Food correlating Fertilizer

Fertilizer is the single biggest input cost for Grain farmers.

Unprecedented Volatility in fertilizer & grain prices observed during last few years.

Year 2008/2009, fertilizer & food prices hit all time highs & Year late 2009/ early 2010 dropped dramatically.

However, 2008/2009 price movements are not new occurrences.

Similar large price movements occurred in 1970s due to Oil shocks.
Volatility 70s – Historical Prices

Source: World Bank Commodity Price

1970s – Crude Oil price increased from US $1.2 to 13 per barrel in the first Run leading to speculative rise in fertilizer prices.

Steady rise in fertiliser prices was observed during second run of crude from US $13.20 to 40.75 per barrel.
Global food grain prices

Jan 2009.. August 2011

% Increase in prices

<table>
<thead>
<tr>
<th>Jan 2009.. August 2011</th>
<th>Barley</th>
<th>Maize</th>
<th>Rice Thai</th>
<th>Wheat</th>
<th>Sorghum</th>
<th>Sugar</th>
<th>Grain prices major driver of fertilizer prices</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Increase in prices</td>
<td>70%</td>
<td>80%</td>
<td>46%</td>
<td>28%</td>
<td>97%</td>
<td>98%</td>
<td>---------------------------------------------</td>
</tr>
</tbody>
</table>

Source: World Bank Commodity Price

US $
Crude Oil driving Volatility in Urea Prices

Source: World Bank Commodity Price

After sudden increase of 1970-80s, the increase in 2008-09 was very volatile but again it followed a pattern and in 2010-12 it is expected to be gradual.
2008 – Volatility; Crude Oil price increased to US $ 133.9 per barrel (Highest Peak Ever) posing pressure on fertilizer commodities.
Forces driving Volatility

Markets increasingly integrated in the World economy, shocks in the International arena now transpire and propagate to domestic markets much quicker than before.

Crude prices translate to food price volatility through transportation cost & fertilizer prices.

Increased dependency on Global trade also contribute to price volatility.

Political Uncertainty.

Supply Outages and Interruption.

Concentric fertilizer market.

World population growth along with increasing average incomes in developing countries directly impacts the demand for food and indirectly impacts the demand for fertilizer.
Key Forces Driving Volatility in Fertilizers

- Weather & Climate change
- Stock Levels
- Energy Prices
- Growing Demand
- Exchange Rates
- Ocean Vessel Transportation rates
- Resource Pressure
- Export & Import Trade Restrictions
- Speculative activity in Future Markets
Other Factors affecting Demand & Volatility

Fertilizer Demand

- Government policies & regulations
- Incentives and Subsidies to lower Cost
- Credit facility
- Fertilizer: Crop price ratio
- Bio-fuels
- Communication & Extension Services

Besides, regional taxes hinder the farm-gate price and subsequently demand.
Prices climbing up again

World Bank Food Price Index increased by 46% between January’09 and August’11.

Millions of people in the World’s poorest countries are today living on Knife’s edge – the victims of high and Volatile food prices.

Higher the grain prices, farmers shall use more fertilizers leading to higher demand of fertilisers.

Benefits of Globalization are bypassing around 1.5 Billion peoples of the World who are in danger of becoming politically and socially disenfranchised and disconnected from Global society.

Episodes of extreme volatility—especially large, unexpected price upswings—are a major threat to food security in developing countries.
Global Food System Vulnerable

2008 Food crisis led to over 40 riots in many poor countries.

Countries that experienced food riots.

Burkina Faso, Africa  Cameroon  Haiti

Mozambique  Bangladesh  Egypt  Indonesia

Now, with price volatility again a heightened concern, the World Bank’s Board of Executive Directors has extended the life of the food crisis program through June 2011— a move that paves the way for fast-track processing and disbursement of some $760 million for countries in need.

Horn of Africa is drought affected. India is going to give food grain aid to the World Food Programme (WFP) for distribution in Somalia.
Fertilizer Prices Volatility in 2008/2009 – What happened?

- Fertilizer Suppliers begun increasing Prices in a quest for higher profits disproportionate to demand.
- Due to Higher Fertilizer prices, consumption declined & fertilizer prices weren’t sustainable. Inventory started piling up.
- Some players to sustain prices, reduced operational cost by issuing lay-offs notices.
- Stock continued piling up despite declining Prices.
- Prices continued to decline even after and companies opted for curtailing the production capabilities.
- Volatility thus had an impact on fertilizers suppliers & buyers balance sheet.
Volatility-Impact on Fertilizer Industry Profit

<table>
<thead>
<tr>
<th>Year w.r.t.</th>
<th>Inc./ (Dec.)%</th>
<th>PCS (CY)</th>
<th>Agrium (CY)</th>
<th>IFFCO (FY)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>214%</td>
<td>200%</td>
<td>22%</td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td>(72%)</td>
<td>(72%)</td>
<td>8%</td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td>84%</td>
<td>95%</td>
<td>105%</td>
<td></td>
</tr>
</tbody>
</table>

Source: Annual Report
## Effects of Volatility

<table>
<thead>
<tr>
<th>Fertilizers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price Volatility – A growing challenge</td>
</tr>
</tbody>
</table>

- Volatility in fertilizer prices bring extremely high risks and potential costs to society.
- Volatility hurts economic growth and trade.
- Raw material costs generally cannot be transferred quickly and efficiently down the value chain, Volatility thus lead to more unpredictable earning.
- Volatility impacts the organization differently due to variation in technology, product mix, geography and management information.
- Volatile fertilizers prices has a direct effect on farmers as well as impact the earnings of fertilizer companies.
### Effect of Volatility 2008/09 – Indian Context

<table>
<thead>
<tr>
<th>Fertilizers during Recession</th>
<th>Change: Post Recession</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indian Fertilizer Sector was highly dependent on Subsidy by GOI.</td>
<td>GOI introduced Nutrient Based Subsidy w.e.f 01.04.2010</td>
</tr>
<tr>
<td>Subsidy on Phosphatic Fertilisers linked to International DAP Prices.</td>
<td></td>
</tr>
<tr>
<td>Farmers were Insulated from International Prices.</td>
<td></td>
</tr>
<tr>
<td>Despite Increasing fertilizer prices, Demand continued to Grow.</td>
<td>Manufacturers can now pass on the price rise to farmers. However, sharp rise can lead to demand destruction.</td>
</tr>
<tr>
<td>GOI subsidy bill rose to US $ 21 Billion almost doubling the rise thereby affecting the fiscal budget.</td>
<td></td>
</tr>
</tbody>
</table>
Effect of Volatility 2008/09 on Indian Fertilizer Industry

Volatility in fertiliser prices impacted earnings of the Industry.

Despite impact on earnings, IFFCO profitability has grown modestly in 2008-09.

Fertiliser Bonds

- Indian Manufacturers were issued Fertiliser bonds by GOI in lieu of cash subsidy.

- Liquidity crunch compelled major Indian Fertilizer Industry like IFFCO to sell the fertilizer bonds at discounted prices during recession period.
Implementation of Nutrient Based Subsidy – Indian Context w.e.f 1st April 2010

Subsidy prices for P& K are pre-determined & shall remain constant throughout the Financial Year.

Stagnant subsidy prices result in managing the Govt. fiscal Subsidy budget & FX reserves, despite Volatility.

Efficient Contracting by Buyers is Need of the Hour.

Prices beyond NBS level can now have a direct impact on Farmers and Company’s balance sheet.

Further, GOI moving ahead for implementing Nutrient Based Subsidy for Urea & bringing it under Open General License (OGL).

<table>
<thead>
<tr>
<th>Product</th>
<th>Governing Price (2011-12) (US $/Tonne)</th>
<th>Subsidy per kg of Nutrient (US $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urea</td>
<td>350</td>
<td>0.59</td>
</tr>
<tr>
<td>DAP</td>
<td>612</td>
<td>0.71</td>
</tr>
<tr>
<td>MOP</td>
<td>420</td>
<td>0.59</td>
</tr>
<tr>
<td>Sulphur</td>
<td>180</td>
<td>0.04</td>
</tr>
</tbody>
</table>
Volatility and Investments in Fertilizer Sector

2008 effects prompted massive Investments in fertilizer sector.

Since 2008, Sector has spent around US $ 40 Billion on new capacities.

Another US $ 80 Billion will be invested between 2011 & 2015.

Urea capacity to reach 224 Million Tonne by 2015, an increase of 21% over 2011.

DAP capacity to reach 58 Million Tonne by 2015, an increase of 15% over 2011.

Potash Capacity to reach 60 Million Tonne by 2015, an increase of 36% over 2011.

New projects planned between 2010 and 2015.
Managing Fertilizer Prices Volatility

Traditional Management approach of sourcing raw materials are not effective in Volatile markets.

- Traditional strategies are generally ineffective when supply is limited and being chased by many buyers.

Integrated approach involving Procurement and Sales is required in order to manage the net exposure.

Assessment of net exposure involving procurement of several raw materials and sale of many products with different exposure to Volatility, requires complex effort.

Fertiliser Companies can use Price Volatility as a powerful tool in order to manage its impact and at the same time achieve gains.
Strategy to play in Volatile Situations

- During rising market, where companies has limited buying power, procurement should be closely monitored with actual demand/sales.

- In periods of overcapacity, companies has higher leverage to negotiate favorable contracts with suppliers.

- Companies should constantly strive, over multiple cycles, to maintain or improve the earnings.
Effective Strategy to manage Volatile market depends on insight into the direction, both of pricing and supply conditions.

Use of econometric models to build different scenario are required to provide predictive insights into direction of pricing and supply conditions.

Strategies for procurement and sales can be built around these scenarios.

Mix of fixed price contracts, Index based contracts and spot contracts help in managing the Risk.

Shifting to Spot purchases in declining market will be more effective.
Other Measures to Mitigate Volatility

Shifting to other cropping pattern that require less fertilizer, as well as forms of the various products can also ease the Volatility.

Fertilizing below the recommended rate may be a valid temporary strategy when the fertilizer/grain price ratio is higher than usual.

Balanced use of chemical fertiliser along with Green manuring improves the Soil health and reduced fertiliser consumption.

Educating farmers can play an important role in enhancing the productivity with reduced fertiliser consumption.

IFFCO has launched, "Save the Soil" campaign with emphasis on Soil Rejuvenation and Crop Productivity Enhancement.
Buffer stocking can play an aggressive role

Supply in any given location is erratic from year to year; demand is not.

- Reserves provide short-term bridge should supply run-short, while Govt. has a chance to consider some longer-term options.

- Reserves can play a longer-term role in stabilizing prices. (Reassuring markets that supply is sufficient and thereby calming possible speculation).

- Reserves are flexible instrument and can provide for meeting the unexpected demand.
Fertilizer can Grow in Volatile Market

Intense market competition and Volatility can be arrested through JV’s projects.

Joint Venture projects with long term offtake can bring a Win-Win situation for both the partners.

Assured supply Stand-alone long term offtake contracts with major producer of fertilizer and fertilizer inputs.

Acquiring assets & setting projects in Resource rich countries can make available ample fertilizers to meet the growing demand and arresting Volatility.

• JV projects with long term offtake Agreements can lead to a stable market.
Potential for Offtake through long-term/JV agreements – Indian Context

Import (2010-11)

- **N**: 4.49 (Existing Import), 0.86 (JV (Offtake))
- **P**: 3.71 (Existing Import), 1.01 (JV (Offtake))
- **K**: 4.12 (Existing Import)

Import (2013-14)

- **N**: 6.59 (Likely Import), 0.86 (JV (Offtake))
- **P**: 5.0 (Likely Import), 2.24 (JV (Offtake))
- **K**: 4.69 (Likely Import), 0.13 (JV (Offtake))

**Opportunity for possible JV’s**

- **N**: 5.73
- **P**: 2.77
- **K**: 4.56
Balancing the ingredients- Opportunity with Fertilizer

- G-20 recomm. of inviting private investment in farm-to-fork chain shall increase production & yields on the million of small farms in developing nations.

Agriculture Production

- While Fertilizers can arrest the Volatility in Agriculture production & Food prices, a Stable and Transparent system for Trade in Fertilizer can arrest the price Volatility to a certain extent.

Fertilizer Trade

- G-20 recomm. for greater regulation of commodity exchanges to arrest the price shocks.

Food Prices

G-20 recommendation for International policy coordination for “Stable, predictable, distortion-free and transparent system for Trade” would arrest the Volatility.
### Fertiliser Ventures for Global Food Security

| **Food is a basic human right and investment in raising agricultural products through efficient use of fertilizers has to come in future years.** |
| **Need to establish Common ground between the goals of the Global food grain demand and the pragmatic needs of fertiliser companies.** |
| **Set up is required to engage fertiliser companies to drive partnerships and invest in improved crop productivity initiatives to save lives in poor countries.** |
| **Along with, many programs to be modeled by allying fertiliser companies, governments and non-profit organizations to expand affordable access to fertiliser requirement during episodes of extreme Volatility.** |
| **These spearheading efforts can only be achieved by combining fertiliser companies and social responsibility.** |
Profits and Social Responsibility

Fertiliser companies to voluntarily allocate profit in social responsibility initiatives and extend it for “Fertiliser Ventures for Global Food Security” set up.

If every Global corporation took action to address the Global food crisis based on its own unique capabilities, that would be a welcome redefinition of social responsibility, and more important, the problem would soon be solved. The time to act is now- before the food riots of 2008 becomes the new normal.
Cooperation with desire to rise through cooperation in business and user i.e. farmers has lead to growth of IFFCO to make it a successful enterprise.

THANK YOU