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# Fertilizer Outlook 2013-2017

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This public summary report was prepared by Patrick Heffer, Director of the IFA Agriculture Committee, and Michel Prud'homme, 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 2012/13 to 2017/18. The third part provides projections of fertilizer supply for the period 2013 to 2017.

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 81<sup>st</sup> IFA Annual Conference held in Chicago, USA in May 2013: the IFA report *Medium-Term Outlook for World Agriculture and Fertilizer Demand: 2012/13-2017/18 (A/13/77)*, and the IFA report *Fertilizers and Raw Materials Global Supply: 2013-2017 (A/13/71b)*. These two comprehensive reports are strictly reserved for IFA members.

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## **PART 1 – GLOBAL ECONOMIC CONTEXT AND AGRICULTURAL SITUATION**

### **1.1. Economic Context**

#### ***World economic activity is expected to gain momentum from the second half of 2013***

After a setback in the second half of 2011, world economic growth remained weak in 2012. Global GDP expanded by only 3.2% in 2012, down 0.8 percentage point from the previous year. According to the International Monetary Fund (IMF), economic activity in advanced economies is expected to accelerate gradually from the second half of 2013, following a depressed first half of the year. Prospects are also improving in emerging and developing economies. As a result, world output is forecast to rise by 3.3% in 2013 and 4.0% in 2014. In the medium term, world output is projected to expand on average by 4% annually. This economic outlook is subject to a number of uncertainties, especially in relation to geopolitical tensions in oil exporting countries and possible related supply shocks, austerity fatigue and rising unemployment in the euro area, and public debt and fiscal adjustment in the United States. The main risks to the outlook are oriented to the downside.

### **1.2. Agricultural Situation**

#### ***The 2012 harvest was characterized by major shortfalls in the Corn Belt and the Black Sea area***

The 2012 cereal harvest was hit by exceptional droughts in two of the world's main grain-producing areas: the US Corn Belt and the Black Sea area.

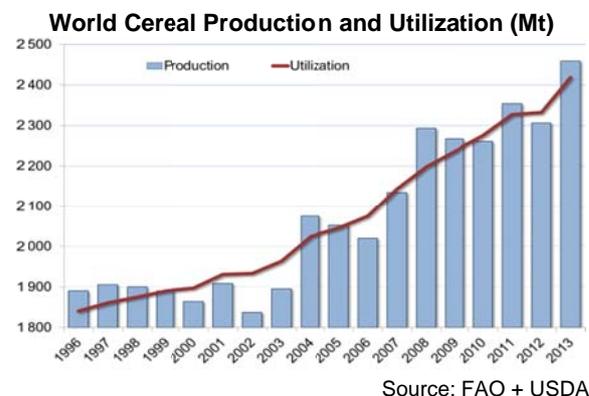
- US agriculture was affected by the worst drought since 1956. In August, about 30% of the country, including most of the Corn Belt, suffered 'extreme' or 'exceptional' drought conditions. As a consequence, 10% of the area planted to maize was abandoned. Average maize yield at the national level fell drastically, to 7.7 t/ha, the lowest level since 1995 and 20% below the average for the previous five years. Despite bullish prospects at the beginning of the campaign, the maize harvest finished 13% down over the previous year to a low 274 million metric tonnes (Mt). Because this was the third consecutive year with yields below the long-term trend, US maize stocks are seen as shrinking to 19 Mt at the end of the 2012/13 campaign, while the US stock-to-disappearance ratio for maize would fall to only 6.8%.

- Widespread dryness impacted the major producing countries of the Commonwealth of Independent States (CIS). The 2012 wheat harvest is reported to have been down by 33% in Russia, 29% in Ukraine and 57% in Kazakhstan. Coarse grain production has been less affected, with a 13% drop in both Russia and Ukraine. In view of short export availabilities, Russia halved its wheat shipments in 2012/13. In total, the CIS is forecast to export 46 Mt of cereals in 2012/13 vs. 64 Mt during the previous marketing campaign.

Owing to low grain inventories before these two events, and the essential role played by these two regions in international trade of wheat, maize and barley, the prices of wheat and coarse grains surged in the third quarter of 2012. Soybean prices followed the same trend, as oilseeds compete with cereals for land.

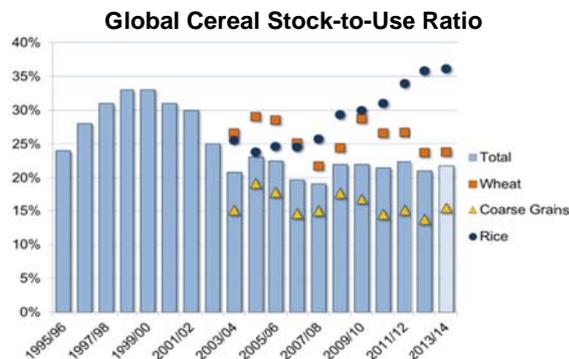
#### ***In response to attractive prices, farmers are anticipated to harvest a record crop in 2013***

International grain and oilseed prices have been progressively easing since their high in the third quarter of 2012, but they remain attractive compared to historical trends. In response, farmers are expected to plant a larger grain area and to boost yields. Preliminary forecasts by the Food and Agriculture Organization of the United Nations (FAO) for the 2013 harvest point to a record cereal crop following a 7% rebound, to 2.46 billion metric tonnes (Bt). Increases are expected in all cereal categories. Harvests of rice and coarse grains are seen as up by 2 and 9%, respectively, reaching new records. After a sharp recovery (+5%), the global wheat output would be the second largest ever. Oilseed production would also reach a new high, at 491 Mt, following a 5% year-on-year increase. Soybean would account for three-fourths of the increase.



Due to strong grain prices and stagnating grain-based biofuel production, world cereal consumption evolved marginally in 2012/13.

Since world cereal utilization outstripped production, the campaign ended with a deficit. In 2011/12 the stock-to-use ratio for coarse grains contracted to its lowest level since the earliest records in 1980. The wheat ratio declined for the third consecutive year, dropping to its lowest level since 2007/08. In contrast, the ratio for rice remained high after a decade of steady growth.



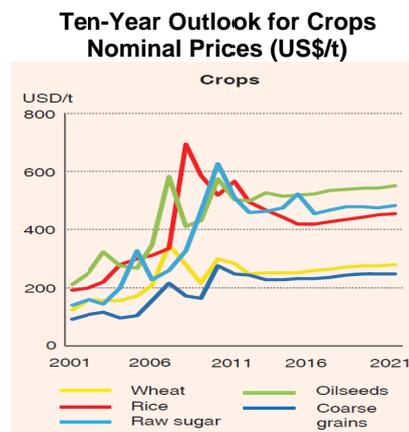
Source: FAO (+ USDA for trend in 2013/14)

Early forecasts by the United States Department of Agriculture (USDA) point to a 5% rebound of world cereal consumption in 2013/14. This would be the largest yearly increase in consumption in the past two decades. With a 7% rise in demand, coarse grains would account for three-fourths of the aggregate increase. Wheat uses would partly recover (+3%) while rice consumption would rise steadily (+1.5%). Feed uses would be the main driver of rebounding consumption. The balance at the end of the 2013/14 campaign is expected to be positive for all cereal categories, with a sizable surplus for coarse grains and smaller ones for wheat and rice. In view of the anticipated rebound in world closing stocks, cereal prices should be under downward pressure in the months to come, but they are likely to remain very volatile due to exceptionally low inventory levels. Oilseed, sugar and cotton inventories are also forecast to expand in 2013/14.

**Tight agricultural market conditions are seen as persisting in the medium term**

According to the Organisation for Economic Co-operation and Development (OECD) and FAO, world cereal production is projected to reach 2.53 Bt by 2017/18. Most of the growth would come from productivity gains. Higher growth rates are anticipated for maize compared to the other cereals. Projections indicate sizable growth in trade volumes, as rising world demand would increasingly be met by output expansion in South America for maize and in the Black Sea area for wheat and barley. The increase in global cereal consumption in the next five years is expected to be driven by a strong rebound of feed uses, especially in emerging and developing economies.

Industrial uses are seen as having a much smaller impact on world cereal consumption compared to the past decade. Overall there is limited scope for stock rebuilding given projected demand growth, unless harvests outperform expectations. As a result of persistent tight market conditions, cereal prices would remain attractive, well above their pre-crisis (2007-08) levels. Oilseed prices are seen as following a similar trend.



Source: OECD-FAO

**PART 2 – GLOBAL FERTILIZER DEMAND**

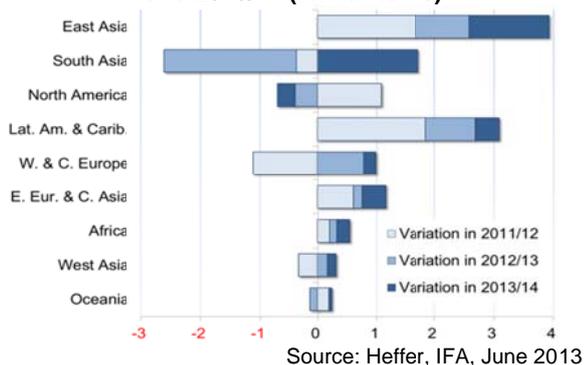
**Stagnation of world fertilizer consumption in 2012/13, reflecting falling demand in India**

Following a 2.2% increase in 2011/12, world fertilizer demand in 2012/13 is seen as stagnating at 176.3 Mt despite strong agricultural market fundamentals. Nitrogen (N) fertilizer demand would evolve marginally (-0.2%), to 107.5 Mt; phosphorus (P) fertilizer demand would contract by an estimated 0.7%, to 40.3 Mt; and potassium (K) fertilizer demand is forecast to expand by 2.7%, to 28.5 Mt. Aggregate demand in 2012/13 is forecast to contract by almost 7% in South Asia as a result of unfavourable weather and downward revision of the subsidy rates for P and K fertilizers in India. More modest retreats are seen in Oceania and North America. Increases in the rest of the world would offset these drops.

The outlook for 2013/14 is more positive, assuming a progressive rebound of P and K demand in India. Agricultural commodity prices are anticipated to be under downward pressure, but they would remain attractive and stimulate fertilizer applications. Global fertilizer demand in 2013/14 is forecast to rise by 2.4%, to 180.5 Mt. Increases are anticipated for all three major nutrients: +2.3%, to 110.1 Mt for N; +2.2%, to 41.2 Mt for P; and +2.7%, to 29.3 Mt for K.

Fertilizer demand would increase in all the regions but North America, where anticipated declining crop prices and the residual effect of nutrient applications in 2012 would lead to a 1% decline in consumption from a high base. Demand would rebound in South Asia (+5%), assuming that Indian farmers improve their fertilization practices despite an unfavourable fertilizer subsidy regime. Demand would grow in all the other regions. The largest year-on-year increases in volume terms are anticipated in South Asia and East Asia.

#### Historical and Anticipated Annual Variations in Regional Fertilizer Demand between 2010/11 and 2013/14 (Mt nutrients)



**Eastern Europe and Latin America are the regions with the highest growth rates, but East Asia and South Asia remain the heavyweights**

The medium-term outlook for agriculture remains favourable, with firm agricultural commodity prices well above historical trends. High volatility is, however, expected to continue in view of the low global inventories of all cereals and oilseeds. Positive market fundamentals are expected to stimulate fertilizer demand, with possible significant yearly variations. Under the baseline scenario, world demand would rise on average by 1.8% per annum (p.a.) between the base year (average of the 2010/11 to 2012/13 campaigns) and 2017/18 to reach 194.9 Mt. Demand for K fertilizers would expand faster (+3.0% p.a.) than that for N and P fertilizers (+1.5 and 1.9% p.a., respectively).

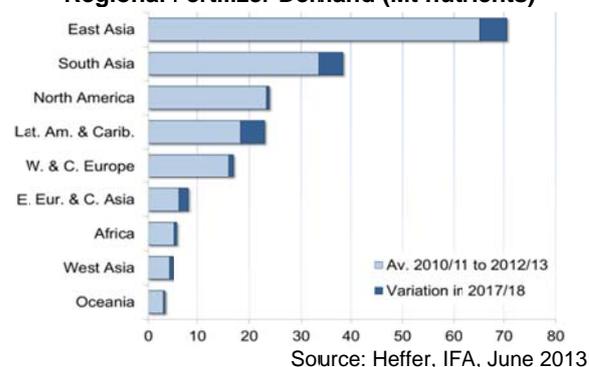
#### World Fertilizer Demand (Mt nutrients)

|                               | N            | P <sub>2</sub> O <sub>5</sub> | K <sub>2</sub> O | Total        |
|-------------------------------|--------------|-------------------------------|------------------|--------------|
| 09/10                         | 102.2        | 37.6                          | 23.7             | 163.5        |
| 10/11                         | 104.1        | 40.6                          | 27.5             | 172.3        |
| 11/12                         | 107.8        | 40.6                          | 27.7             | 176.1        |
| <b>Change</b>                 | <b>+3.5%</b> | <b>-0.1%</b>                  | <b>+0.9%</b>     | <b>+2.2%</b> |
| 12/13 (e)                     | 107.5        | 40.3                          | 28.5             | 176.3        |
| <b>Change</b>                 | <b>-0.2%</b> | <b>-0.7%</b>                  | <b>+2.7%</b>     | <b>+0.1%</b> |
| 13/14 (f)                     | 110.1        | 41.2                          | 29.3             | 180.5        |
| <b>Change</b>                 | <b>+2.3%</b> | <b>+2.2%</b>                  | <b>+2.7%</b>     | <b>+2.4%</b> |
| 17/18 (f)                     | 116.2        | 45.3                          | 33.4             | 194.9        |
| <b>Average Annual Change*</b> | <b>+1.5%</b> | <b>+1.9%</b>                  | <b>+3.0%</b>     | <b>+1.8%</b> |

(e) estimated; (f) forecast  
\*Compared to the average of 2010/11 to 2012/13  
Source: Heffer, IFA, June 2013

The highest growth rates are found in regions with low average application rates or where cultivated land area is expanding steadily, namely Eastern Europe and Central Asia (+4.2% p.a.), Latin America (+3.8% p.a.) and Africa (+3.1% p.a.). Demand growth continues to decelerate in East Asia (+1.3% p.a.) as China's N and P fertilizer demand plateaus. Demand expansion is also showing signs of deceleration in South Asia (+2.4% p.a.), but the regional outlook could be strongly influenced by the evolution of the Nutrient Based Subsidy in India. Demand expansion in the rest of the world is seen as more modest. In volume terms, East Asia, South Asia and Latin America would account for 26, 25 and 23%, respectively, of the global increase in fertilizer demand.

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



**The forecast is still subject to major uncertainties**

IFA's baseline forecast is subject to a number of uncertainties. The main uncertainties that could influence the forecast are 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 Renewable Fuel Standard in the US, and the evolution of the Nutrient Based Subsidy in India.

### PART 3 – GLOBAL FERTILIZER SUPPLY

Global nutrient sales were static in 2012 as a result of a modest increase in fertilizer consumption. There was lower fertilizer application in most countries due to economic uncertainties in key regions, unfavourable weather conditions, and variations in exchange rates. Global total nutrient production in 2012 was estimated at 241 Mt *nutrients*, representing a net increase of 2.8 Mt *nutrients* or +1.2% over 2011, due to soft demand in the fertilizer and industrial sectors.

On average, the fertilizer industry operated at 80% of installed capacity and close to 93% of effective capacity. Combined ammonia, phosphoric acid and potash capacity rose 4% to 266 Mt *nutrients*, compared with 256 Mt in 2011.

### **Moderate growth in global fertilizer demand towards 2017**

According to the June 2013 forecast of the *IFA Agriculture Committee*, global fertilizer consumption on a **calendar year** basis is projected to grow at an annual rate of 1.8%, to reach 194 Mt *nutrients* in 2017. Increases in demand are projected for all three major nutrients, showing average annual growth rates of 1.5% for N, 1.8% for P, and 3.0% for K.

| <b>World Fertilizer Consumption<br/>Calendar Year Basis</b> |              |                |                |
|---|--------------|----------------|----------------|
| <i>Mt nutrients</i>   | <b>2012</b>  | <b>2013(e)</b> | <b>2017(f)</b> |
| Nitrogen N  | 107.8        | 109.4          | 115.8          |
| Phosphorus P <sub>2</sub> O <sub>5</sub>                    | 41.3         | 40.7           | 45.0           |
| Potassium K <sub>2</sub> O                                  | 28.9         | 29.0           | 33.2           |
| <b>Total</b>  | <b>178.0</b> | <b>179.1</b>   | <b>194.0</b>   |

Source: Heffer, IFA, June 2013

Total nutrient sales in the fertilizer and industrial sectors in 2017 are forecast at 255 Mt *nutrients*, increasing by 11% over 2012 and representing an average annual growth rate of 2.2%.

### **Much slower growth in capacity development than previously forecast**

About half the capacity that had been planned to be commissioned between 2012 and 2016 faces delays of 6 to 18 months. The main impact of these delays will be much slower growth in capacity development than was forecast in May 2012, with close to 15 Mt of the capacity projected to be developed by 2016/17 delayed.

### **Significant investments in new capacity since 2009 will lead to higher available potential supply in the near term**

Close to 220 expansion projects are expected to come on stream over the next five years, in addition to 20 projects related to phosphate rock mining; these developments represent a total investment of US\$150 billion.

Fertilizer supply will be affected by rising feedstock prices, and by challenges to access to natural gas and phosphate rock supply. In the future, the extraction of low grade ores will necessitate further beneficiation at additional costs.

## **3.1. Nitrogen Outlook**

### **Large ammonia capacity increases expected in China, Africa and West Asia**

According to IFA's 2013 global capacity survey, global ammonia capacity is projected to increase by 19%, from 204.1 Mt in 2012 to 242.7 Mt NH<sub>3</sub> in 2017.

Global seaborne ammonia availability in 2017 would remain at the same level as in 2012, at 19.7 Mt.

### **Improving nitrogen demand to absorb much of the new supply in the short term**

Global nitrogen potential supply in 2017 is projected at 170 Mt N and demand at 154 Mt N. Both global potential supply and projected demand point to relatively balanced conditions in the period from 2013 to 2015, as much of the incremental supply will be absorbed by improving demand during those years. After 2015, the acceleration of projected supply from new projects planned by the nitrogen industry would expand the potential annual surplus to above 8% of projected supply. Under a slow-growth supply scenario, the potential surplus would remain static between 2013 and 2016 and would account for 6% of potential supply in 2017.

| <b>World Nitrogen<br/>Potential Supply/Demand Balance<br/>(million metric tonnes N)</b> |              |              |              |              |              |
|---|--------------|--------------|--------------|--------------|--------------|
|   | <b>2013</b>  | <b>2014</b>  | <b>2015</b>  | <b>2016</b>  | <b>2017</b>  |
| Supply  |              |              |              |              |              |
| Capacity  | 173.5        | 177.3        | 184.3        | 188.7        | 199.5        |
| <b>Potential Supply*</b>  | <b>150.4</b> | <b>153.5</b> | <b>159.6</b> | <b>164.0</b> | <b>169.8</b> |
| Demand  |              |              |              |              |              |
| Fertilizer Demand   | 109.4        | 111.3        | 112.9        | 114.4        | 115.9        |
| Non-fertilizer Demand   | 29.7         | 31.0         | 32.7         | 34.3         | 35.7         |
| Distribution Losses   | 2.3          | 2.4          | 2.5          | 2.5          | 2.6          |
| <b>Total Demand</b>   | <b>141.5</b> | <b>144.7</b> | <b>148.1</b> | <b>151.3</b> | <b>154.2</b> |
| <b>Potential Balance</b>  | <b>8.9</b>   | <b>8.9</b>   | <b>11.5</b>  | <b>12.7</b>  | <b>15.7</b>  |
| <b>% of Supply</b>  | <b>6%</b>    | <b>6%</b>    | <b>7%</b>    | <b>8%</b>    | <b>9%</b>    |

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

Source: Prud'homme, IFA, June 2013

### **New urea capacity planned by large consumers and a few exporters**

Between 2013 and 2017, 55 new urea units are planned to come on stream worldwide, of which 20 would be located in China. World urea capacity would increase by a net 43 Mt, to 236 Mt in 2017. This corresponds to a compound annual growth rate of 4.4% over 2012.

### **Firm demand growth in industrial uses and moderate growth in agricultural ones**

Global demand for urea for all uses is forecast at 195 Mt in 2017, representing net growth of 31 Mt over 2012 or 3.8% p.a..

Significant increases in urea demand are seen in East Asia, South Asia, North America and Latin America. In East Asia, industrial uses would contribute two-thirds of the projected regional demand growth.

### **Short-term balanced markets, followed by a gradual increase in the potential surplus**

Over the next five years, supply and demand projections show a gradual increase in the potential surplus to 6% of potential supply. The potential surplus would accelerate upwardly after 2015, on the basis of large capacity increments in 2016 and 2017 from announced projects.

| <b>World Urea<br/>Potential Supply/Demand Balance<br/>(million metric tonnes urea)</b> |              |              |              |              |              |  |
|--|--------------|--------------|--------------|--------------|--------------|--|
|  | 2013         | 2014         | 2015         | 2016         | 2017         |  |
| Supply   |              |              |              |              |              |  |
| Capacity   | 198.4        | 207.0        | 214.6        | 221.3        | 236.3        |  |
| <b>Potential Supply*</b>   | <b>182.1</b> | <b>188.6</b> | <b>195.3</b> | <b>202.3</b> | <b>207.4</b> |  |
| Demand   |              |              |              |              |              |  |
| Fertilizer Demand  | 143.2        | 147.6        | 151.4        | 154.4        | 157.4        |  |
| Non-fertilizer Demand  | 28.6         | 30.5         | 33.6         | 36.1         | 37.7         |  |
| <b>Total Demand</b>  | <b>171.8</b> | <b>178.1</b> | <b>184.9</b> | <b>190.6</b> | <b>195.2</b> |  |
| <b>Potential Balance</b>   | <b>10.3</b>  | <b>10.6</b>  | <b>10.4</b>  | <b>11.7</b>  | <b>12.2</b>  |  |
| <b>% of Supply</b>   | <b>6%</b>    | <b>6%</b>    | <b>5%</b>    | <b>6%</b>    | <b>6%</b>    |  |

Source: Prud'homme, IFA, June 2013

A slow-growth supply scenario suggests moderate growth in the current imbalance between 2013 and 2016, followed by a declining trend towards 2017, with a potential surplus equating to 3% of potential supply compared to 6% under the baseline scenario.

## **3.2. Phosphate Outlook**

### **Large phosphate rock supply emerging in Africa, West Asia and East Asia**

Global phosphate rock potential supply would be close to 260 Mt in 2017. The bulk of the expansion in rock supply would come from Africa and China, with further additions in Saudi Arabia, Peru and Brazil.

### **Growing phosphoric acid capacity in China, Morocco and Brazil**

World phosphoric acid capacity is forecast to grow by 4% per annum, to 63.7 Mt  $P_2O_5$  in 2017. Global supply of phosphoric acid would be close to 51.8 Mt  $P_2O_5$  in 2017, representing an average growth rate of 3.2% p.a.

### **Moderate demand growth and new supply will lead to a moderate potential surplus in near term**

Global phosphoric acid demand for all uses is forecast to grow at an annual rate of 2% compared with 2012, to 46.5 Mt  $P_2O_5$  in 2017. Global phosphoric acid supply/demand projections show a stable potential balance in the short term, followed by a moderate increase in 2015 due to larger supply growth. If a few projects were to be delayed, a marginal potential surplus of less than 6% of supply would exist between 2013 and 2017.

| <b>World Phosphoric Acid<br/>Potential Supply/Demand Balance<br/>(million metric tonnes <math>P_2O_5</math>)</b> |             |             |             |             |             |  |
|--|-------------|-------------|-------------|-------------|-------------|--|
|  | 2013        | 2014        | 2015        | 2016        | 2017        |  |
| Supply   |             |             |             |             |             |  |
| Capacity   | 54.6        | 57.2        | 58.7        | 60.3        | 63.7        |  |
| <b>Potential Supply*</b>   | <b>45.5</b> | <b>46.9</b> | <b>48.5</b> | <b>50.2</b> | <b>52.0</b> |  |
| Demand   |             |             |             |             |             |  |
| Fertilizer Demand  | 36.1        | 37.1        | 38.1        | 39.0        | 39.8        |  |
| Non-fertilizer Use   | 5.2         | 5.4         | 5.5         | 5.7         | 5.8         |  |
| Distribution Losses  | 0.8         | 0.8         | 0.9         | 0.9         | 0.9         |  |
| <b>Total Demand</b>  | <b>42.1</b> | <b>43.3</b> | <b>44.5</b> | <b>45.5</b> | <b>46.5</b> |  |
| <b>Potential Balance</b>   | <b>3.5</b>  | <b>3.6</b>  | <b>4.0</b>  | <b>4.7</b>  | <b>5.5</b>  |  |
| <b>% of Supply</b>   | <b>8%</b>   | <b>8%</b>   | <b>8%</b>   | <b>9%</b>   | <b>10%</b>  |  |

Source: Prud'homme, IFA, June 2013

### **Large processed phosphates capacity expansions in Morocco, China and Saudi Arabia**

Global capacity of the main processed phosphate fertilizers would grow by 7.6 Mt  $P_2O_5$  between 2012 and 2017, to 48.3 Mt  $P_2O_5$ .

China, Morocco and Saudi Arabia would account for the bulk of the projected increase.

## **3.3. Potash Outlook**

### **Significant brownfield capacity additions in the near term**

About 30 expansion projects are planned by companies in order to start commercial production between 2013 and 2017.

Global potassium capacity is forecast to increase from 45.4 Mt K<sub>2</sub>O in 2012 to 59.5 Mt in 2017.

World potash potential supply would grow by 25% compared with 2012, to 50 Mt K<sub>2</sub>O in 2017. The largest increases would occur in North America and EECA.

#### **Firm potash demand to increase towards 2017**

Between 2012 and 2017, world potash demand for all uses is projected to grow at an annual rate of 3%, to 37.4 Mt K<sub>2</sub>O in 2017.

#### **Resilient potential potassium surplus due to rising supply and overcapacity**

Potential global potash supply/demand conditions over the next five years show a moderate expansion of the potential surplus between 2012 and 2016, equating to 23% of potential supply in 2016/17.

Under a slow-growth supply scenario, assuming six-month delays on all projects and no new greenfield operations, the five-year global supply and demand balances would show a relatively stable potential surplus of 9-10 Mt K<sub>2</sub>O, equating to 21% of projected supply.

#### **World Potash Potential Supply/Demand Balance** (million metric tonnes K<sub>2</sub>O)

|                          | 2013        | 2014        | 2015        | 2016        | 2017        |
|--------------------------|-------------|-------------|-------------|-------------|-------------|
| <b>Supply</b>            |             |             |             |             |             |
| Capacity                 | 49.7        | 50.4        | 54.5        | 56.6        | 59.6        |
| <b>Potential Supply*</b> | <b>41.7</b> | <b>42.6</b> | <b>45.8</b> | <b>47.2</b> | <b>49.7</b> |
| <b>Demand</b>            |             |             |             |             |             |
| Fertilizer Demand        | 29.0        | 29.9        | 31.2        | 32.3        | 33.2        |
| Non-fertilizer Demand    | 2.8         | 2.8         | 2.9         | 3.0         | 3.1         |
| Distribution Losses      | 0.9         | 1.0         | 1.0         | 1.0         | 1.1         |
| <b>Total Demand</b>      | <b>32.7</b> | <b>33.7</b> | <b>35.1</b> | <b>36.3</b> | <b>37.4</b> |
| <b>Potential Balance</b> | <b>9.0</b>  | <b>8.9</b>  | <b>10.7</b> | <b>10.8</b> | <b>12.3</b> |
| <b>% of Supply</b>       | <b>22%</b>  | <b>21%</b>  | <b>23%</b>  | <b>23%</b>  | <b>25%</b>  |

Source: Prud'homme, IFA, June 2013

### **3.4. Sulphur Outlook**

#### **Large expansions of sulphur recovery in West Asia and China**

World production of elemental sulphur would grow by 34% over 2012, to reach 72 Mt S in 2017. Significant increases in sulphur output are seen in a few exporting countries: Abu Dhabi, Saudi Arabia, and potentially Turkmenistan.

#### **Firm sulphur demand in industrial sectors and modest growth in the fertilizer sector**

Global consumption of elemental sulphur is projected to grow at an annual rate of 2.6% over 2012, to 64.2 Mt S in 2017.

#### **Supply/demand deficit shifting to potential surplus**

The world sulphur supply/demand balance shows a shift from a resilient deficit in 2012/13, as was seen in the past decade, to a rapidly increasing surplus.

Under a slow-growth supply scenario, the supply/demand situation would move to a relative balance in 2014. A marginal potential surplus would emerge in 2015, equating to 3% of available supply, followed by a rapidly growing surplus thereafter.

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

|                            | 2013        | 2014        | 2015        | 2016        | 2017        |
|----------------------------|-------------|-------------|-------------|-------------|-------------|
| <b>Sulphur Demand</b>      |             |             |             |             |             |
| Sulphur for sulphuric acid | 49.4        | 50.9        | 52.1        | 53.8        | 55.9        |
| Non-sulphuric acid uses    | 7.9         | 8.0         | 8.1         | 8.2         | 8.3         |
| <b>Total Demand</b>        | <b>57.3</b> | <b>58.9</b> | <b>60.3</b> | <b>62.0</b> | <b>64.2</b> |
| <b>Sulphur Supply</b>      |             |             |             |             |             |
| Oil recovered              | 26.3        | 27.6        | 28.7        | 29.6        | 30.3        |
| Gas recovered              | 28.2        | 30.8        | 33.1        | 35.3        | 36.9        |
| Others, including Frasch   | 3.7         | 3.8         | 3.9         | 4.2         | 4.8         |
| <b>Total Supply</b>        | <b>58.1</b> | <b>62.2</b> | <b>65.6</b> | <b>69.1</b> | <b>72.0</b> |
| <b>Potential Balance</b>   | <b>0.8</b>  | <b>3.3</b>  | <b>5.4</b>  | <b>7.1</b>  | <b>7.8</b>  |
| <b>% Balance/Supply</b>    | <b>1%</b>   | <b>5%</b>   | <b>8%</b>   | <b>10%</b>  | <b>11%</b>  |

Source: Prud'homme, IFA, June 2013