Chapter-3

PROFILE OF INDIAN FERTILISERS INDUSTRY

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PROFILE OF INDIAN FERTILISER INDUSTRY

With the advent of renaissances in the early part of the sixteenth century came the inquisitive mind with its discernible, pragmatic and methodological approach in all walks of life. Fertiliser, which was no exception indeed, acquired prominence in the early years of sixteenth and seventeenth centuries, but it was only in the 19th century that purposeful development took place which meant the genetic manipulation of crops, use of chemical fertilizers, pesticides and farm equipment, agri-business and harnessing of power and transportation. That was the real beginning - the beginning of self-reliance, the beginning of confidence in the use of resources and technical know-how. It is universally recognized that economic growth in India has been a function of agriculture. It is not only the key to economic development but also to socio-cultural advancement of the people. It also provides, most important of all, employment to a majority of the people. Every sector of economy is, thus, deeply concerned with its health and advancement¹.

Despite of this fact India agriculture suffers from various deficiencies such as low yield, nutrient deficiency, and imbalanced fertilisation. Rectification of this defect of low per hectare yield of various crops in India needs higher doses of agricultural inputs, which includes technology, quality seeds, pesticides, irrigation facilities, credit and fertilisers. This picture may further become distorted due to growing scarcity of land resulting from constant increase in population. To meet this situation high intensive doses of fertilizers are to be given to the existing land to step up productivity.

3.1. History of Development of Fertilizer Consciousness : As early as 1893, Voelcker in his report on the Improvement of Indian agriculture stressed the importance of increasing supply of plant nutrients to the Indian soil. Fifty years that followed Voelcker's recommendation witnessed establishment of various committees, commissions and researches to probe in to the problem
of has to increase supply of plant nutrients. But the significant recognition to
the problem came in the wake of the second world war when imports of food
grains in the country were adversely affected. The Famine in Bengal in 1943,
compelled the government to launch “Grow More Campaign”. The basic
strategy of the campaign included the increased use of manures and
fertilisers. The remarks of the Famine Enquiry Commission (1943)\(^2\) stressing
the importance of fertilizers in Indian agriculture are significant. The
commission states, “The use of manure offers the most important single
means of increasing the yield of crops. Experience has shown that the plant
food is replaced only through the operation of the natural recuperative power
of the soil assisted by small quantity of manure occasionally applied.
Obviously the fertility of the soil in India has stabilized at a low level. If,
therefore, the yield of crops is to be increased and in particular the full benefit
is to be derived from improved varieties plant food must be added to the soil
in very considerable quantities.”

3.2 Form of Fertiliser Produced in India: Any material furnishing chemical
elements necessary for plant growth is known as fertilizer. Among the plant
nutrients, Nitrogen (N), Phosphorus (P) and Potassium (K) are of primary
importance and are required in large amounts. They are called ‘primary
macronutrients’. Synthetic fertilizers are chemical compounds containing one
or more of primary nutrients- Nitrogen, Phosphorus and Potassium.
Multination fertilisers having two or more of these elements are commonly
known as ‘mixed fertilisers’. MPK complex fertiliser contain all the three
elements in varying proportions.

In the development of Fertilizer Industry, India occupies a unique place
on the world map since there is perhaps no other country which has such a
mix of raw-materials used in the production of fertilizers and adopting a variety
of technologies and processes. Fertilizer production in India covers a wide
spectrum of nitrogenous, phosphatic and mixed fertilizers\(^3\).
The forms of fertilizers produced in India can be viewed from the following:

a) Nitrogenous Fertilizers
   i) Ammonium Sulphate;
   ii) Ammonium Chloride;
   iii) Ammonium Sulphate Nitrate;
   iv) Calcium Ammonium Nitrate (CAN).

b) Phosphatic Fertilizers
   i) Bone Meal;
   ii) Single Super Phosphate (SSP);
   iii) Triple Super Phosphate (TSP).

c) Mixed (NP/NPK) Fertilizers
   i) Ammonium Phosphats Sulphate;
   ii) Di-Ammonium Phosphate (DAP);
   iii) Urea Ammonium Phosphate (UAP);
   iv) Nitrophosphate;
   v) NPK Grade Fertilizers.

3.3 Fertiliser Industry in India: The fertilizer industry in India is comparatively of recent origin. Though the year 1906 marked the beginning of the production of synthetic fertilizers with the installation of the first superphosphate plant at Ranipat (Tamil Nadu), very little progress was made in setting up of fertilizer capacities during the first half of this century. The only medium scale plant which came up during this period was that of FACT, Alwaye, (Kerala), to produce Ammonium Sulphate.

The real era of fertilizer production in India started only after independence. During the period 1951-61 four large scale fertilizer plants went in to production. These were Sindri plant in Bihar (1951), New Central Jute Mills, Varanasi in U.P. (1959), FACT, Alwaye phase-1, Kerala (1960) and Nangal plant in Punjab (1961). The Government of India established the
Fertilizer Corporation of India in January, 1961 to take over the management of Sindri and Nangal factories. Four Single Super Phosphate (SSP) units were also established during this period. During 1962-70 the fertilizer industry in India made considerable progress. The FACT, Alwaye-phase-II and phase-III; the fertilizer Corporation of India's- Trombay (1965), Gorakhpur (1968), HSL-Rourkela, EID-Parry-Ennore, GSFC-Baroda, Coromandal Fertiliser Limited (CFL)- Vizag, IEL- Kanpur and SCI- Kota went in to production during this period. Besides these major units, one triple super phosphate and thirteen single super Phosphate units also went in production during this period.

Much more noticeable progress was made by the fertilizer industry during 1971-80. The Madras Fertilizer Limited (MFL)- Manali, Zuari Agro Chemicals Limited (ZACL)- Goa, HFC- Durgapur and Barauni Units, IFFCO- Kalol and Kandla, SPIC- Tuticorin, Mangalore Chemicals and Fertiliser Limited (MCFL)- Mangalore, FACT- Cochin Phase I and Phase II, FACT- Alwaye Phase IV, FCI- Ramagundam and Talchar Units, NFL- Panipat and Bhatinda units, Nangal expansion and RCF- Trombay IV and Kothari- Madras were all commissioned during this period. Expansion of Sri Ram Chemicals Industries- Kota, CFL- Vizag, FCI- Gorakhpur, GSFC- Baroda and BFC- Namrup were also done during this period. CFL- Vizag, MFL- Manali and RCF- Trombay completed their debottlenecking operations. Sindri plant was recommissioned after modernisation, Neyveli switched over from lignite to fuel oil and the Trombay units switched over to natural gas. In addition, sixteen SSP and two TSP units were commissioned during this period. The Fertilisar Industry forged ahead during the period of 1981-82, Phulpur unit of IFFCO and GNFC- Bharoach were commissioned in this period. The expansion of Panki Unit of IEL, Kalol and Kandla-IFFCO and Trombay- RCF went in to commercial production during this period. Two SSP units were also established.

The industry is divided into the Nitrogenous, Phosphatic and Potassic segments, or NPK. These and other nutrients are combined to produce a...
range of complex fertilizers. Urea (nitrogenous) is the most widely consumed in India. Current urea capacity is 20.2 million tpa against a consumption of 21.7 million tpa, growing at about 4% p.a. The nitrogenous fertilizer segment is regulated through price controls. The government fixes two prices: the price at which the manufacturers should sell to the farmers and the retention price, which the manufacturer should have received from the farmer. The government reimburses the difference in the selling price and the retention price in the form of a subsidy. However, the fertilizer ministry has decided to decontrol urea completely in three phases by FY07. The transition period will be used to gradually reduce subsidy by increasing the selling price at regular intervals thus making the cost competitiveness of domestic urea units critical. The total production of phosphate was million tpa in FY00. The main phosphatic fertilisers produced in India are Diammonium phosphate (DAP) and Single Super Phosphate (SSP). However, the entire requirement of potassic fertilizers is imported (mainly Muriate of Potash (MOP)).

Fertilizer production is highly energy intensive with the cost of feedstock and fuel combined accounting for 55% to 80% per cent of the cost of production. Plants in India are based on three types of feedback – naphtha, fuel oil/LSHS and natural gas. With increasing use of gas in other industries like power and petrochemicals, the fertilizer industry is facing a shortage of gas. Between 1980 and 2000 while the landfall prices of gas have gone up nine times, urea prices have increased only three times. The industry relies heavily on imports for its requirement of raw material; hence any devaluation of the rupee could inflate its import bill. Since the N-based fertilizers are protected by the retention price system (so far), the increased costs will affect P and K fertilizer manufactures.

India is today, the third largest producer and consumer of fertilisers in the world. There are 64 large sized fertilizer units in India, manufacturing a wide range of nitrogenous and phosphoric complex fertilizers. Of these, 39 units produce urea, 18 units produce DAP and complex fertilizers, seven units
produce low analysis straight nitrogenous fertilizers. Several of these produce ammonium sulphate as a by-product. Besides, there are about 79 small and medium scale units producing single superphosphate. The total installed capacity of fertilizer production in the country has risen to 110.71 lakh tonnes of nitrogen and 36.48 lakh tonnes of phosphate.

Future Prospects: The Indian fertilizer industry is at the crossroads today, faced with uncertainty over Government policy, rising input costs and liquidity crunch on account of delays in subsidy disbursals. The Indian fertilizer industry in concerned with supplying the nitrogen (N) and phosphate requirements (P) of crops. The entire demand for potash (K) is imported. The principal nitrogenous fertilizer in the country is urea contributing to roughly 85% of total N consumption. P is supplied primarily by di-ammonium phosphate (DAP) and single super phosphate (SSP).

The urea segment of the industry is likely to be affected by significant changes in Government policy in the medium term. These changes can be broadly categorized into two types- those that affect profitability by modifying the current rules of composition and the more fundamental ones that replace the existing rules themselves. The principal change in the first category is the upward reassessment of capacity of urea manufacturers in the country. Currently urea is the only fertiliser whose pricing is controlled by a cost plus subsidy scheme called the Retention Pricing Scheme (RPS). The RPS seeks to guarantee the urea manufacturer a 12% return on net worth. Till now the imports of urea have been subject to quantitative restrictions (QRs). Urea is imported by designated State agencies based on estimates of domestic demand and production.

The cost competitiveness of urea units in a liberalized scenario for imports is a function of two factors the domestic cost of production and the international price of urea. An important reason for domestic cost of production being high in India is that a significant proportion of domestic of
domestic capacity is naphtha or fuel-oil/LSHS based. The cost of these feedstock's is much higher than natural gas, on which most of the global capacity is based. Since raw material and power and fuel costs form around 64% of the sales revenues of the Indian fertilizer industry, higher feedstock costs seriously undermines the cost competitiveness of domestic players. The situation is worsened by the fact that the international prices of urea are at low levels because of excess capacity. The excess capacity is caused on the supply side by the diversion of domestic output to the export market by the economies of the Former Soviet Union (FSU) following collapse of domestic demand and on the demand side, by the significant decline in imports by China and India.

The Government has recently announced a roadmap to deregulation for the urea sector. Liquefied Natural Gas (LNG) will be the favored feedstock of the future. The unit-wise RPS will be replaced by a group-pricing scheme. The Long Run Marginal Cost Method (LRMC) as outlined in the Hanumantha Rao Committee (HRC) Report will be the basis for setting the realizations to individual manufacturers. As recommended by the HRC, a normative referral price (NRP) will be calculated and the difference between the NRP and the selling price will be the subsidy paid to each manufacturer. The NRP will be calculated with respect to gas-based plants. Thus, unlike a unit wise scheme, the proposed scheme will reimburse fixed amount to each manufacturer. However, the naphtha and fuel-oil/LSHS based plants will get an additional amount as Feedstock Differential Cost Reimbursement (FDCR) for a period of 5 years, during which they are expected to switch over to LNG. There would be one single rate of concession on urea across all units irrespective of feedstocks by the end for the year 2005. However, the amount of the FDCR has been fixed yet. The FDCR in addition to the import duty committed by the Government will determine the competitiveness of the naphtha and fuel oil/LSHS based urea unit in the medium term. Even if LNG becomes available, industry estimates indicate a cost of $4.5 to $5 per mmBtu, which though 20% cheaper than naphtha is doubles the cost of gas along the HBJ
pipeline. Thus even with LNG, the domestic urea industry is likely to be at a significant disadvantage with respect to overseas gas-based manufacturers.

The phosphatic segment of the industry (along with potassic fertilisers) was decontrolled in 1992. The distribution of phosphatic, Potassic and complex fertilisers is decontrolled and imports are decanalised. While these fertilizers are subsidised, unlike in the case of urea, it is not unit specific scheme. A flat rate of concession per tone of output is fixed for all manufacturers. Whole P fertilizer production is not energy intensive like the manufacture of N fertilisers, the former is highly raw material intensive. While SSP is not imported, DAP, is imported by India in significant quantities. The concession on indigenous DAP is higher than that on imported DAP, which keeps the Indian industry competitive. The differential concession acts as a king of Import duty. However, even this differential cannot prevent DAP imports from being relatively more profitable when the international prices fall sharply. Since DAP imports are reanalyzed and there is no apex body to coordinate the imports competing with local supplies, whenever international prices fall. The two key issues facing this sector in the medium term will be the global prices of DAP and the cost of raw materials. The Global price of DAP has shown remarkable stability in the last few years because of the oligopolistic nature of the supply side. However, fresh capacity in Asia and Australia (the principal among the new projects is the largest SAP plant in the world set up by Oswal Chemicals and Fertilizers Ltd.) could result in an excess supply situation, putting downward pressure on prices and increased competition from imports for domestic manufacturers. To some extent this will be moderated by the fact that the concession on imported DAP has been substantially reduced for FY2001 and this will provide some comfort to the domestic manufacturers.

3.4 National Fertilisers Limited : Snapshot - National Fertiliser Limited was registered on 23.08.1974 with an authorized capital of 500 crores and a capacity of 10.36 lakhs MT Nitrogen. The company is indulged in
manufacturing chemicals and Bi-Products as well as to provide the allied services. The company has its units in various places like Nangal, Panipat, Bhatinda & Vijaipur.

**Nangal Unit**: Nangal unit produces Nitrogen including Industrial Nitrogen. The present capacity utilization of this plant is 114.69%.

**Panipat Unit**: This unit produces Urea as well as Nitrogen with a capacity utilization rate of 109.92%.

**Bhatinda Unit**: Bhatinda unit produces Urea and Nitrogen with a capacity utilization of 110.92%.

**Vijaipur Unit**: This unit produces Urea and Nitrogen with a capacity utilization of 120.41%.

**Finance**: Being a public sector NFL gets budgetary support from Government of India, but a loan of Rs. 50 crores has been raised from Bank of America for financing the project of Argon Recovery Plant at Panipat, Revamping of Methanol plant at Nangal and Noida office complex.

**Performance**: The sales turnover during the year was Rs. 2943.13 crores showing an increase of 4.78% over the previous year. The net profit before taxation for the year is Rs. 48.33 crores as compared to Rs. 19.67 crores for the previous year. The profits have shown an upward trend because of higher production and decrease in interest, salary & wages and repairs & maintenance. The Sundry Debtors (Net) have come down from Rs. 540.47 crores as on 31st March 2001 to Rs. 513.85 crores, as on 31st March 2002. During the year foreign exchange earning of the company has been Rs. 1.99 crores whereas output was 2.48 crores for the reason like design, engineering procurement, license and know how etc.
Future Plan: Company is planning for replacement of mechanical governors with electronic governors for major compressor drives at Nangai, Panipat & Bathinda, and change over of CW Pump Turbine with motor at Vijapur-I to improve energy consumption. Besides the company also involved in Bench Marking, which has been taken up by FAI for Fertiliser Industry.

3.5. Deepak Fertilisers and Petrochemicals Corporation Limited: Snapshot- The Deepak Group of industries was born in 1970 when Mr. C. K. Mehta set up Deepak Nitrite Ltd., combining his skills in trading and manufacturing. In 1983, Deepak Fertilisers and Petrochemicals Corporation Limited (DFPCL) started commercial production of ammonia (in technical collaboration with Fish International Engineers (USA)) using natural gas as feedstock. This marked the fulfillment of a need for lateral integration into the world of basic building block chemicals, premium fertilizers and petrochemicals. The company undertook major expansion and diversification in 1989 to achieve forward integration of ammonia and diversification in Methanol. In July 1992, DFPCL commenced commercial production of Low Density Ammonium Nitrate (LDAN), Nitro Phosphate (NP), Dilute Nitric Acid (DNA), and Concentrated Nitric Acid (CAN). DFPCL's business can be broadly categorized into the following division:

**Agri-Inputs Marketing**: This division of DFPCL manufactures 23:23:0 markets Mahadhan through a network of over 1000 dealers. Due to the company's rigorous adherence to quality, Mahadhan is one of most widely accepted fertiliser brands in India.

**Industrial Chemicals**: This Division of DFPCL manufactures Methanol, various grades of Nitric Acid and Ammonia.

**Ammonium Nitrate**: The explosives division manufactures Low Density Ammonium Nitrate, which is used for making Ammonium Nitrate-fuel oil (ANFO), blasting agents and also emulsified ANFO (HANFO).
**Crop Science Division**: This division has set as its goal, task of boosting the Indian Agriculture Sector to face competition brought in by the WTO regime. It has contributed immensely to the farmer community by introducing better hybrid seeds and fertilisers like Power, Chetak, Bhoodhan and Potash. In addition, DFPCL provides soil, water and petiole testing and provides necessary advice to farmers regarding the nutrition requirements of different crops.

DFPCL has a strong marketing and distribution network for bulk fertilizers and chemicals. This has a widespread and loyal dealer network, especially in some specific areas like Maharashtra, Gujarat, Karnataka and Andhra Pradesh.

**Finance**: Share holding pattern of DFPCL is consists of 84.24 percent from domestic sources 10.01 percent from Financial Institution, and 5.75 percent from GDR.

**Performance**: With an aggressive approach and outsourcing of Ammonia, though at a higher cost, this company was able to cover substantially its market share in the primary market of Maharashtra, despite stiff competition, due to the strong brand image "Mahadhan". The production during the year also registered a growth of 25% over the previous year. However, the overall demand for fertilizer during the year was sluggish. An overview the total income of the company during the year under review has gone up marginally to Rs. 512.27 crores from Rs 489.99 crores of the previous year. The operating profit fro the year has dropped to Rs. 117.94 crores from Rs. 147.20 crores of the previous year. The profit after tax dropped to Rs. 48.64 crores from Rs. 62.70 crores of the previous year.

**Future Plan**: In order to enhance capacity, company has pursued the option of increasing the plant capacity through debottlenecking at marginal investment. In order to mitigate shortage of gas, the company is setting up

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storage tank for imports of Ammonia at JNPT Terminal at Nhava-Sheva in the State of Maharashtra. Besides, your company is also activity evaluating various PSU disinvestments proposals especially those, which will have synergy with the existing business. Developmental effort of making soluble fertilizer on large scale is under consideration to establish repeatability and control.

3.6 Indo Gulf Fertilisers Limited : Snapshot- Indo Gulf was incorporated on 28th Oct. 1983 to set up the facilities for manufacturing urea at Jagdishpur Industrial Area of Sultanpur District. M/s PICUP a Govt of U.P. undertaking along with M/s Gulf consolidated company promoted the company for services and industries (GCSI). Aditya Birla Group stepped into this project during April 1986 and bought 29% equity share from GCSI, Visualising tremendous growth potential of urea fertilizers. The factory is located in the heart of the Indo Gangetic Plain on a land admeasuring 833 acres with a licensed capacity to manufacture 1350 tpd of Ammonia and 2200 tpd of Urea. Trial production commenced on 7th October 1988 and commercial production from 1st November 1988. The market's Urea is marketed under the Brand Name "SHAKTIMAN".

Urea is a controlled commodity, therefore the production, distribution and pricing is controlled by the Govt. of India under the Essential Commodities Act Vide the Fertiliser Control Order promulgated under this act, the Government allocates the geographical area and the quantity to be sold in each season. From inception, the company has been allocated U.P., Bihar and West Bengal as major states where it can sell the allocated quantity. Smaller quantities have been allocated for states of Punjab, Haryana and Orissa. The customers of urea are farmers who can be approached by two channels. The first is the institutional agencies and the other one is private trade channel. The company has adopted the private trade channels to reach the farmers and has appointed wholesalers and a credited retailer.
Performance: The "Cap" on production in Fertiliser Business is seriously impairing asset utilization while reduction in Retention Price is virtually crippling the profitability of the business. In the face of declining revenues company has managed not only to arrest the fall in profitability, but, in fact, enhance it. IGFL ended 2001, 2002 fiscal with a 23 percent growth in turnover and a 20 percent rise in net profit, despite sluggish demand and industrial slowdown. This has been accomplished only through incessant and all-around cost optimization measures coupled with innovative steps taken to bring about a quantum reduction in energy consumption for manufacture of Fertiliser.

Finance: The share holding pattern of IGFL involves 37.75 percent as promoters holding, 28.43 percent as share of Institutional investors and remaining 33.82 percent have come from corporate bodies, Indian public, Euro issue (GDRS) and NRIs etc.

Future Plan: Indo Gulf Fertilisers Limited (IGFL), is planning to set up a de-ammonium phosphate plant at Dahej in U.P. The company plans to manufacture DAP from sulphuric acid will be used in the production of Phosphoric acid, which in turn will be used in the manufacture of DAP. The production of phosphatic fertilizers in India is pegged at 25 lakh tonne while the consumption stand at 30 lakh tonne of phosphetic fertilisers.
Reference:

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