# N, P&K OUTLOOK

Fluid Fertilizer Foundation Fresno, California December 7, 2011

Presenter: Jay Yost, Vice President Fertilizer

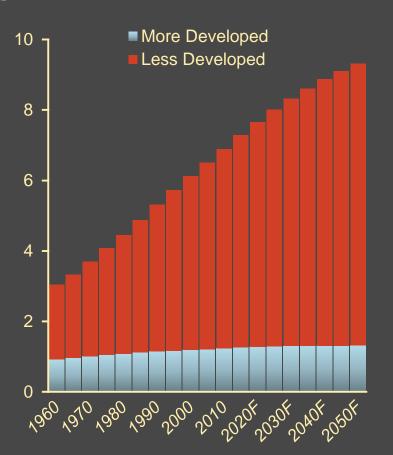


# Fertilizer Demand Drivers

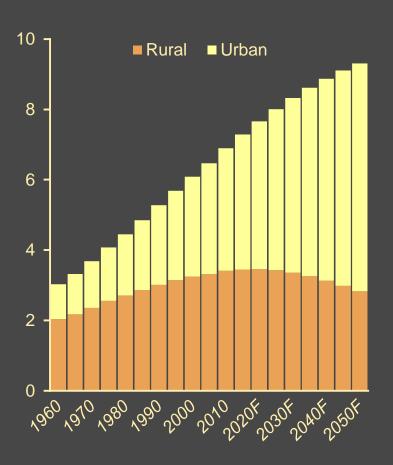
# World Population

# Significant Urban Growth in Developing Countries

Population - Billions



Population - Billions



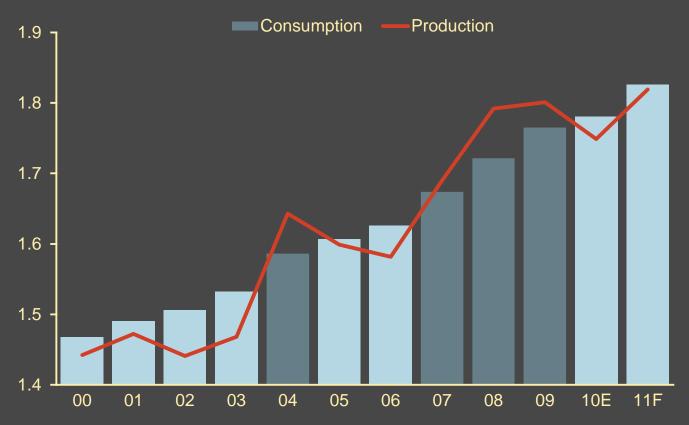
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Source: United Nations

# World Grain Production and Consumption

## **Grain Production Has Not Kept Pace With Rising Demand**

### **Billion Tonnes**



Based on crop year data. For example, 11F refers to the 2011/12 crop year.

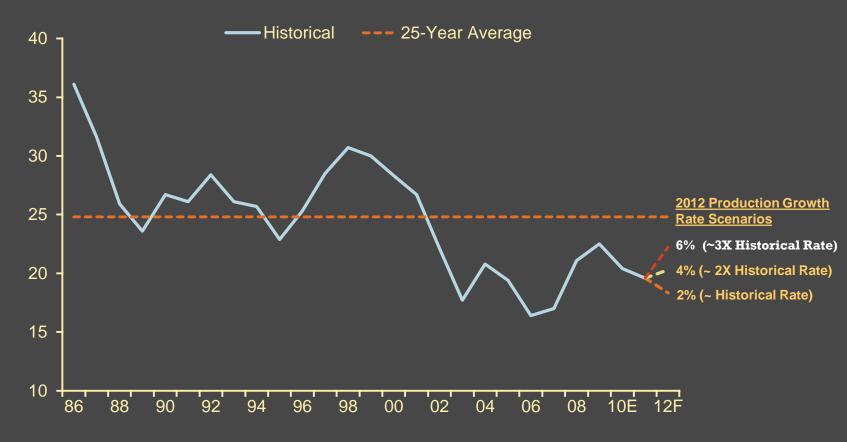
Light bars reflect years when consumption exceeds production.

Source: USDA

# World Grain Stocks-to-Use Ratio

## Grain Inventories Expected to Remain Tight Beyond 2012

### Percent

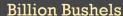


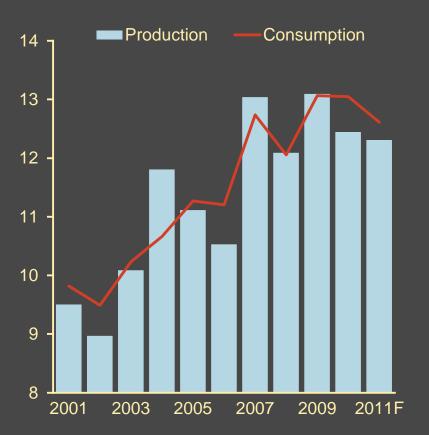
Based on crop year data. For example, 11F refers to the 2011/12 crop year.

Source: USDA, PotashCorp

# **US Corn Supply and Demand**

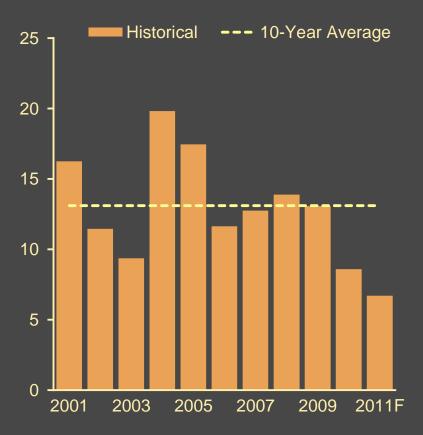
# Corn Stocks Reduced to Historically Low Levels





2011F refers to the 2011/12 crop year

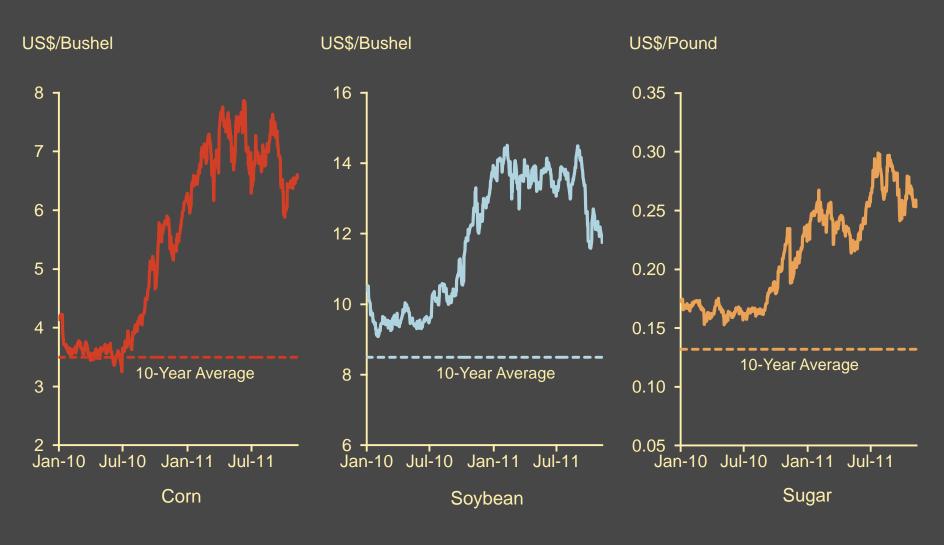
Stocks-to-Use - Percent



Source: USDA

# **World Crop Prices**

# **Prices Remain Well Above Historical Averages**

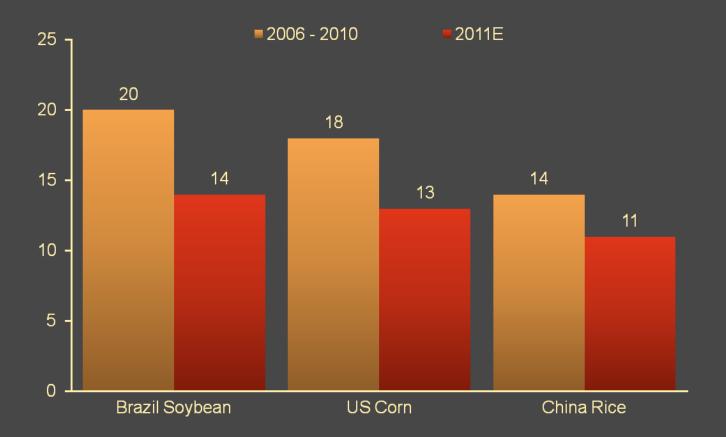


Source: Bloomberg

# Fertilizer Cost Percentage of Crop Revenue

# **Expect Fertilizer Cost Percentage Will Remain Below Historical Levels**

Percent

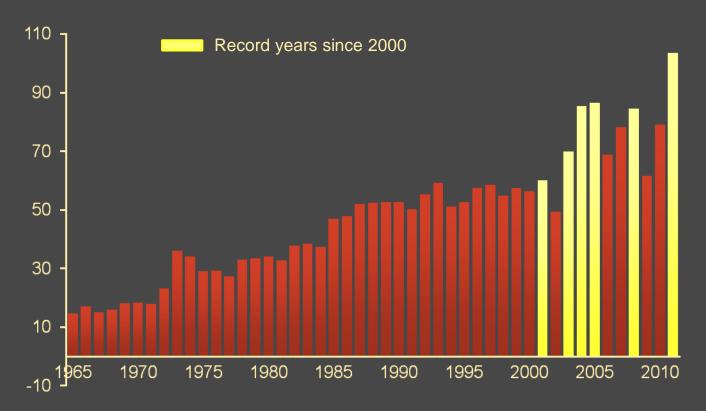


Source: USDA, IPNI, PotashCorp

# **US Net Cash Farm Income**

## **Farm Income Growth Has Accelerated in Recent Years**

**US\$** Billions



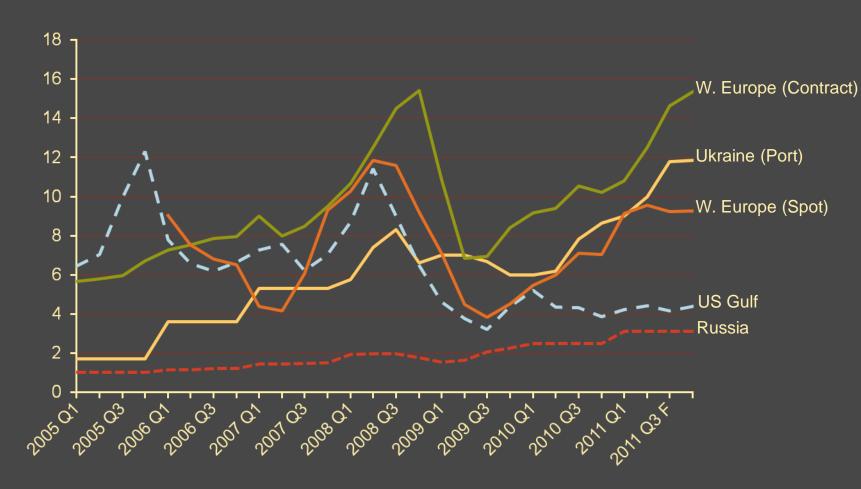
Source: USDA

# Nitrogen Overview

# **Natural Gas Prices in Key Producing Regions**

**US Gas Price Increasingly Competitive** 

\$US/MMBtu

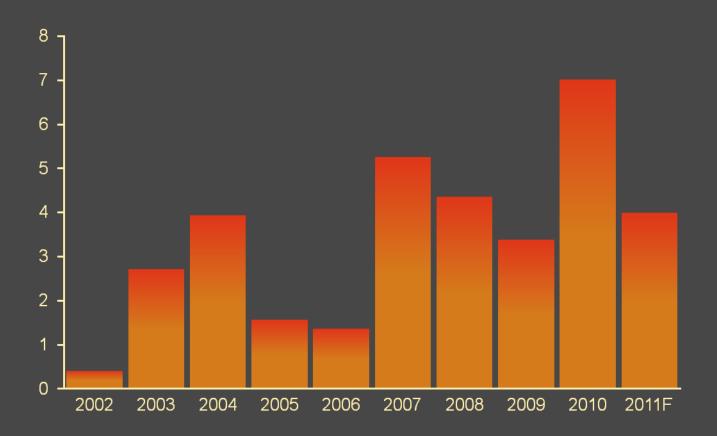


Source: Fertecon, PotashCorp

# **China Urea Exports**

# **China Is Major Swing Factor For Global Urea Trade**

Million Tonnes Urea

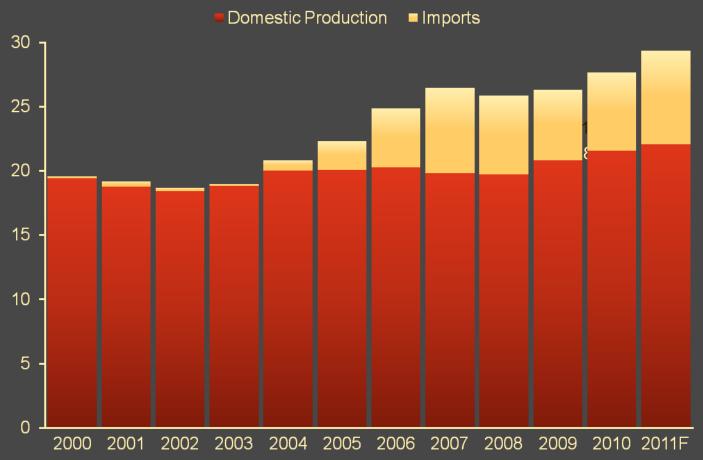


Source: Brilliant Pioneer Consultants, PotashCorp

# **India Urea Imports**

India's rapid import growth has tightened the global urea market

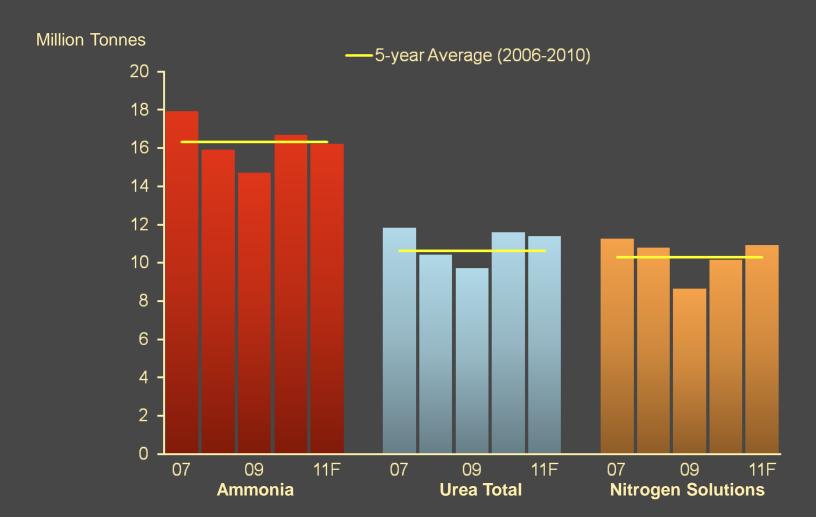




Source: Fertecon, PotashCorp

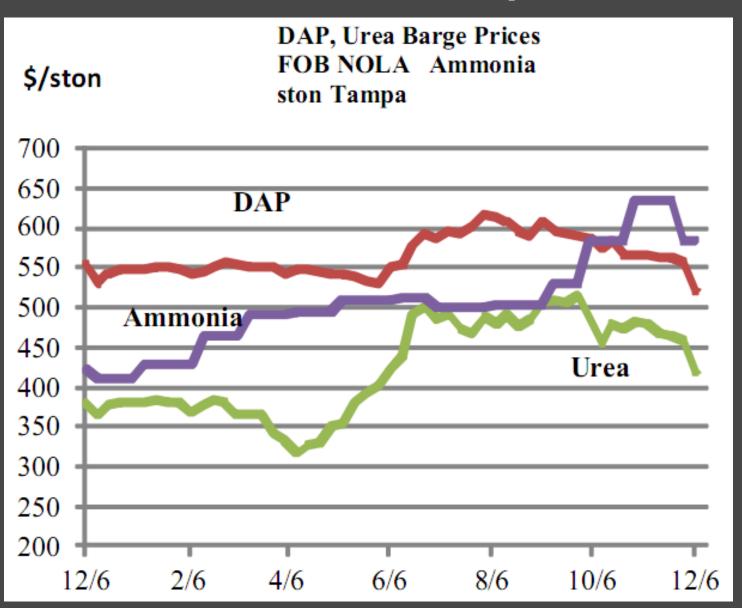
# **US Nitrogen Consumption**

**US Nitrogen Demand Expected to Remain Strong in 2011** 



Source: Fertecon, PotashCorp

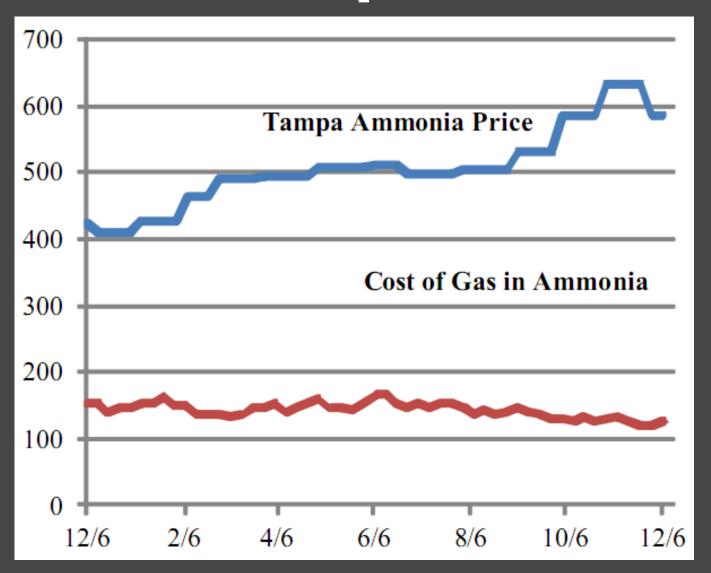
# Urea, Barge Prices FOB NOLA Ammonia ston Tampa



# Nitrogen

- Prices have pushed up due to increased demand and limited supply
  - Main Reason is Dramatic Increase in Crop Commodity Prices
  - Fill Large Dealer/Distributor Storage
- Gas Costs \$3.75 + producers in
   North America are in the drivers seat.

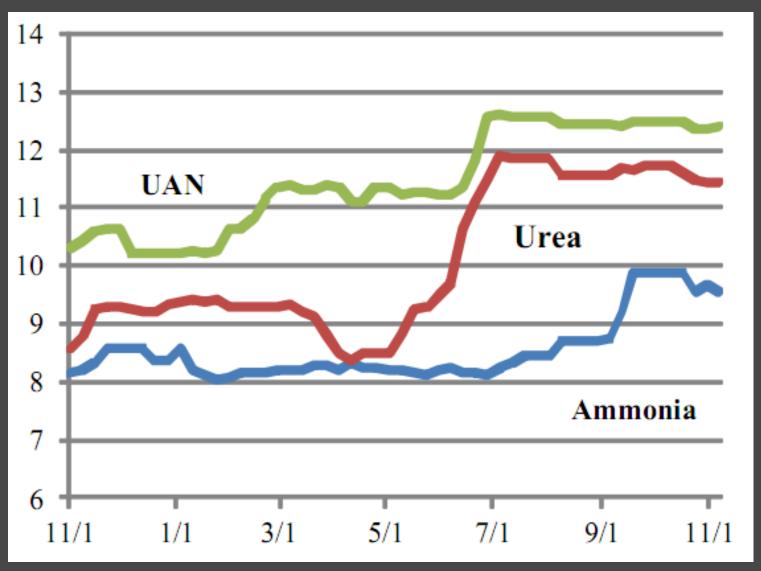
# Cost of Gas in Ammonia vs. Ston Tampa Price



Ammonia: Gas cost in ammonia based on capacity weighted average efficiency for nine Louisiana ammonia plants x midweek close nearest natural gas future NYM exchange.

# Relative Value of N in Fertilizers (Ill., Ia., Mo.)

\$/Unit N

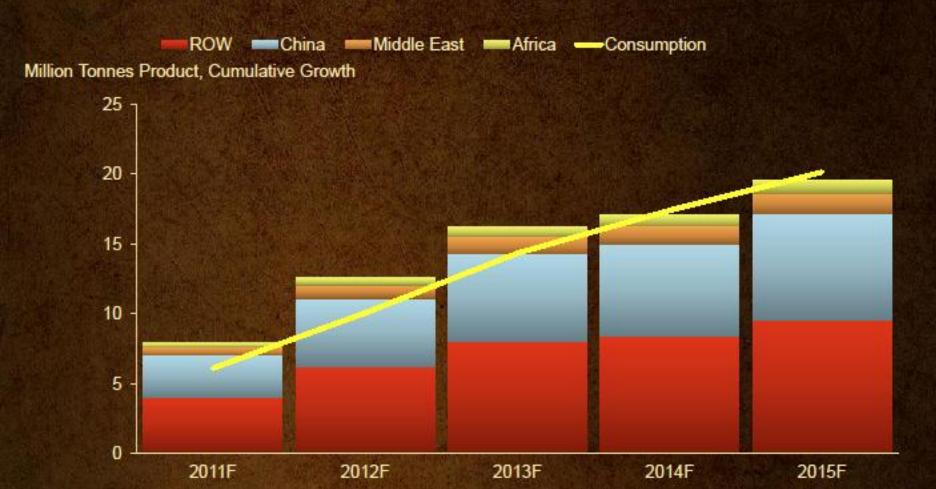


# Nitrogen

- PCS to restart Geismar, LA plant –
   1,135,000 tons of UAN 32% production
- Coffeyville now looking at completing their UAN 32% expansion at Coffeyville, Kansas 350,000 – 400,000 additional per year
- Gas curtailment in Trinidad 30%
  - Production 5,655 Mstpy
  - Curtailment 1,696 Mstpy

# New Ammonia Capacity\* vs Demand

Medium Term Ammonia Market Expected to Remain Balanced to Tight



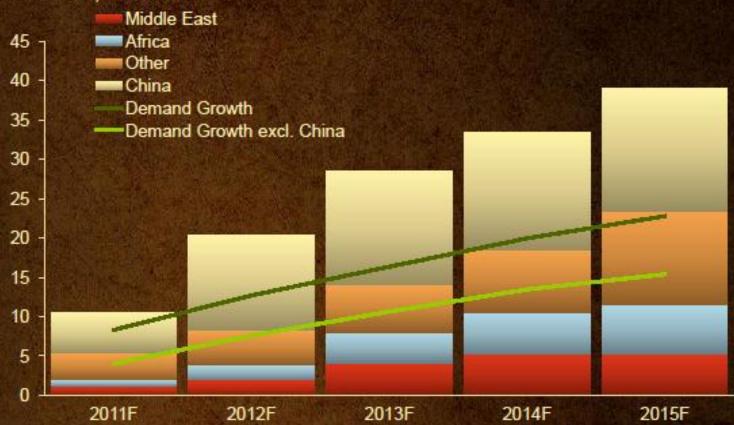
<sup>\*</sup>Capacity includes several projects classified by sources as uncertain, and excludes projects classified as unlikely. Construction time for a greenfield nitrogen plant is 3 years.



# New Urea Capacity\* vs Demand

Near Term Urea Market Expected to be Balanced to Tight, Excluding China





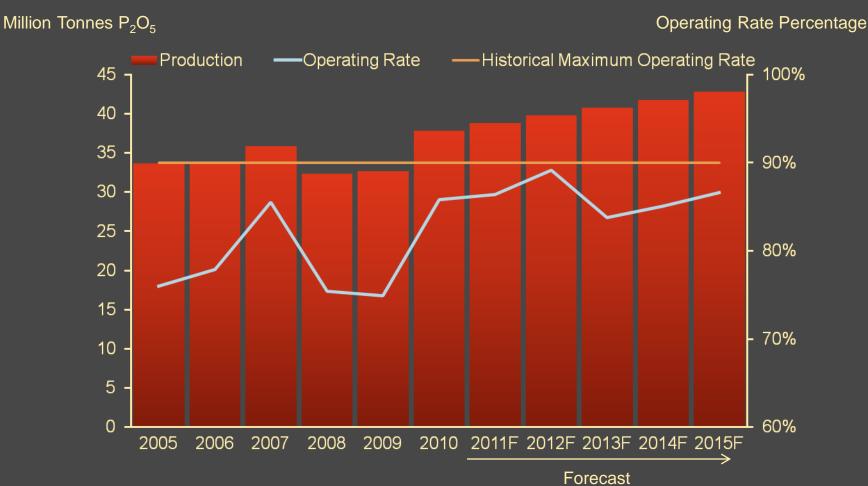
<sup>\*</sup>Capacity includes several projects classified by sources as uncertain, and excludes projects classified as unlikely. Construction time for a greenfield nitrogen plant is 3 years.



# Phosphate Overview

# Global Phosphoric Acid Production and Operating Rate

**Expect Relatively Tight Market in the Short Term** 



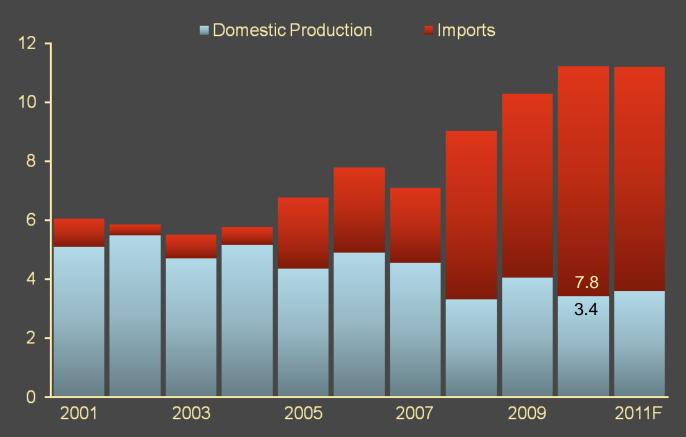
\*Capacity includes several projects classified by sources as uncertain, and excludes projects classified as unlikely

Source: CRU, Fertecon, FMB, PotashCorp

# **India DAP Supply**

# **India's Demand Expected to Remain Strong in 2011**

Million Tonnes DAP

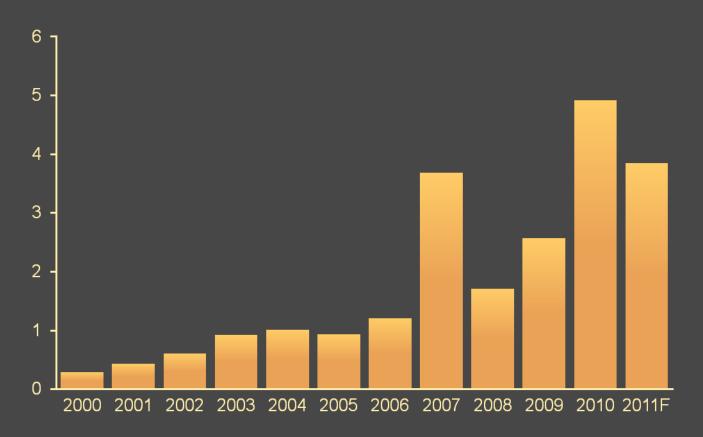


Source: FAI, Fertecon, PotashCorp

# **China DAP and MAP Exports**

# **Domestic demand expected to limit exports**

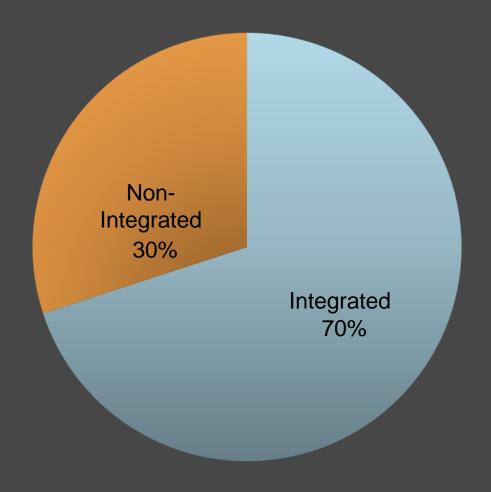
Million Tonnes Product



Source: Fertecon

# Integrated vs Non-Integrated Phosphoric Acid Capacity

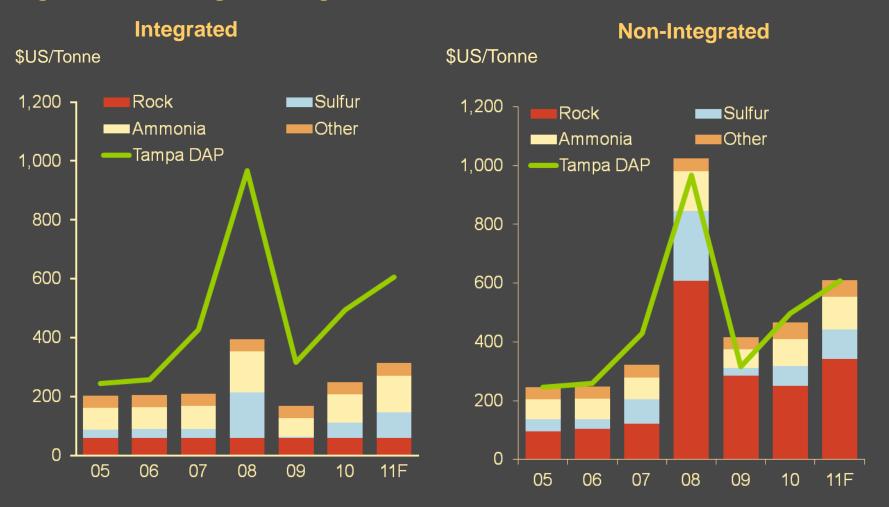
Approximately 70 percent of Global Phosphoric Acid Producers are Integrated



Source: PotashCorp

# Integrated vs Non-Integrated Cost of DAP Production

**Significant Advantage for Integrated Producers** 

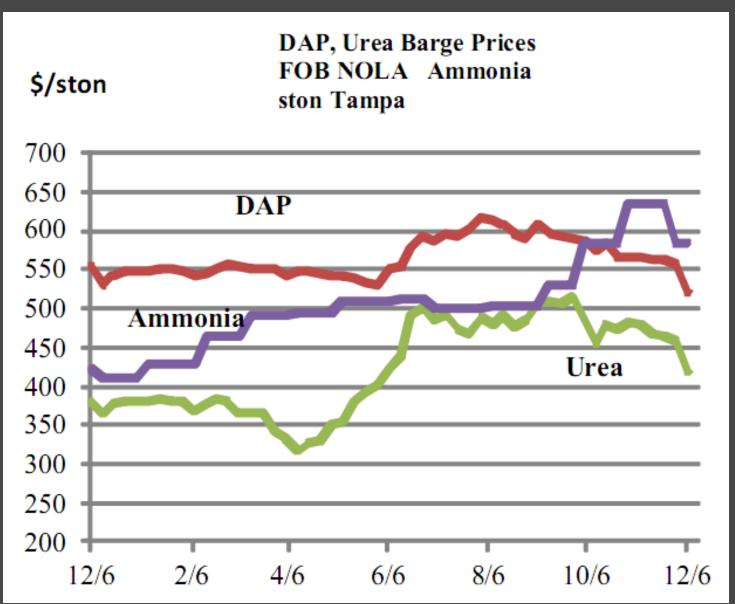


Integrated producers account for approximately 70 percent of production, non-integrated producers account for about 30 percent of production.

Source: Fertecon, PotashCorp

# **DAP Barge Prices FOB NOLA**

\$/ston



# Phosphates

# Production Issues

- Mosaic Permitting Issues in Florida
- Agrifos 800,000 Out of Production
- New production coming on around the world
  - Saudi Arabia
  - Morocco

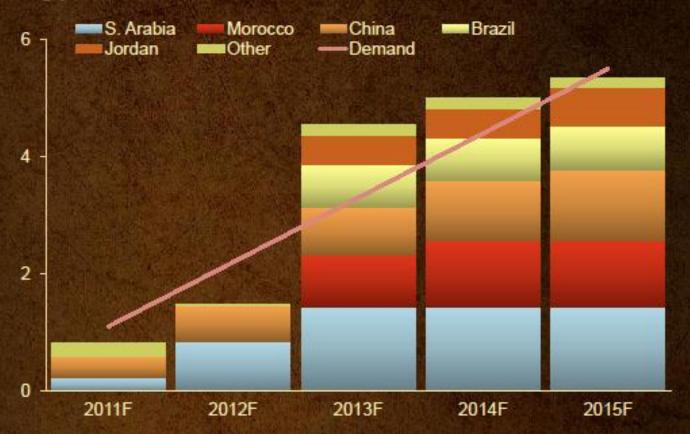
# Phosphates

- Phos Acid / 10-34-0 supply and issue
  - Limited production in the US
  - No opportunities for imports
  - Reduced production in the US
  - Supplies are impacted in the shortrun

# New Global Phosphoric Acid Capacity\* vs Demand

Limited New Phosphoric Acid Capacity Expected Until 2013

Million Tonnes P205, Cumulative Growth



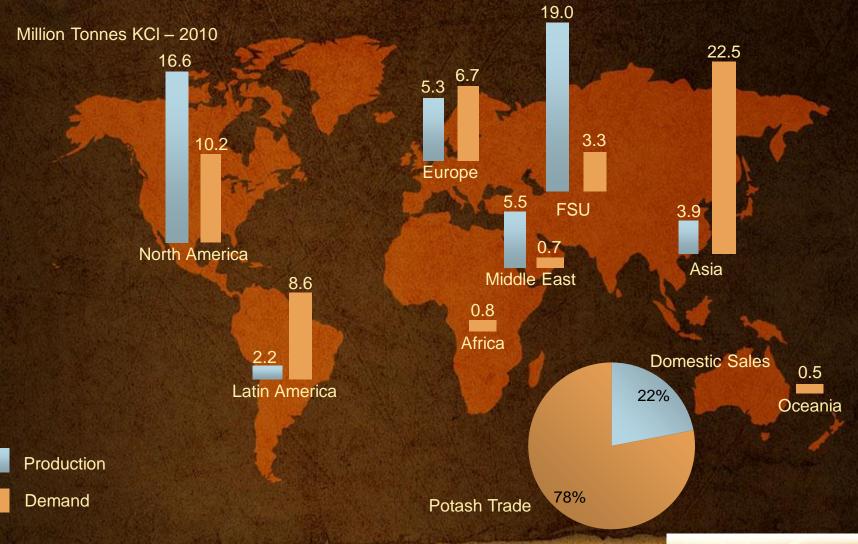
<sup>\*</sup>Capacity includes several projects classified by sources as uncertain, and excludes projects classified as unlikely



# Potash Overview

# **World Potash Production and Demand**

**Major Consuming Markets Are Heavily Dependent on Imports** 

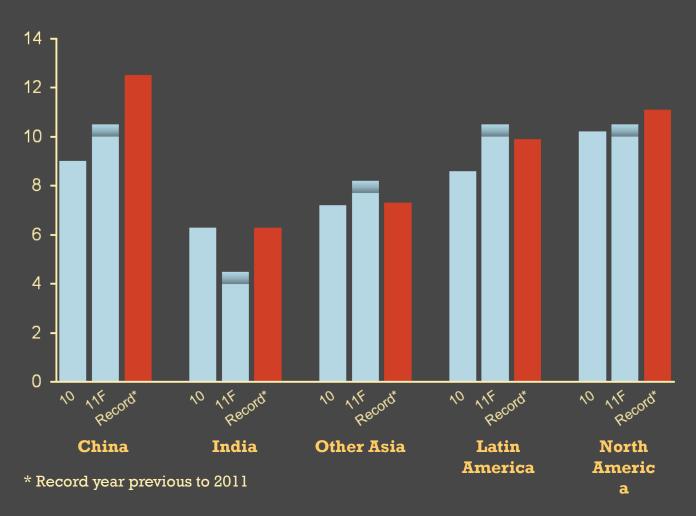




# **Potash Shipments by Selected Market**

**Expect Record Global Demand Despite Reduced Shipments to India** 

Million Tonnes KCl



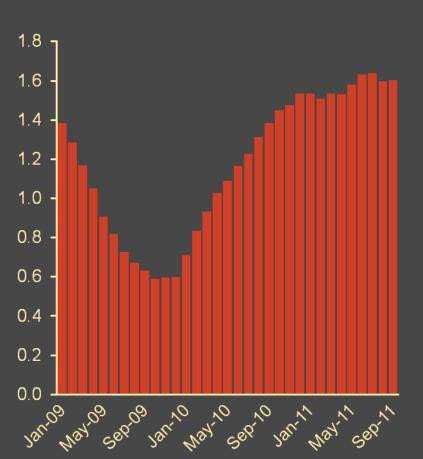
Source: Fertecon, PotashCorp

# North American Potash Producer Shipments and Inventories Strong Demand Has Tightened Inventory Levels

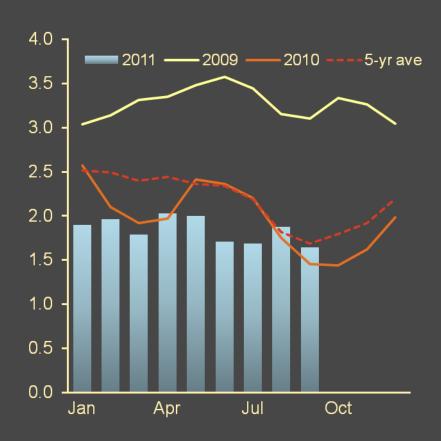
### **Shipments (12-Month Rolling Average)**

### **Producer Ending Inventory**



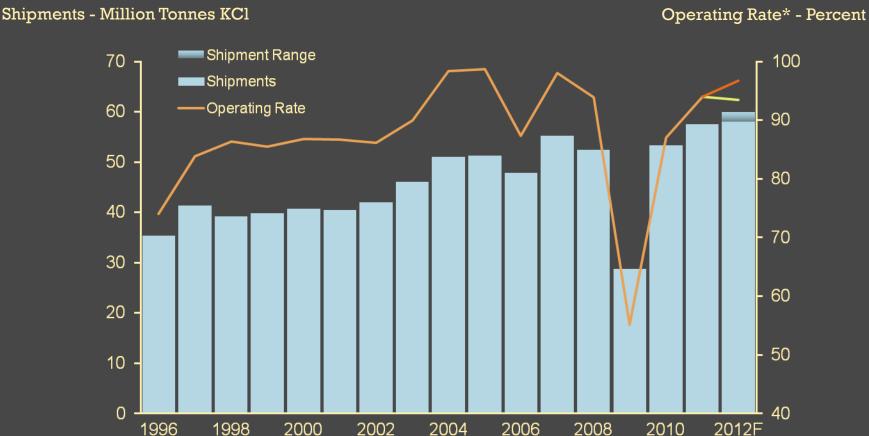


### Million Tonnes KCl



# World Potash Shipments and Operating Rate

**Expect Global Operating Rates to Remain at Historically High Levels** 



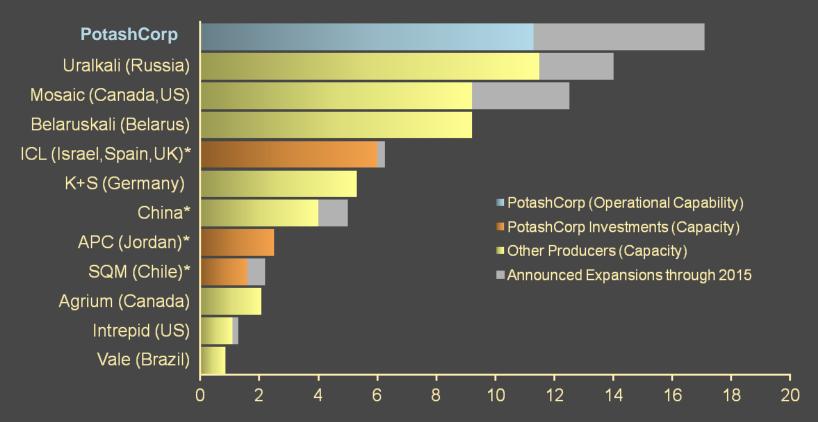
<sup>\*</sup> Based on percentage of operational capability. 2012 operating rate scenarios based on global shipments of 58 to 60 million tonnes

Source: Fertecon, PotashCorp

## **World Potash Producer Profile**

### **Largest Producer by Capacity**

Million Tonnes KCI - 2011F to 2015F



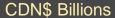
<sup>\*</sup> PotashCorp investments: ICL (14%), APC (28%), SQM (32%) and Sinofert (22%)

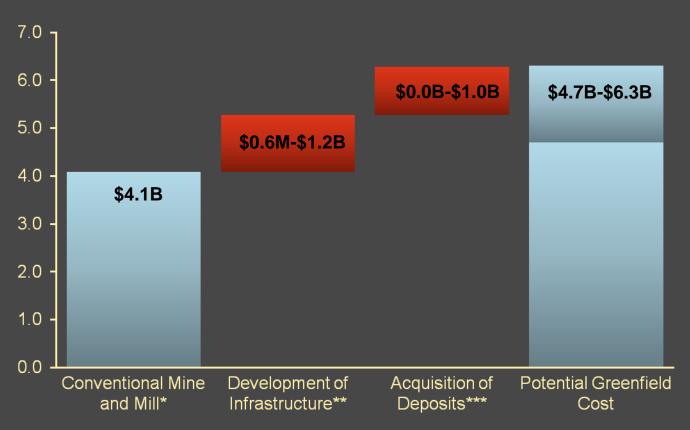
Note: PotashCorp based on operational capability (estimated annual achievable production) while competitor capacity is stated nameplate, which may exceed operational capability.

Source: Fertecon, CRU, IFA, PotashCorp

# **Estimated Greenfield Potash Capital Costs**

### **Greenfield Projects Require Significant Investment**





<sup>\*</sup> Based on 2mmt per-year conventional mine in Saskatchewan; costs could vary depending on conventional vs. solution mine, depth of ore body, geographic location, and other factors.

Source: AMEC, PotashCorp

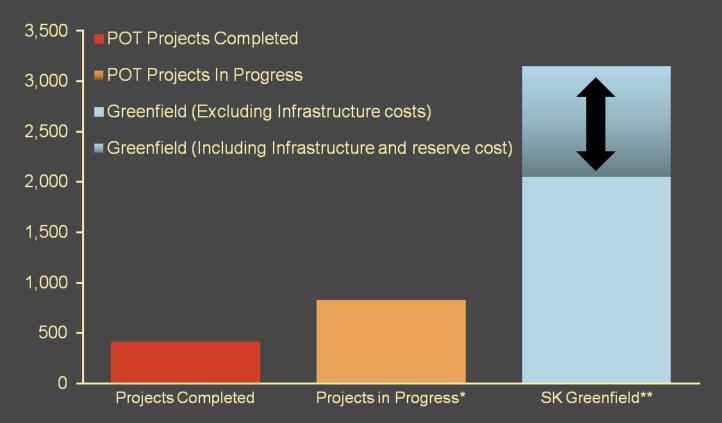
<sup>\*\*</sup> Dependent on geographic location, access and distance to port. Includes railcars, utility systems, port facilities, etc.

<sup>\*\*\*</sup> Based on publicly reported cost of recent purchases.

# Saskatchewan Brownfield and Greenfield Costs

### **Brownfield Expansion Advantage**

Capital Cost per Tonne – (CDN\$)



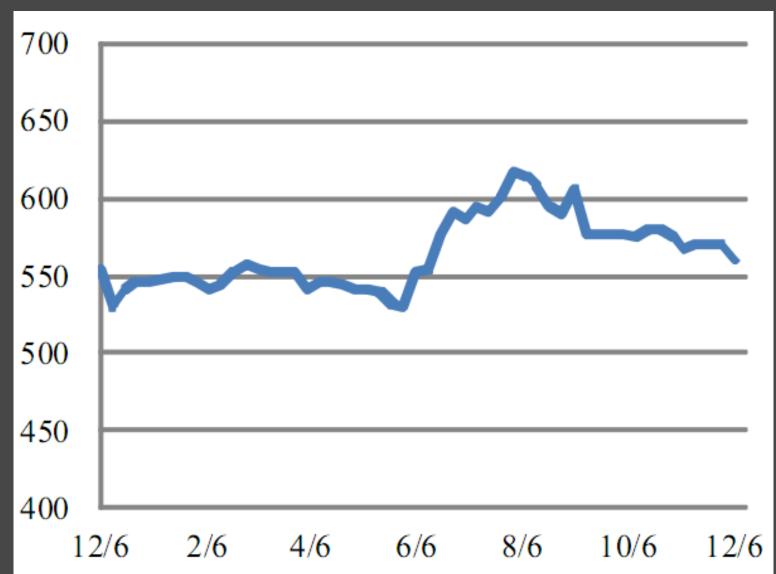
<sup>\*</sup> New Brunswick cost per tonne based on new 2MMT mine (net addition totals 1.2MMT).

Source: AMEC, PotashCorp

<sup>\*\*</sup> Based on 2MMT conventional greenfield mine constructed in Saskatchewan. PotashCorp project costs exclude infrastructure.

# **Potash Price FOB St. Louis**

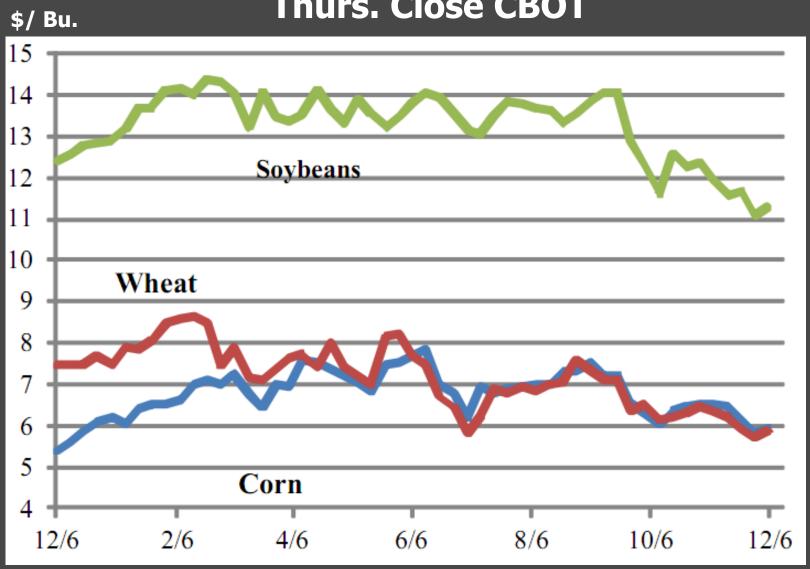




# Potash

- Fall Supply Issues
  - Producers are tying in new production causing outages at existing mines
- Producers moving prices up because they can
- Time will tell if higher prices have an appreciable affect on demand

# Corn, Wheat, Soybean Prices Thurs. Close CBOT



# Fertilizer Market Direction for Spring 2012

- Watch commodity prices if commodity prices fall fertilizer will follow
- Falling commodity prices will cause buyers to be cautious and producers to be concerned
- Move from a demand driven market to a supply driven market

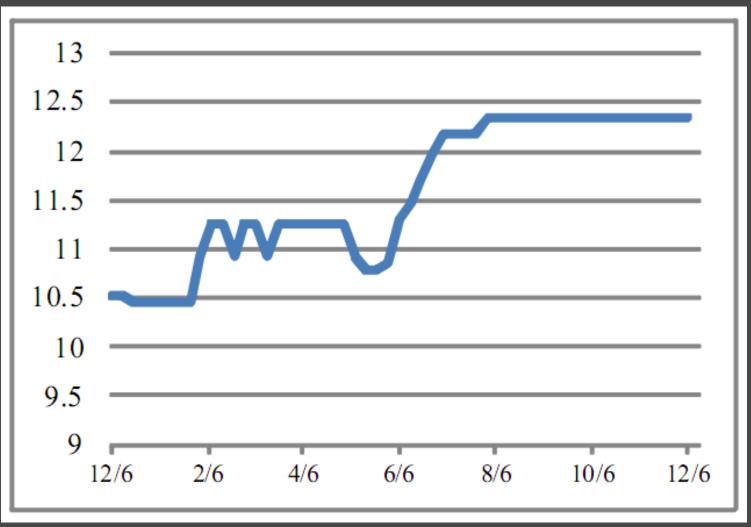
# Questions?



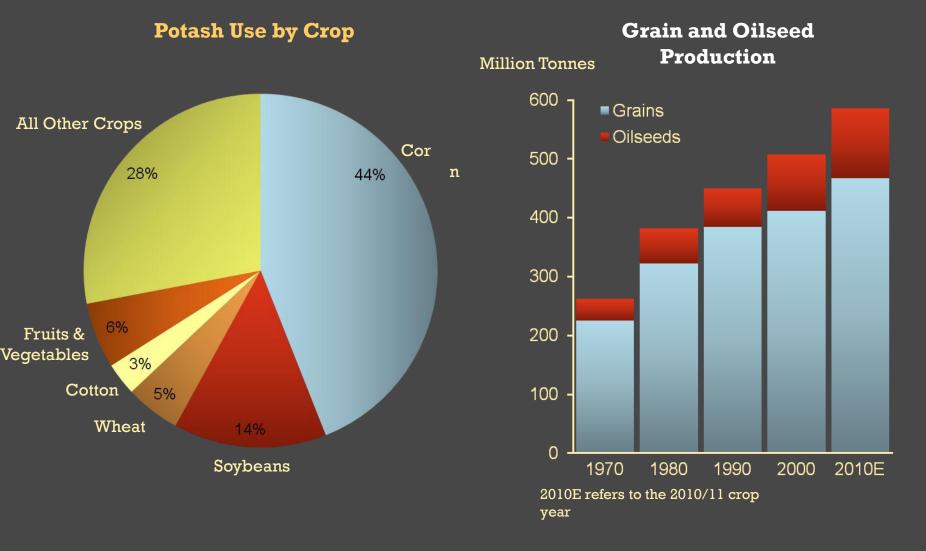
Independent
Agribusiness
Professionals

# UAN Price FOB St. Louis

### \$/Unit N

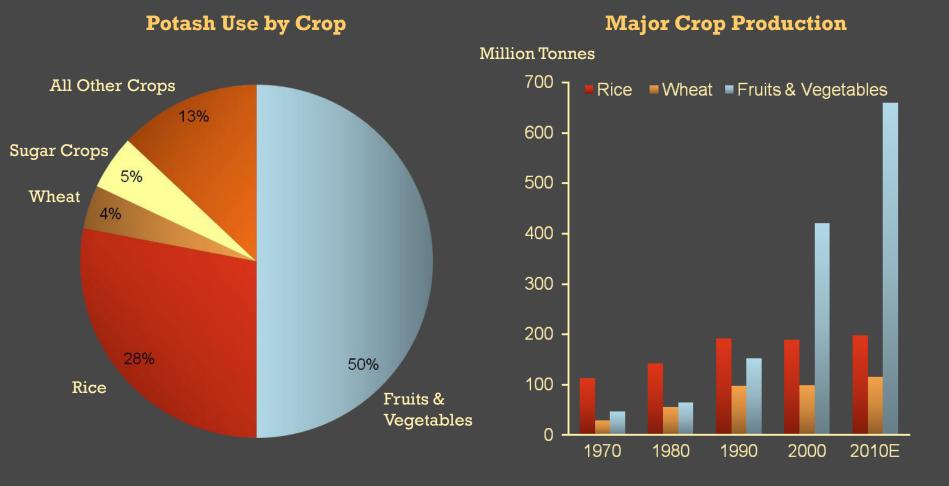


# North American Potash Use and Crop Production Corn Is the Largest Potash Consumer



# China Potash Consumption and Crop Production

Significant Growth in Production of Fruits and Vegetables

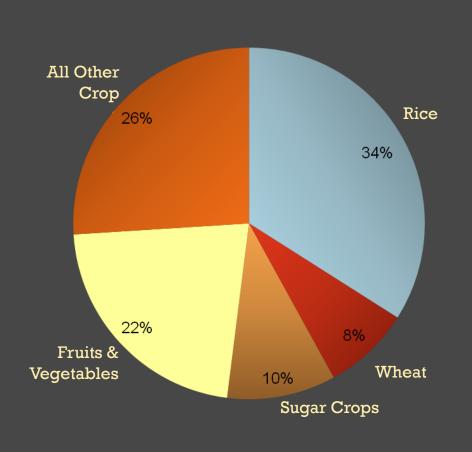


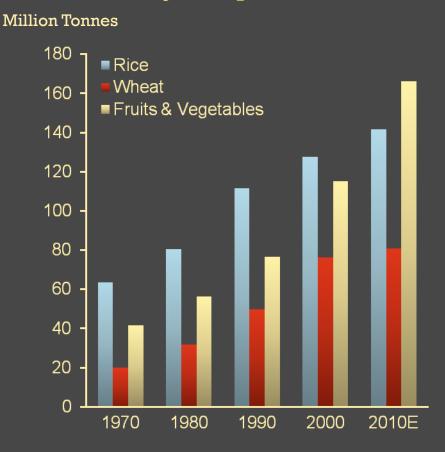
# **India Potash Use and Crop Production**

Rice and Wheat Account for Nearly Half of Potash Consumption

### Potash Use by Crop

#### **Major Crop Production**





Source: IFA, FAO, USDA, PotashCorp