years, supporting gradual increases in prices. Nevertheless, stocks should remain adequate and prices are not expected to return to the peaks of recent years.

FERTILIZER DEMAND

Following a drop in 2015/16, world fertilizer demand is anticipated to recover in 2016/17

In response to the economic slowdown in many emerging and developing countries, persistent low international prices for most agricultural commodities, and dry conditions across South Asia, Southeast Asia, Latin America and Africa, world fertilizer demand is expected to contract by 1.0% in 2015/16, to 181 million tonnes (Mt) nutrients. Drops are seen of similar magnitude for the three nutrients: -1.0% for N, to 108 Mt; -1.0% for P, to 41 Mt; and -0.8% for K, to 32 Mt. Aggregate demand in 2015/16 is anticipated to rebound in the three regions where it contracted in 2014/15: Eastern Europe & Central Asia (EECA), West Asia and North America. Demand is seen as dropping elsewhere. The sharpest decline is expected in Latin America, reflecting unfavorable economic, political and weather conditions in Brazil and Argentina. African demand was hit by widespread El Niño impacts and cuts to fertilizer subsidy budgets in several countries. The poor monsoon in South Asia strongly impacted the 2015/16 winter season. More modest drops are anticipated elsewhere.

The outlook for 2016/17 is more optimistic in view of slightly improving market conditions, the expected more favorable weather, and a better political and economic situation in some sizable markets. Global fertilizer demand in 2016/17 is seen as rebounding (+2.9%) to 186 Mt, with growth rates of relatively similar magnitude for all three nutrients: +3.0% for N, to 111 Mt; +3.0% for P, to 42 Mt; and +2.3% for K, to 33 Mt. Fertilizer demand would remain almost unchanged in North America and would increase elsewhere. Demand growth in EECA is seen as firm, as grain exports are expected to benefit from the current weakness of regional currencies. Thanks to prospects for normal monsoon rains, demand in South Asia would fully recover from the downturn in 2015/16. Driven by recent political change in Argentina, demand would firmly rebound in Latin America but would not fully recover owing to persistent recession in Brazil. Expected increases in the rest of the world would be smaller.

Global fertilizer demand forecast to remain slightly below 200 Mt by 2020/21

Medium-term agricultural projections point to slightly tightening market conditions, assuming average weather patterns.

In the absence of major economic or policy changes in the main fertilizer-consuming markets, the current context supports moderate fertilizer demand growth prospects in the years to come. According to the baseline scenario, world demand would rise on average by 1.6% per annum (p.a.) between the base year (average of 2013/14 to 2015/16) and 2020/21. Aggregate global demand is projected to reach 199 Mt at the end of the outlook period. K demand would expand firmly (2.3% p.a. to 37 Mt); P demand would grow more moderately (1.7% p.a. to 45 Mt); and N demand growth would continue to progressively decline (1.2% p.a. to 117 Mt). This rebalancing of the N:P:K ratio reflects progressive adoption of better fertilizer management practices by farmers.

The highest growth rate would be in Africa (3.6% p.a.). Demand would also expand firmly in Latin America (2.9% p.a.), South Asia (2.9% p.a.) and EECA (2.8% p.a.). Latin America would benefit from the competitive advantage of Brazil and Argentina on the global soybean, maize and sugar markets. Similarly, EECA has the potential to increase its share of global cereal trade. South Asian demand is strongly influenced by fertilizer subsidy regimes, whose evolution is highly unpredictable; high uncertainty is therefore associated with forecasts for this region. In East Asia, fertilizer demand growth is forecast to slow further (0.9% p.a.), as Chinese N and P demand is likely to reach a plateau by the end of the outlook period. Demand in developed countries is anticipated to rise marginally, with stronger prospects in Oceania. With N and P demand in China levelling off, about half the world market can be considered 'mature'. In volume terms, South Asia, East Asia and Latin America would account for 33%, 22% and 22%, respectively, of the global increase in total fertilizer demand anticipated in the next five years.

FERTILIZER SUPPLY

2015 was characterized by near-stagnant fertilizer demand. Production capacity and supply availability have both been increasing. Entering 2016, the fertilizer industry continues to face over-capacity conditions and market pressures caused by bearish fertilizer demand and intensified supply competition.

Rationalization and consolidation activities have begun in key producing countries. Several producers recently embarked on cost reduction and operational efficiency programmes.

Large integrated producing groups are proceeding to a re-segmentation of activities in order to further engage in the high added-value specialty fertilizer segment.

Strong divergence in the ammonia feedstock used in China and the rest of the world

During the next five years 97% of the planned ammonia capacity increase will be based on natural gas; however, despite massive capacity rationalization in China the share of coal in that country continues to expand and is to reach 82% of ammonia potential production by 2020 compared with 78% in 2015.

Market conditions in 2015 were relatively positive in terms of supply volumes, in strong contrast to demand estimates

On average, the fertilizer industry operated at 80% of installed nutrient capacity in 2015. Global nutrient demand was adequately supplied from existing production capacity and from newly commissioned operations.

However, chronic shortages of natural gas supply have continued to constrain the supply of nitrogen fertilizers from a few large exporting countries.

Total nutrient sales in 2015 were estimated at 245 Mt *nutrients*. Fertilizer sales, which accounted for 76% of total sales, were estimated at 186 Mt *nutrients*, remaining static compared with 2014.

In 2020 world total nutrient **sales** would reach 270 Mt *nutrients*, for an average annual growth rate of about 2%.

The fertilizer industry's significant contribution to the global economy: adding value and creating jobs

Preliminary estimates of sectoral macro-indicators indicate that the fertilizer industry provided about 1 million direct jobs in 2014. Between 2016 and 2020 capacity investments in the industry would create more than 50,000 direct and at least 150,000 indirect jobs.

The fertilizer industry generated up to US\$170-200 billion in sales revenues in 2015.

Significant capacity expansions in 2016-2020

Between 2016 and 2020 the fertilizer industry will invest close to US\$130 billion in more than 150 new production units, increasing global capacity by over 150 million tonnes products.

Nitrogen Outlook

Large ammonia capacity reductions in China, while capacity is expanding in North America, West Asia and EECA

For the first time in a decade, due to the removal of close to 15 Mt of ammonia capacity in China in 2015-2016, capacity in East Asia will show virtually no net growth.

Global ammonia capacity would reach 230 Mt NH₃ in 2020, expanding by 10% compared with 2015. Large increases in capacity are expected in Africa, North America and EECA.

Future nitrogen demand will present opportunities for exports to Latin America and South Asia

Regional deficits are expected to further expand in South Asia, Latin America and Oceania, suggesting growing import demand for nitrogen products in all forms. Regional surpluses are seen as expanding in Africa, EECA and, to a lesser extent, West Asia.

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

Global supply and demand balances point to accelerating surpluses in 2017-2018, reaching a peak in 2018.

New urea capacity emerging in Africa, North America, and EECA, but decreasing in China

Urea represents half of total nitrogen output and will contribute two-thirds of the projected ammonia capacity increment.

Global urea capacity is projected to increase by +10%, to 229 Mt in 2020. On a regional basis, Africa, North America and EECA will account for 70% of overall capacity growth.

Global urea supply is estimated at 208 Mt in 2020, growing at 2.5% p.a. over 2015.

Sustained 2% annual growth of urea demand thanks to rising consumption in Latin America and South Asia

Global demand for urea for all uses is forecast to increase by 2% p.a. compared with 2015, to 192 Mt in 2020. Latin America and South Asia would each contribute close to half the global incremental demand.

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

Large potential surpluses are expected to persist during the next five years, reaching 8% of potential supply availability.

Phosphate Outlook

Large supply of phosphate rock emerging; no shortage in the near term

Global phosphate rock supply would grow 11% compared with 2015, to reach 250 Mt of phosphate concentrate in 2020. Together Africa, Saudi Arabia and China would account for three-fifths of this 25 Mt increase.

Growing phosphoric acid capacity in three exporting countries

Global phosphoric acid capacity in 2020 is projected to expand by 13% over 2015, to 65.3 Mt P₂O₅ in 2020. Large capacity additions would occur in Morocco, China and Saudi Arabia.

Stable potential surplus with respect to phosphoric acid-based fertilizers in the near term

The global supply of phosphoric acid would increase by 2.4% p.a. compared with 2015, while demand would grow at 2.5%, pointing to a stable potential surplus between 2015 and 2017 followed by a moderate increase towards 2020.

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

Global capacity for the main processed phosphate fertilizers would grow by 7 Mt P₂O₅ between 2015 and 2020, to 52 Mt P₂O₅. Three exporting countries (Morocco, Saudi Arabia and China) would account for the bulk of the increase.

Potash Outlook

Large brownfield projects and six new mines to come on stream between 2016 and 2020

Global potassium capacity is forecast to grow by an overall 22% compared with 2015, to 64.5 Mt K₂O in 2020, thanks to capacity projects in Canada, Russia, Turkmenistan, Belarus and, possibly, Ethiopia.

North America and EECA to account for 70% of world incremental potash supply between 2015 and 2020

Global potassium supply would increase to 51.6 Mt K₂O in 2020, representing a net increment of 17% compared with 2015.

North America would account for 34% of global supply, followed by EECA (33%), East Asia (15%) and other regions (18%).

Moderate potash demand growth over five years

Global demand for potassium for all uses would reach 43 Mt K₂O in 2020, growing 2.1% p.a. compared with 2015.

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

Between 2015 and 2020 global potash supply would grow by 17% and demand by 11%.

The global potash supply/demand balance shows a lower potential surplus in 2016, followed by a gradual increase in 2017.

Sulphur Outlook

New supply of exportable sulphur in West Asia and EECA

Global sulphur production is projected to grow by 4% p.a. compared with 2015, reaching 72 Mt S in 2020. The largest increases in production will occur in the sulphur exporting regions of West Asia and EECA during the next five years, each at 6% p.a.

Moderate growth of global sulphur demand in the near term, but the current balance is shifting to potential surpluses

Global consumption of elemental sulphur is projected to grow at an annual rate of 3% compared with 2015, reaching 69 Mt S in 2020.

The global supply/demand situation will shift from a near equilibrium condition in 2015 to the emergence of growing surplus towards 2020.