Global Fertilizer Supply/Demand

Magnus Berge

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Presentation Outline

Global Market Overview

Supply, Demand, Trade and Prices
- Nitrogen Market Outlook
- Phosphates Market Outlook
- Potash Market Outlook

Outlook for the Brazilian Market

Conclusions

CRU International
Global Market Overview
>70% fertilizer consumption is in China, India, USA, EU and Brazil.

China 28%
India 16%
USA 12%
EU 10%
Brazil 6%
ROW 28%
Demand Drivers

- Crop prices
- Fertilizer prices
- Tactical buying
- Weather patterns
- Non-food crops
- Better nutrient balance
- Changing diets
- Rising population

Fertilizer is widely under-applied and inefficiently applied in developing economies ⇒ poor yields and high growth potential
Trends in N, P & K Demand – 2007-2012 (million mt)

Urea

DAP

MOP
Supply & Demand Balances for Key Crops: Corn & Soybeans

CORN

SOYBEAN

Production
Consumption
STU

million mt


Production
Consumption
STU

million mt


STU in %
Fertilizer Affordability Index

Correlation: 81%
CRU’s Crop Price Index Forecast (2000=100)

Export Price Index (2000=100)

- Wheat
- Corn
- Soybeans

Forecast
Supply, Demand, Trade and Prices

Nitrogen Market Outlook
Phosphates Market Outlook
Potash Market Outlook
N Fertilizer Use by Main Regions - 2010

- South Asia: 24%
- E Asia: 37%
- Americas: 22%
- SE Asia + Oceania: 4%
- Other: 4%
- Europe + FSU: 9%
N Fertilizer Use by Crop – 2010

- Wheat: 17%
- Rice: 16%
- Corn: 17%
- Fruits & Veg.: 16%
- Other Crops: 16%
- Sugar Crops: 3%
- Cotton: 4%
- Other Coarse Grains: 5%
- Other Oilseeds: 4%
- Soybeans: 1%
- Oil Palm: 1%
- Cotton: 4%
- Other Crops: 16%
Urea Supply/Demand Balance, 2000-2017

Supply | Demand | Utilisation

Million mt urea

0 10 20 30 40 50 60 70 80 90 100%

0 50 100 150 200 250 300

Urea Capacity Forecast to 2017 (million mt)
Urea Demand Forecast to 2017 (million mt)
Urea Trade Forecast to 2017 (million mt)

Million mt

Crude Oil and Urea Prices, History and Forecast

- **Brent Crude Oil, $/bbl**
- **Urea, Black Sea FOB price index (2000=100)**

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Urea Price Forecast Indices, Major Benchmarks

2000-2017 (2000=100)
Supply, Demand, Trade and Prices

Nitrogen Market Outlook
Phosphates Market Outlook
Potash Market Outlook
Granulation capacity by major producer in 2011

- ROW, 27%
- Other China, 25%
- Other, 11%
- Mosaic, 11%
- PCS, 2%
- CF, 2%
- Other USA, 2%
- Vale, 3%
- Ma'aden, 4%
- IFFCO, 4%
- PhosAgro, 3%
- YTH, 5%
- Wengu, 3%
Over 30% of annual production is traded...
The short term forecast is dominated by India...

1. Dec 2011: Chinese export policy tightened
2. Q1/2 2012: Production difficulties continue
3. May 2012: OCP secures Phos Acid export contract at $885/mt CFR
5. June 2011: Chinese producers hold out and secure $580/mt contract
Is anyone else able to pick the slack? Brazil!

Brazilian crop area, million hectares

- Sugar
- Soyabean
- Corn

Year:
- 1977
- 1982
- 1987
- 1992
- 1997
- 2002
- 2007
- 2012
- 2017

Crop area:
- 0
- 10
- 20
- 30
- 40
- 50
- 60

Crop types:
- Green: Sugar
- Blue: Soyabean
- Red: Corn
... which will push result in Brazilian P demand growth of 5% CAGR 2011-2017
On the supply side, China has driven global production growth over the past decade...
... and exports are under pressure
... therefore limiting future production growth
Where is new supply going to come from?
The outlook for prices: bulls and bears

Bearish factors:

Short/medium term trends:
- Indian import are under threat (high prices, reduced subsidies, weak rupee);
- Anticipation of new supply ramping up in MENA (Ma’aden, OCP);
- Anticipation of existing supply returning to production in 2012/13 (Tunisia, Egypt);
- Chinese trade policy could promote additional DAP/MAP supply, at lower prices.

Long term trends:
- Further capacity growth expected in MENA over long term, could flood market.

Bullish trends:

Short/medium term trends:
- Agricultural markets remain relatively tight (corn, soybean);
- Willingness of producers to cut production (Mosaic, PhosAgro, OCP);
- Continued technical difficulties at Ma’aden’s operations;
- Continued strong P demand in Latin America over short term.

Long term trends:
- Higher cost structures (opex & capex);
- Continued demand growth.
FOB TAMPA DAP Price Index forecast: 2010-2017 (2010=100)
Supply, Demand, Trade and Prices

Nitrogen Market Outlook
Phosphates Market Outlook
Potash Market Outlook
World Potassium Chloride Capacity

2011 Capacity (million mt/y)

- PotashCorp
- Uralkali
- Mosaic
- Belaruskali
- ICL
- K+S
- Arab Potash
- Agrium
- QSL Potash
- Vale
- SQM
- Intrepid
- Other

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New Potash Mines Under Construction

- **VALE**
  - Rio Colorado Project
    - US$5.9bn
    - 4.35m t/y
    - Start-up end-2014
    - Ramp-up to 2021

- **K+S**
  - Legacy Project
    - C$3.25bn
    - 2.86m t/y
    - Start-up 2015
    - Ramp-up to 2023

- **EUROCHEM**
  - Gremyachaya Project
    - US$3.4bn
    - 2.30m t/y (Phase I)
    - 2.30m t/y (Phase II)
    - Start-up end-2014
    - Ramp-up to 2017

- **EUROCHEM**
  - Palaschersk Project
    - US$2.0bn
    - 2.00m t/y (Phase I)
    - Phase II pending approval
    - Start-up 2016
    - Ramp-up to 2019
Worldwide Capacity & Production Trend (million mt)

- **North America**
- **CIS**
- **ROW**
- **Global capacity**

**Million mt KCl**

**Years:** 1990 to 2017
Forecast of Global KCl Deliveries to 2017

- **China**: 55.1 million mt in 2011, 52.6 million mt in 2012, 57.1 million mt in 2013, 60.9 million mt in 2014, 62.9 million mt in 2015, 64.9 million mt in 2016, 66.9 million mt in 2017
- **USA**: 0 million mt in 2011, 0 million mt in 2012, 0 million mt in 2013, 0 million mt in 2014, 0 million mt in 2015, 0 million mt in 2016, 0 million mt in 2017
- **Brazil**: 0 million mt in 2011, 0 million mt in 2012, 0 million mt in 2013, 0 million mt in 2014, 0 million mt in 2015, 0 million mt in 2016, 0 million mt in 2017
- **India**: 0 million mt in 2011, 0 million mt in 2012, 0 million mt in 2013, 0 million mt in 2014, 0 million mt in 2015, 0 million mt in 2016, 0 million mt in 2017
- **SE Asia**: 0 million mt in 2011, 0 million mt in 2012, 0 million mt in 2013, 0 million mt in 2014, 0 million mt in 2015, 0 million mt in 2016, 0 million mt in 2017
- **ROW**: 0 million mt in 2011, 0 million mt in 2012, 0 million mt in 2013, 0 million mt in 2014, 0 million mt in 2015, 0 million mt in 2016, 0 million mt in 2017
Recent & Forecast KCl Deliveries – Central & South America

KCI deliveries (million mt)

- Brazil
- Other

Year:
- 2007
- 2008
- 2009
- 2010
- 2011
- 2012
- 2013
- 2014
- 2015
- 2016
- 2017

KCl deliveries:
- Brazil
- Other
1. India still making imports under 2011/12 fiscal year contract

2. China has imported strongly in H1 2012. New contracts may not be signed until Q4

3. US has been hit by severe drought, potash imports affected but largest corn planted-area in decades to lead to spring demand rebound

4. Brazil has been importing at over 1m mt/month over the last two months but producers unable to raise prices
The outlook for prices: bulls and bears

**Bearish factors:**

**Medium term trends:**

- Risk of serious over-capacity developing over the next five years, despite recent news that BHP Billiton and Vale are postponing final approval for projects.
- Concerns that producers will continue to push to maximize prices, hampering demand growth.
- India remains a major concern, with consumption at least 30% below normal levels.

**Bullish trends:**

**Medium term trends:**

- Although some dilution of pricing power is expected but producers will continue manage production to protect prices.
- There remains significant scope for demand growth in some markets: Brazil, India, China and SE Asia.
- Crop prices are expected to remain high by historical standards, supporting potash prices.
KCl Annual Average Price Index Forecast to 2017 (2010=100)
Brazilian Market Outlook
Brazil Yield Development (Main Crops)

- Soyabean yield in tonnes per hectare
- Corn yield in tonnes per hectare
- Sugarcane yield in tonnes per hectare

Graph showing the yield development from 1970 to 2009 for soyabean, corn, and sugarcane.
Brazilian main Crop Area & P$_2$O$_5$ K$_2$O Consumption (2012-2017)

- Corn
- Soyabean
- Sugarcane
- P2O5 Demand
- K2O Demand

Nutrient Demand in million mt

Million hectares
Conclusions

• Price projections corn, soybeans and wheat to stay well above first half of the 2000s on tighter stocks and ever-rising demand for food

• Urea trade to see steady growth over next five years rising to over 50 million mt by 2017 – prices to stay above post 2008-crisis levels

• Phosphate China production to stabilise over next five years; Brazilian P\textsubscript{2}P\textsubscript{5} demand to support market; DAP pricing to rebound from 2013

• Potash weakening supply/demand balance to put downward pressure on prices over the next five years
MARKET OUTLOOK SERVICES

- Ammonia
- Urea
- Phosphate Rock
- Phosphoric Acid, DAP, MAP & TSP
- Potassium Chloride
- Sulphur
- Sulphuric Acid

COST SERVICES

- Nitrogen Fertilizers
- Potassium Chloride
- Phosphate Rock
- Phosphate Fertilizers
CRU International

Fertilizer Week Online
- Urea
- Nitrates & Sulphates
- Ammonia
- Phosphates
- Potash
- Sulphur
- Sulphuric Acid

Short Term Forecasts
- Urea
- DAP/MAP
- Potash
CRU International

CRU EVENTS

- **Sulphur 2012** - October 2012 - Berlin, Germany
- **Fertilizer Latino Americano** - January 2013 - São Paulo, Brazil
- **Nitrogen + Syngas 2013** - March 2013 - Berlin, Germany
- **Phosphates 2013** - March 2013 - Monte Carlo, Monaco
Por sua atenção, obrigado!

Magnus Berge
Managing Editor - Fertilizer Week

Márcio Goto
Regional Manager

[Contact Information]