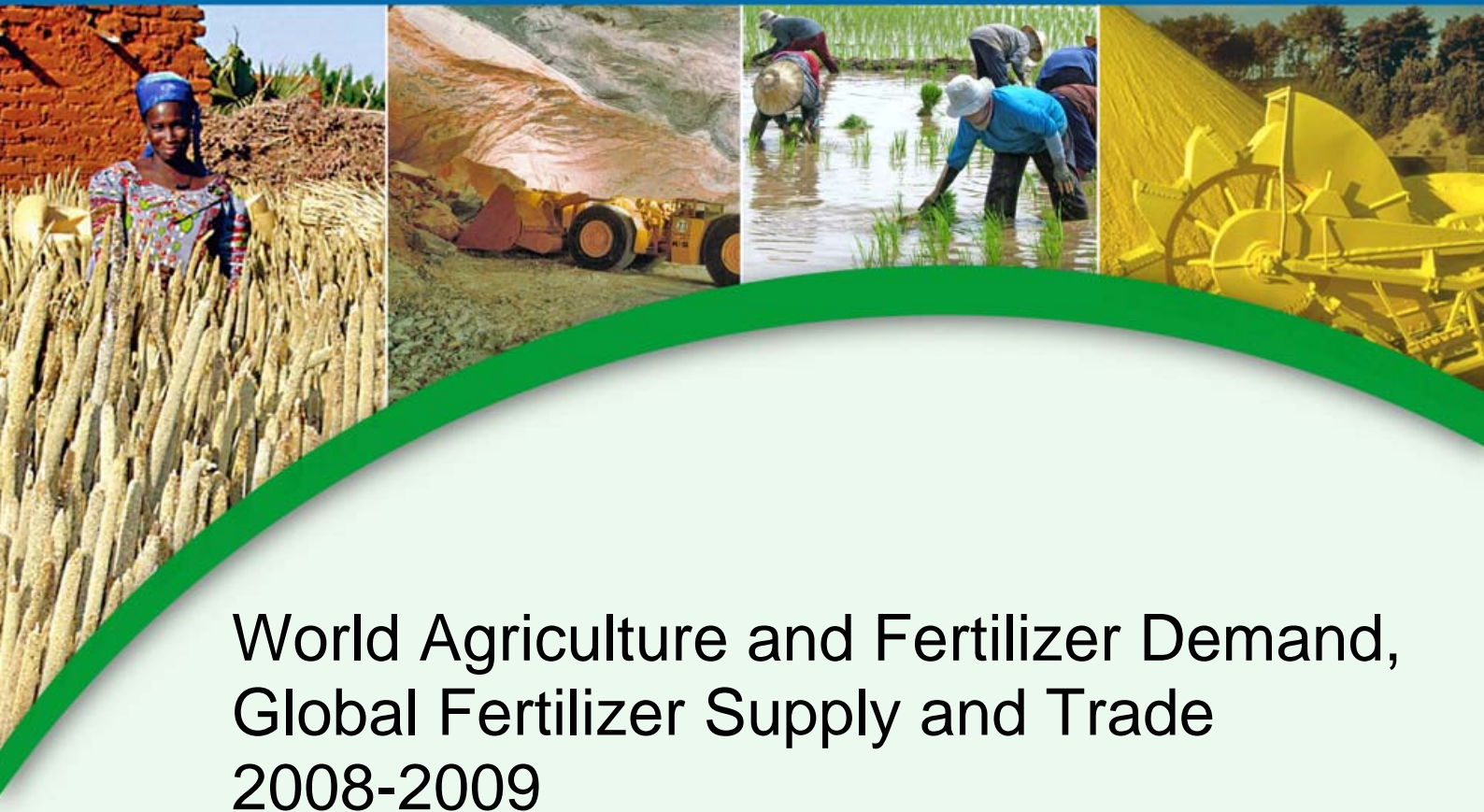


34<sup>th</sup> IFA Enlarged Council Meeting  
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# World Agriculture and Fertilizer Demand, Global Fertilizer Supply and Trade 2008-2009

## *Summary Report*

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This Summary Report was prepared by Patrick Heffer, Executive Secretary of the IFA Agriculture Committee, and Michel Prud'homme, Executive Secretary of the IFA Production and International Trade Committee. It presents an overview of short-term prospects for world agriculture and fertilizer demand, as well as the global fertilizer supply and trade situation in 2008 and 2009.

This report is available to the general public on the IFA web site, or by request to the IFA Secretariat.

The Summary Report draws on the revised versions of two IFA reports presented at the 34<sup>th</sup> IFA Enlarged Council Meeting held in Ho Chi Minh City in November 2008: *Short-Term Prospects for World Agriculture and Fertilizer Demand 2007/08-2009/10* (A/08/156) and *Global Fertilizer Supply and Trade 2008-2009* (A/08/146b). These two comprehensive reports are restricted to IFA members only.

The first part of the Summary Report looks at the global economic context and agricultural situation. The second part provides fertilizer consumption estimates for 2007/08 and forecasts for 2008/09. The third part presents IFA's perspective on fertilizer supply and supply/demand balances for 2008 and 2009.

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## PART 1 – GLOBAL ECONOMIC CONTEXT AND AGRICULTURAL SITUATION

### 1.1. Global Context

#### ***The financial and economic downturn drives the outlook.***

After several years of extraordinary growth, the world economy is entering a depressed period. The situation deteriorated quickly during the third quarter of 2008. World GDP growth is seen as dropping from 5% in 2007 to 3.7% in 2008 and 2.2% in 2009, according to the International Monetary Fund (IMF).

**World GDP Growth Projections  
(% change)**

|        | 2006 | 2007 | 2008 | 2009 |
|--------|------|------|------|------|
| World  | 5.1  | 5.0  | 3.7  | 2.2  |
| China  | 11.6 | 11.9 | 9.7  | 8.5  |
| USA    | 2.8  | 2.0  | 1.4  | -0.7 |
| India  | 9.8  | 9.3  | 7.8  | 6.3  |
| EU     | 3.3  | 3.1  | 1.5  | -0.2 |
| Brazil | 3.8  | 5.4  | 5.2  | 3.0  |
| Russia | 7.4  | 8.1  | 6.8  | 3.5  |

Source: IMF

Prices of oil and non-fuel commodities are declining quickly. Over a few months, crude oil prices dropped from more than US\$ 140 per barrel to US\$ 52 in mid-November. The current financial crisis has also had a strong impact on the US\$ exchange rate. The value of the dollar is growing rapidly vis-à-vis many other currencies.

The present economic situation impacts world agriculture and fertilizer demand in several ways:

- Current fast-changing prices of agricultural commodities and fertilizers make it risky for farmers to invest in fertilizers. As a consequence, they tend to await an improvement in the cost-benefit ratio and a more predictable environment before investing in fertilizers. The cost-benefit ratio is also strongly influenced by the fast-evolving US\$ exchange rate.
- In many countries, it is anticipated that distributors and farmers will experience difficulties in accessing credit to purchase agricultural inputs, including fertilizers. This is expected to result in import difficulties and smaller sales. Where there are sufficient phosphorus and potassium reserves in soils, farmers are likely to rely temporarily on the reserves and to purchase smaller amounts of these two nutrients.

Nitrogen should not be as greatly affected. If yields are impacted by less intensive farming practices, grain prices could very well rebound in 2009.

- With the decline in confidence and purchasing power, consumers might come back to more 'basic' diets, with more grain vs. meat, fish, fruits and vegetables. Such a reversal of trend would impact fertilizer demand.
- If crude oil prices further contract, the economics of biofuels might be threatened unless the sector is heavily subsidized or feedstock prices drop proportionally to crude oil futures.

Weather conditions in 2007/08 have been quite favourable overall, making it possible to achieve high yields in the main agricultural regions. Conditions during the autumn in the northern hemisphere have led to satisfactory emergence of winter crops, offering good prospects for the 2009 harvest.

On the policy side, implementation of the new US Farm Bill has had little impact on the agricultural sector as it mainly represents a prolongation of the previous agricultural policy. In the EU, the Common Agricultural Policy is under scrutiny. The abolition of the 10% mandatory set-aside is likely to become permanent. Food security is an outstanding issue for many low-income and food-deficit countries. In order to ensure food security and limit reliance on food imports, many developing countries are implementing measures to boost agricultural production, restrict exports or make inputs more affordable.

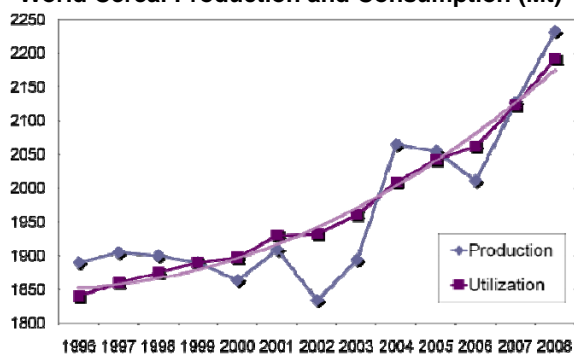
### 1.2. Agricultural Situation

#### ***The fundamentals of the agricultural commodity market remain strong.***

According to the latest estimates by the United States Department of Agriculture (USDA), the 2007 global cereal harvest reached 2,120 million metric tonnes (Mt), a 5.7% increase from the previous year. This was possible thanks to a bumper maize crop in the United States and a good harvest in Asia. USDA projects that, in response to strong agricultural commodity prices and favourable weather, world cereal production rose by another 4.2% in 2008, to a record 2,208 Mt.

Most of the growth came from a record wheat harvest in Europe. More modest gains are anticipated for coarse grains and rice.

**World Cereal Production and Consumption (Mt)**

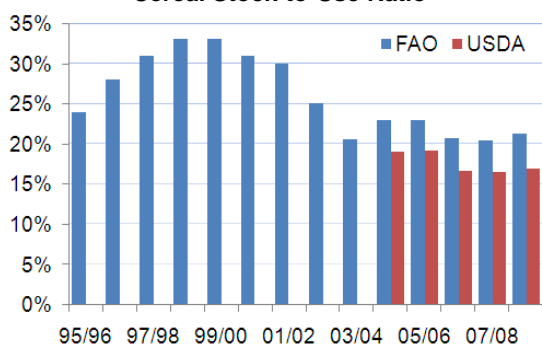


Source: FAO

Global cereal utilization is forecast to reach 2,184 Mt in 2008/09, a 3.6% increase over the previous campaign. This trend is mostly driven by strong demand by the US bioethanol industry. Thus, between 2003/04 and 2008/09, industrial uses of maize have more than doubled while, during the same period, food and feed maize uses have increased by only some 10%.

Further to two consecutive record harvests in 2007 and 2008, world cereal stocks are slightly increasing. The world cereal stock-to-use ratio is estimated to have changed only marginally in 2007/08. Projections by the Food and Agriculture Organization of the United Nations (FAO) and USDA point to a modest recovery in 2008/09. The ratio is forecast at 21.3% by FAO and at 17.3% by USDA. Based on USDA's forecasts, the stock-to-use ratio at the end of the 2008/09 campaign would be some 22% for wheat, 19% for rice and below 14% for coarse grains.

**Evolution of the World Cereal Stock-to-Use Ratio**



Source: FAO and USDA

The world stock-to-use ratio for the other major agricultural commodities, such as soybean, sugar and cotton, is seen as either stable or slightly declining at the end of the 2008/09 marketing campaign.

Despite these strong market fundamentals, prices of all cereals and oilseeds have been dropping very quickly and sharply during the second half of 2008. This unexpected trend began with the removal of speculative funds from the grain market as the financial crisis deepened. Some countries quickly removed their grain export restrictions, which contributed to an acceleration of the crop price decline. At the moment, prices are back to levels observed one to two years ago. Downward pressure might persist for a few months. However, in the case of bad prospects for the 2009 harvest, futures could rebound very quickly as world inventories are still very low.

## PART 2 – GLOBAL FERTILIZER DEMAND

### *Risk minimization drives farmers' decisions when purchasing agricultural inputs.*

In a context of fast-evolving crop and fertilizer prices, farmers tend to be cautious about application rates, in particular for phosphate and potash in areas where soils contain appropriate levels of these two nutrients. In many countries, farmers postpone their fertilizer orders in anticipation of a possible further decline in fertilizer prices. Moreover, they are reluctant to invest in inputs when there is great uncertainty about the price they will be paid for their harvest. Difficulty in accessing credit and the cost of credit aggravate the situation.

In such a context, risk minimization is the top objective leading the decision process of many farmers, with the significant exception of countries such as India, where farmers are protected against fertilizer and crop price fluctuations.

### *Declining crop prices affect fertilizer demand – potash and phosphate are most impacted.*

Fertilizer consumption rose sharply in 2007/08,<sup>1</sup> boosted by strong agricultural commodity prices during the first half of 2008 and strong policy support in many Asian countries. Aggregate world demand is seen as up 4.7%, to reach 168.7 Mt nutrients.

<sup>1</sup> Or in 2007 for countries with fertilizer consumption statistics in calendar years.

Consumption is estimated to have increased more firmly for potash (+6.3%) than for nitrogen (+4.9%) and phosphate (+2.8%). Demand is seen as sharply up in Latin America (+13.4%), followed by Western and Central Europe (+8.7%), Eastern Europe and Central Asia (+8.6%), East Asia (+5.0%) and South Asia (+4.7%). Demand is seen as stable in Oceania, while it would contract in Africa (-2.0%), North America (-1.5%) and West Asia (-6.3%).

**Global Fertilizer Consumption, 2006/07 to 2009/010 (Mt nutrients)**

|               | N            | P <sub>2</sub> O <sub>5</sub> | K <sub>2</sub> O | Total        |
|---------------|--------------|-------------------------------|------------------|--------------|
| 06/07         | 95.8         | 38.2                          | 27.2             | 161.2        |
| 07/08 (e)     | 100.5        | 39.3                          | 28.9             | 168.7        |
| <i>Change</i> | <i>+4.9%</i> | <i>+2.8%</i>                  | <i>+6.3%</i>     | <i>+4.7%</i> |
| 08/09 (f)     | 101.1        | 37.5                          | 26.5             | 165.0        |
| <i>Change</i> | <i>+0.5%</i> | <i>-4.7%</i>                  | <i>-8.2%</i>     | <i>-2.2%</i> |
| 09/10 (f)     | 104.5        | 38.8                          | 27.5             | 170.9        |
| <i>Change</i> | <i>+3.4%</i> | <i>+3.6%</i>                  | <i>+3.9%</i>     | <i>+3.5%</i> |

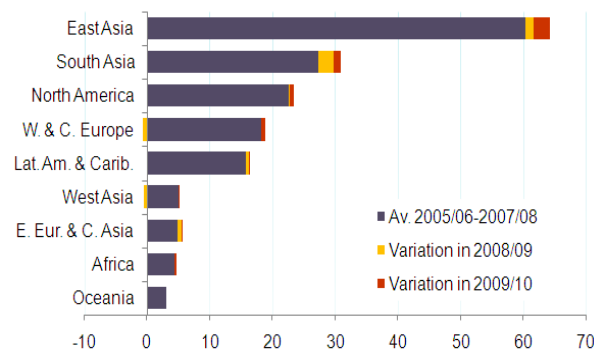
Source: IFA

Because of the depressed context during the second half of 2008, tentative forecasts for global fertilizer consumption in 2008/09 point to a decline of 2.2%, to 165.0 Mt nutrients. Projections indicate a slight increase in nitrogen consumption (+0.5%), while demand for phosphate and potash is seen as down 4.7% and 8.2%, respectively. Only two regions are seen as increasing their fertilizer demand in 2008/09: South Asia (+4.0%) and Eastern Europe and Central Asia (+3.5%). Sharp declines are anticipated in Western and Central Europe (-8.6%), West Asia (-8.3%) and Latin America (-6.4%). More modest drops are seen in East Asia (-2.5%), North America (-1.0%) and Africa (-0.6%).

Projections to 2009/10 are very speculative at this time, as the evolution of the economic, financial and agricultural context in 2009 is hardly predictable. After a likely depressed first half of 2009, demand could recover during the second half of the year. The context should be more positive during the first half of 2010. Global fertilizer demand in 2009/10 could therefore progressively recover. It is tentatively projected to grow by some 3.5%, with growth rates of similar magnitude for all three nutrients.

Similarly to forecasts issued for previous years, the bulk of the growth in fertilizer demand between the base year (average 2005/06 to 2007/08) and 2009/10 would come from East and South Asia, with South Asia being the driving force in 2008/09 and East Asia in 2009/10.

**Projected Evolution of Regional Fertilizer Demand in 2008/09 and 2009/10**



Source: IFA

### PART 3 – GLOBAL FERTILIZER SUPPLY

World fertilizer markets have experienced a period of great volatility, despite the strong positive demand prospects envisioned at the beginning of 2008. Market fundamentals then offered a firm demand foundation for the next five years, supported by a tight balance of grain supply over demand and low grain stocks. Driven by these expectations, fertilizer imports and fertilizer prices reached record levels by mid-year 2008. Inflationary pressures, combined with improved global harvest prospects and declining oil consumption, then started to impact global agri-commodity markets.

Fertilizer market conditions deteriorated rapidly through the second half of 2008. In late 2008, the fertilizer industry faced a slowdown of sales, amid rising inventories, as farmers delayed purchases in expectation of further price reductions, volatile commodity prices and tightening financial conditions. This combination of factors is dampening the short-term prospects of international fertilizer markets.

A few factors have eased global fertilizer supply in late 2008 and entering 2009. Ocean shipping rates, in free fall since May 2008, have lowered the delivered costs and increased the trade availability of fertilizer products across the globe. The steep short-term decline in energy prices, notably that of crude oil, has provided some relief to nitrogen producers in key producing countries; however, the trend of energy costs is generally moving upward in the near term.

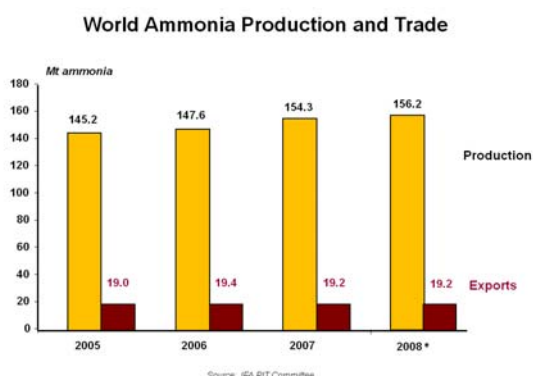
The implementation of export taxes, notably in China, has generated a high degree of uncertainty in fertilizer international markets. In 2007, China was the world's largest urea exporter and one of the main suppliers of MAP-DAP; the imposition of higher export tariffs, which were readjusted several times during the year, further exacerbated the implied tightness in world supply, at least until the fourth quarter of 2008. Under the new tax regime announced in mid-November 2008, China's exports are likely to resume, but under depressed market conditions.

The recent decline in demand, associated with financial constraints, has started to impact capacity projects. Several projects were delayed in 2008, and such delays are likely to continue to occur in 2009. Therefore, capacity additions could be much lower than anticipated.

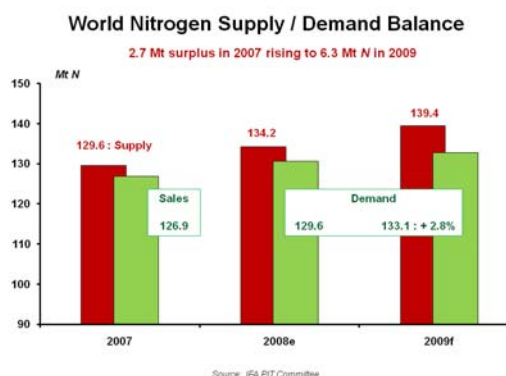
According to the IFA Agriculture Committee, fertilizer demand prospects in the short term look relatively bearish, with global consumption dropping by 1.5% in 2008 and potentially recovering in 2009, with 2.8% growth. However, the main drivers of fertilizer demand growth are resilient. Indeed, the need for higher yields and increasing crop production remains a top priority. The potential for a sharp upswing in fertilizer demand, and the likelihood of a recurrent tightness in short-term fertilizer supply, are underlying aspects that have been overshadowed by the current financial and economic crisis.

## Nitrogen Outlook

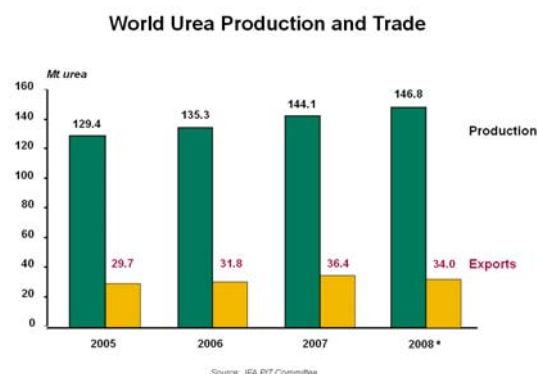
According to IFA's surveys, world ammonia production in 2008 would register a modest 1.2% increase, to 156.2 Mt  $NH_3$ . China alone would contribute more than one-half of this increase. Global ammonia trade would be stagnant at 19.2 Mt  $NH_3$ . Seaborne trade of ammonia would be flat, at best.



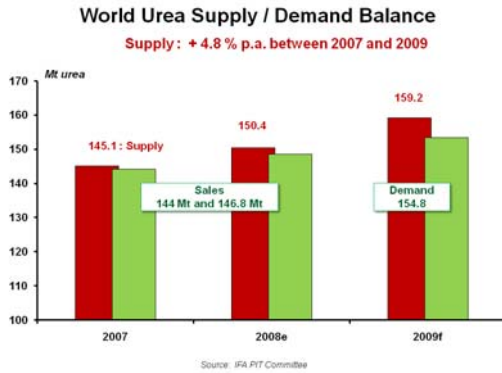
Global merchant ammonia capacity will expand modestly in 2009, mostly in the regions east of Suez. No further additions are expected before 2011. The supply and demand balances of nitrogen for the period 2007 to 2009 show the emergence of a large potential surplus of about 6.3 Mt N in 2009, up from 4.8 Mt N in 2008. This potential surplus would mostly emerge during the first half of 2009.



Global urea production in 2008 was estimated at close to 146.8 Mt *product*, representing a 23% increase over 2007; however, global trade would decrease by at least 6.5%, to 34 Mt. Most exporters, with very few exceptions, would register lower sales. The main driving force with respect to import demand has been India.



In 2008, global urea capacity was estimated at 163 Mt. Close to 5.4 Mt of new urea capacity was commissioned, mostly in China. The other main additions occurred in Egypt and Iran. In 2009, global urea capacity is projected to increase by 11 Mt, to 174 Mt. China will contribute close to one-half of the world increase.

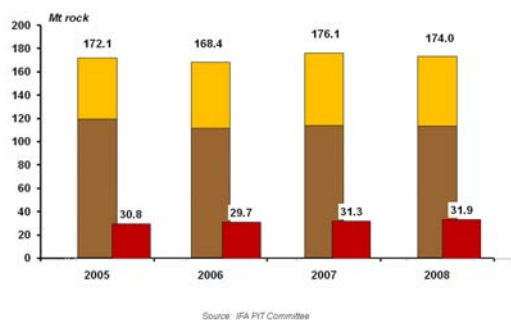


The global urea supply/demand balance has evolved from a severe supply tightness in 2007 to a gradually increasing surplus. 2009 will be characterized by a surge of new capacity, mostly available during the second half of the year, and by a possible recovery of the nitrogen fertilizer markets during the second half of 2009. Global urea sales might also improve in response to reduced prices. China would remain in a strong net exporting position due to its excess capacity, but the level of shipments will continue to be influenced by its export policy. When deducting idled capacity, the potential surplus by the end of 2009 would be only 2.5 Mt urea, equating to less than 1.5% of global supply.

## Phosphate Outlook

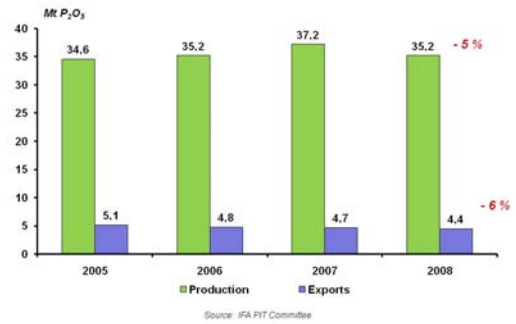
IFA's preliminary estimates in 2008 point to reduced output of all phosphate-based products: phosphate rock, down 1% to about 174 Mt; phosphoric acid, -5.4% to 35.2 Mt  $P_2O_5$ ; and processed phosphates, -5% to 23.8 Mt  $P_2O_5$ .

**World Phosphate Rock Production and Trade**



Global trade of phosphate rock in 2008 expanded, despite weakening fertilizer demand during the second half of the year. Imports of phosphate rock increased in Asia and Oceania. Sales of phosphoric acid and processed phosphates decreased, due to lower domestic consumption in China and reduced imports in India and Brazil. The only positive change was the massive increase in DAP imports by India.

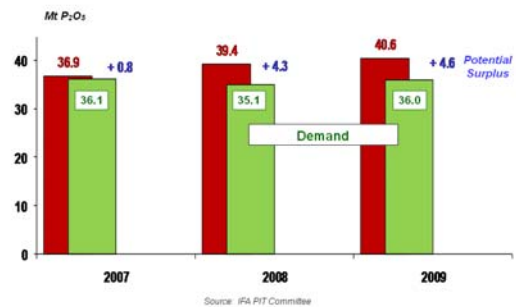
**World Phosphoric Acid Production and Trade**



Global phosphoric acid capacity in 2008 grew by 3 Mt, to 46 Mt  $P_2O_5$ , mostly due to expansions in China, Morocco, Mexico and Viet Nam. In 2009, it is forecast to reach 47.0 Mt  $P_2O_5$ . However, no new merchant acid capacity will come on stream in 2008 and 2009. In 2008, global MAP-DAP capacity grew by 2.4 Mt  $P_2O_5$ . The main addition of capacity was in China, Mexico and Russia.

Less than 0.6 Mt  $P_2O_5$  of new MAP-DAP capacity will be added in 2009.

**Global Phosphoric Acid Supply / Demand**

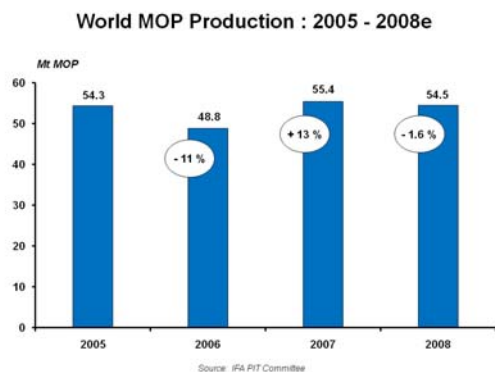


Assuming a recovery of demand in 2009, the supply/demand balance shows a continuing surplus exceeding 4.5 Mt throughout 2009. This surplus would be more a result of reduced demand than of sustained growth in capacity.

The key balancing factor in 2009 will be the implementation of the new export tariff scheme in China. Global demand for processed phosphates is projected to rebound in 2009, mostly in terms of domestic sales.

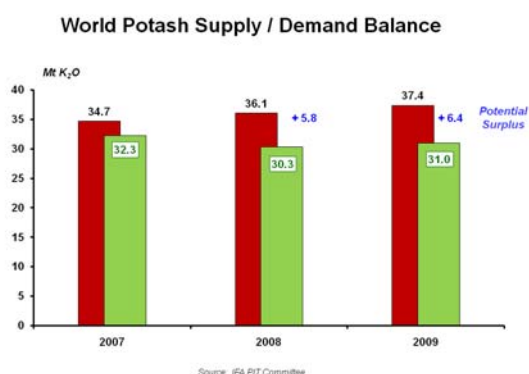
## Potash Outlook

World potash production, sales and exports declined in 2008, despite record levels achieved in the first half of the year.



Global potash capacity is forecast to increase from 40.9 Mt  $K_2O$  in 2007 to 42.3 Mt in 2009. Two-thirds of the net increase will occur in China. Additional capacity will come from Belarus, Canada, Chile, Russia and Israel.

Planned capacity expansion in Jordan and the United States would take effect in 2010. The bulk of new capacity additions will be at the ramp-up stage in 2009.

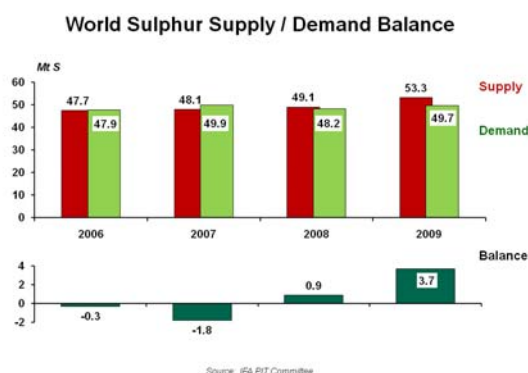


The derived potash supply/demand balance shows a potential surplus rising from 5.8 Mt  $K_2O$  in 2008 to 6.4 Mt in 2009.

By year-end of 2008, huge inventories seemed to exist within the retail distribution systems of key consuming countries, such as Brazil, China and the United States. This will dampen import prospects in 2009. Global potash sales could be static in 2009, with higher domestic deliveries in a few countries. However, global import demand is set to grow at high rates after 2009.

## Sulphur Outlook

Global output of elemental sulphur in 2008 is projected to increase by less than 2%, to 49.1 Mt S, while demand may drop by 4%, to 48.2 Mt. World elemental sulphur production recorded slower growth than anticipated, due to reduced recovery from the processing of sour natural gas. Consumption of elemental sulphur for fertilizers was very firm in the first half, but virtually collapsed by the third quarter of 2008.



The global supply/demand balance in 2008 would show a net marginal surplus of less than 1 Mt S. However, in light of subdued demand growth in 2009, this surplus could exceed 3.5 Mt by the end of 2009.

## Conclusions

The reversal of market conditions since mid-2008 is seen as essentially driven by the major slowdown in fertilizer demand growth in 2008/09, in contrast with earlier forecasts. This major imbalance is conjunctural and not structural, since it is derived from a short-term downturn and not from a surge in additional capacity.

In 2009, global production of fertilizers and raw materials will likely register very marginal growth, essentially based on the anticipation of improving market conditions during the second half of 2009.

However, these projections are clouded by the recession perspectives in many countries. Fertilizer sales may recover, but mostly in domestic markets. Overall fertilizer trade prospects will be soft in 2009, with the exception of sustained import demand in South Asia.

Trade patterns will shift, reflecting rising input costs, potential import substitution and increasing export availability from countries with excess supply.

Therefore, a significant rebound in fertilizer demand would again stretch the limits of global supply adequacy, especially for potash and phosphate.

The main variable in 2009 will be the potential upswing in fertilizer demand. Should demand recover worldwide and grow on a sustained basis in the near term, serious impacts would arise: first, logistically, since deliveries would be squeezed within a narrow time frame; and then, structurally, since limited new capacity is expected to come on stream in the short term and several medium-term projects have been postponed.

### WORLD SUPPLY/DEMAND BALANCES: 2007-2008-2009

| Products  |        |                          | 2007         | 2008         | 2009         |
|---|--------|--------------------------|--------------|--------------|--------------|
| Nitrogen<br><i>Mt N</i>                                 | Supply |                          | 126.9        | 134.2        | 139.4        |
|   | Demand |                          | 126.0        | 129.4        | 133.1        |
|   |        | <i>Potential balance</i> | <i>+ 0.9</i> | <i>+ 4.8</i> | <i>+ 6.3</i> |
| Urea<br><i>Mt urea</i>                                  | Supply |                          | 145.1        | 150.4        | 159.2        |
|   | Demand |                          | 141.9        | 147.6        | 154.8        |
|   |        | <i>Potential balance</i> | <i>+ 3.2</i> | <i>+ 2.9</i> | <i>+ 4.4</i> |
| Phosphoric acid<br><i>Mt P<sub>2</sub>O<sub>5</sub></i> | Supply |                          | 36.9         | 39.4         | 40.6         |
|   | Demand |                          | 36.1         | 35.1         | 36.0         |
|   |        | <i>Potential balance</i> | <i>+ 0.8</i> | <i>+ 4.3</i> | <i>+ 4.6</i> |
| Potash<br><i>Mt K<sub>2</sub>O</i>                      | Supply |                          | 34.7         | 36.1         | 37.4         |
|   | Demand |                          | 32.3         | 30.3         | 31.0         |
|   |        | <i>Potential balance</i> | <i>+ 2.4</i> | <i>+ 5.8</i> | <i>+ 6.4</i> |

IFA Production and International Trade Committee – November 2008

