A REVIEW

Indian agro input industry

C. KAVYA, K.L. SOWMYA SHREE AND G.N. NAGARAJA

ABSTRACT

India requires a robust, modernized agriculture sector to ensure the food security to its population. In order to meet the food grain requirements, the agricultural productivity and its growth needs to be sustained and further improved. It is imperative to manage critical inputs and resources like cultivable land, irrigation, agro-chemicals includes; pesticides and fertilizers as also plasticulture for higher food production. The past year witnessed reasonably good minimum support prices and open market prices for several crops. All these factors point to reasonably good growth prospects for agriculture and by logical extension, for the agro-input industry. The global crop protection market is estimated to have grown at 25 per cent, reaching $41 billion with nearly 10 per cent volume growth. The level of agricultural output depends on the availability of quality inputs at an affordable price. Agri input industry which consist of seeds, fertilizers, agro-chemicals and farm machineries are comparatively better organized and Government policies helped in the growth of seed industry, inability competitor among the companies.

KEY WORDS: Agro input industry, Seed industry, Fertilizer industry

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AGRICULTURE which accounts for one fifth of GDP, provides sustenance to two thirds of our population. Besides, it provides crucial backward and forward linkages to the rest of the economy. Successive five-year plan have laid stress on self-sufficiency and self reliance in food grain production and concerted efforts in this direction have resulted in substantial increase in agriculture production and productivity. This is clear from the fact that from a very modest level of 52 million MT in 1951-52, food grain production rose to about 259.32 million MT in 2011-12 (Source: Indian Economic Survey Report-2012-13). In India’s success in agriculture sector, not only in terms of meeting requirement of food grains but also generating exportable surpluses, the significant role played by chemical fertilizers is well recognized and established. Indian agriculture is at crossroads and one of the major challenges is to reverse deceleration in agricultural growth. Main reason for deceleration in agricultural
growth is declining investment particularly public
investment in agriculture research and development and
irrigation, combined with inefficiency of institutions
providing inputs and services including rural credit and
extension. Other factors such as land fragmentation, out-
dated tenancy laws, lack of modern market and rural
infrastructure, inappropriate input pricing policies, etc.
are also responsible for agrarian and ecological crisis in
the country (Sharma, 2007).

With nearly 1.2 billion population, India requires a
robust, modernized agriculture sector to ensure the food
security to its population. Scope for further increasing
cultivable land is limited. In order to meet the food grain
requirements, the agricultural productivity and its growth
needs to be sustained and further improved. It is
imperative to manage critical inputs and resources like
cultivable land, irrigation, agro-chemicals includes;
pesticides and fertilizers as also plasticulture for higher
food production. Balanced use of fertilizers, based on
the soil conditions as also judicious usage of pesticides
will certainly improve the agricultural productivity in India
(3rd National Agro-chemicals Conclave, 2013).

In a global economy battling recessionary pressures,
the Indian economy too witnessed a slowdown in growth
in the past year. However, India’s rural economy
remained virtually unscathed, in part due to the country’s
almost autonomous agricultural sector. With a large rural
population base dependent on farming and allied
industries, agriculture continues to be the priority area
for the Indian government. The past year witnessed
reasonably good minimum support prices and open
market prices for several crops. All these factors point
to reasonably good growth prospects for agriculture and,
by logical extension, for the agro-input industry.

While companies in industries ranging from telecom
to consumer goods benefited from their rural forays, the
success of the purely rural companies was more visible.
Companies that predominantly cater to the rural market-
fertilizers, agro-chemicals, producers of farm inputs such
as tractors or irrigation systems-made a strong showing.

The domestic demand for fertilizers grew by 11 per
cent in Financial Year (FY) 2009, as against a 2.2 per
cent decline globally. In spite of the strong demand, the
domestic fertilizer production continued to stagnate for
reasons such as limited availability of natural gas and
plant shutdowns. Several fertilizer companies, including
Coromandel Fertilizers, Zuari Industries, Fertilizer and
Chemicals Travancore (FACT) and GSFC, more than
doubled their reported profit numbers as compared to
the previous year.

Endorsing the performance of soil nutrients industry,
the crop protection and seeds industries too had a
reasonably good year in Financial Year (FY) 2009. The
global crop protection market is estimated to have grown
at 25 per cent, reaching $41 billion with nearly 10 per
cent volume growth.

In India, however, although the market expanded
by over 10 per cent, there was a marginal fall in volumes.
Nevertheless, the industry leaders fared well. United
Phosphorus reported a strong 61 per cent jump in its net
profits-to Rs.147.7 crores-following an equally strong 65
per cent growth in net sales to Rs.2327.4 crores. Rallis
India, too, expanded its operating profits by 83 per cent
to Rs.119.5 crores.

Agricultural input companies, whose entire business
models are designed to deliver technological innovations
to farmers, have a unique and central role in delivering
food security to the world. Agro-industry, understood here
broadly as postharvest activities involved in the
transformation, preservation and preparation of
agricultural production for intermediary or final
consumption, typically increases in importance with
regard to agriculture and occupies a dominant position
in manufacturing as developing countries step up their
growth. In all developing countries population growth is
becoming predominantly an urban phenomenon,
increasing the role of agro-industry in mediating food
production and final consumption. While many long-
standing commodity exports have declined in importance,
‘non-traditional’ food exports, especially fruits,
horticulture and fish products, and components of the
animal protein complex, have become central to
developing country exports. Whether looked at from the
point of the domestic market or exports, therefore, agro-
industry plays a fundamental role in the creation of income
and employment opportunities in developing countries
(John and Rudi, 2009).

Indian seed industry :

World seed market is about Rs. 2,20,000 crores.
Indian seed market size is about Rs. 9000 crores. The
seed replacement rate in most of the crops is very low,
with the exception of cotton and some other vegetables.

The total size of Indian Seed Industry is worth about
Rs. 8000 – 9000 crores. Private sector accounts for 70 per cent turnover in seed industry. Almost 1/3 companies have a global technology/financial partner. Private seed companies are spending 10 – 12 per cent of their turnover in research and development (R and D). R and D budget of medium sized companies is growing @ 20 per cent per annum. At present, the number of seed companies engaged in seed production or seed trade is about 500 numbers.

The key players in Indian seed market with holding company’s structure turnover is Mahyco Monsanto Rs.1000 crores covering all crops, HLL Unilever Rs. 700 crores covering all crops, Proagro Aventis Rs. 600 crores covering all crops, Ankur Rs. 400 crores covering cotton and vegetables, Namdhari Rs. 500 crores covering all vegetable seeds, Advanta and ITC Rs. 300 crores, syngenta Rs. 350 crores in corn, cotton, millet; Indo-American Family Rs. 300 crores in sunflower and cotton, Mahendra Hicks Mouse Rs. 300 crores in millets and cotton; Spic-phi POC Rs. 250 crores in corn and millets; EID Parry family, Monsanto Rs. 10 crores in sunflower and cotton; Nath and Nath group - cotton, millets and corn. Total Rs. 9000 crores. (Source: Seed division of DAC Indian company and it’s Turnover).

National seed policy, 2002, recognizes greater role for the private sector in the functioning of the seed industry in the country. With the growth of economic liberalization and facilitative environment for import of best germ plasm available in the world, there has been substantial progress in the development of private seed industry. However, their main domain still remains the low volume high value seeds which cater to the needs of only few selected farmers. The business of high volume low value seeds like those of cereals, gram and groundnut, etc. are still with the public sector organizations and is limited due to financial limitations of these public sector organizations.

Fertilizer industry in India:

Fertilizer industry is growing at a fast pace by introducing innovative products and by employing most modern technologies. Today India acts as the third-largest exporter and manufacturer of nitrogenous fertilizer in the world. The industry thus, acts as supplier of essential nutrients for the healthy growth of agro plants. Government is striving to develop fertilizer products through eco friendly and pollution controlled methods.

The industry made a very humble beginning in 1906, when the first manufacturing unit of Single Super Phosphate (SSP) was set up in Ranipet near Chennai with an annual capacity of 6000 MT. The Fertilizer and Chemicals Travancore of India Ltd. (FACT) at Cochin in Kerala and the Fertilizers Corporation of India (FCI) in Sindri in Bihar (now Jharkhand) were the first large sized -fertilizer plants set up in the forties and fifties with a view to establish an industrial base to achieve self sufficiency in food grains. Subsequently, green revolution in the late sixties gave an impetus to the growth of fertilizer industry in India and the seventies and eighties then witnessed a significant addition to the fertilizer production capacity.

There exist a lot of fertilizer and insecticide companies in India which are under the ownership of the central or state government of India. The industry plays a vital role in improving the agricultural growth and economic development of the nation. Government offers a lot of subsidies and concessions to farmers on fertilizer and insecticide products.

The fertilizer association of India (FAI), act as a representative body of the fertilizer manufacturers of the country. They are concerned with the manufacturing, marketing and distribution aspects of fertilizer and insecticides belonging to public, private sector or co operative sector. The board of directors of FAI is responsible for developing new policies and procedures for the well being and development of fertilizer industry in the country.

List of Government companies in fertilizer and insecticide sector:

- Brahmaputra Valley Fertilizer Corporation Ltd.
- FCI Aravali Gypsum and Minerals India Limited, Jodhpur
- Hindustan Copper Limited (HCL)
- Hindustan Fertilizer Corporation Ltd.
- Madras Fertilizers Limited (MFL)
- National Fertilizers Limited
- Neyveli Lignite Corporation Ltd. (NLC)
- Paradeep Phosphates Limited (PPL)
- Projects and Development India Limited (PDIL)
- Pyrites, Phosphates and Chemicals Limited
- Rashtriya Chemicals and Fertilizers Limited (RCF)
- Steel Authority of India Limited (SAIL)
- The Fertilizer Corporation of India Ltd.
List of fertilizer companies in co-operative sector:

- Indian Farmers Fertilizer Co-operative Ltd.
- Krishak Bharati Co-operative Limited

Hindustan Copper Limited (HCL) is one among the majors in the public sector industry of India. The Company was established in 1978 by combining the NFL Group of Companies and the Fertilizer Corporation of India Limited. Rashtriya Chemicals and Fertilizers Limited (RCF) were also commenced in the same year. The Company has production units in Trombay and Thal. The Fertilizers and Chemicals Travancore Limited (FACT) is another major fertilizer company in Public sector. They mainly concentrate in production of Ammonium Sulphate. The production plants of the company are located at Cochin.

As India is an agrarian economy the existence of Fertilizer and Insecticide firms in public sector is really helpful for the economic growth of the nation. The promotion of the sector is essential for increasing the GDP of the country. Fertilizers and pesticides have become major cost of production in India along with the cost of other input like seeds and labour cost (www.etagriculture.com).

Agro-chemicals industry in India:

Increasing demand of food grains and declining farmlands in India have increased pressure on farm yield improvement and reduction in crop losses due to pest attacks. Indian crop protection market was estimated at $3.8 billion in FY12 with exports constituting about 50 per cent of the market. The crop protection market has experienced strong growth in the past and is expected to grow further at approximate 12 per cent p.a. to reach $6.8 billion by FY17. The growth would be largely driven by export demand which is expected to grow at 15-16 per cent p.a. while domestic demand is expected to grow at 8-9 per cent p.a. Biopesticides, which currently represent only 4.2 per cent of the overall pesticide market in India, are expected to exhibit an annual growth rate of about 10 per cent in the coming years.

India’s agro-chemicals (Pesticides) consumption is one of the lowest in the world with per hectare consumption of just 0.58 kg compared to US (4.5 kg/ha) and Japan (10.8 kg/ha). Whereas India’s chemical fertilizer consumption (~144 kg/ha) is higher than global average (~122 kg/ha). In India, paddy accounts for the maximum share of pesticide consumption, around 28 per cent, followed by cotton (20%).

The scenario which is likely to unfold is that India’s incremental consumption for fertilizer is going to tone down while incremental consumption of agro-chemicals is expected to grow with any additional income of farmers being spent on agro-chemicals and not fertilizers. Besides increasing in domestic consumption, the exports by the Indian Agro-chemicals Industry can be doubled in the next five years if proper strategies and sophisticated technologies are adopted by the industry.

Indian crop protection industry is largely dominated by insecticides which form about 65 per cent of share of the industry. Other segments like herbicides, fungicides and other (rodenticides/nematocides) form 16 per cent, 15 per cent and 4 per cent, respectively. Over the 12th plan period, agro-chemical segment is expected to grow at 12-13 per cent pa to reach $6.8bn (Rs. 39,000 crores) by FY17, with domestic demand growing at 8-9 per cent pa and export demand at 15-16 per cent pa. Current low consumption of crop protection products in India, 0.6kg/ha compared to world average of 3kg/ha, offers immense opportunities for future growth.

The Indian market is different from the global industry in terms of consumption patterns. Globally, herbicides constitute about 44 per cent of the crop protection market followed by fungicides at 27 per cent, insecticides at 22 per cent and others at 7 per cent. Favourable climatic conditions in North America and Europe drive herbicide consumption in those areas. Insecticides usage has also gone down in developed

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<thead>
<tr>
<th>Sr. No.</th>
<th>Sector</th>
<th>Capacity (Lakh MT)</th>
<th>Percentage share</th>
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<td>N</td>
<td>P</td>
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<tr>
<td>1.</td>
<td>Public sector</td>
<td>34.98</td>
<td>4.02</td>
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<td>2.</td>
<td>Co-operative sector</td>
<td>31.66</td>
<td>17.03</td>
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<td>3.</td>
<td>Private sector</td>
<td>53.78</td>
<td>35.14</td>
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<tr>
<td>Total</td>
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<td>120.47</td>
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markets with increased usage of Genetically Modified (GM) crops.

Tropical climatic conditions and high production of paddy, cotton, sugarcane and other cereals in India drive the consumption of insecticides. Availability of cheap labour for manual weed picking also contributed to low consumption of herbicides in India. However, the trend is expected to change in future as herbicides, now, are the fastest growing segment due to increasing farm labour wages in India.

Indian agro-chemicals market is supported by strong growth drivers. Current low consumption of crop protection products in India, 0.6 kg/ha compared to world average of 3 kg/ha, offers immense opportunities for future growth. Availability of cheap labour and low processing costs offers opportunity for MNCs to setup their manufacturing hubs in India for their export markets. The sector is also driven by huge opportunity for contract manufacturing and research for Indian players due to large availability of technically skilled labour. Despite the strong growth drivers, Indian agro-chemicals industry faces challenges in terms of low awareness among farmers (only 25-30% of the farmers are aware of agro-chemical products and their usage). With large number of end users spread across the geography, managing inventory and distribution costs is a challenge for the industry players. Apart from this, as per feedback from leading industry players, rising sale of spurious pesticides and spiked bio-pesticides pose a major threat to industry growth.

Effectiveness of current Supply Chain Management (SCM) practices in agro-chemicals is another area of concern for the industry. Companies face issues due to seasonal nature of demand, unpredictability of pest attacks and high dependence on monsoons. Month end skews and high inventory across the channel is a perennial problem for the industry. Going forward, the industry needs simplified registration norms for pesticides exports and increased scope of regulations to include all types of pesticides (including biopesticides). For effective regulatory policy, government and industry players need to work together to keep up the growth momentum. Regulators need to increase their inspection staff to ensure regular checks to contain the growth of spurious products.

There is also a need to encourage R and D and ease registration process for development of new molecules. Large MNCs can look at strategic alliances with Indian counterparts to increase their marketing and distribution reach or expand into newer product categories. Smaller Indian companies can look at tie-ups with MNCs to explore opportunities in contract research and manufacturing.

Companies also need to relook at strengthening their SCM strategies to improve their distribution reach. Certain progressive companies in the industry have adopted new innovative practices and are setting new benchmarks in supply chain performance which can be followed by other players as well.

**Key highlights of the Agro-chemical industry in India during 2013:**

- Indian crop protection market estimated at $3.8bn in FY12, with exports constituting 50 per cent of the market, and expected to reach $ 6.8bn by FY17.
- Current low consumption of pesticides in India, 0.6 kg/ha compared to world average of 3kg/ha offers significant opportunity for growth.
- Biopesticides, which currently account for 4.2 per cent of the market are expected to grow at 10 per cent p a.
- Industry to face challenge from the high sale of spurious / spiked products.
- Large availability of technically skilled labour and patent expires in near future to stimulate the contract manufacturing and research in agrochemicals.
- Regulations need to be simplified and its scope should include all types of pesticides (including biopesticides).
- Effective supply chain management to become a key success factors for the industry players.

**Indian farm machinery scenario:**

Tractors are the main power source for various farm operations and India is the world leader in tractor production with over 5 lakh tractors produced annually. Studies reveal that adoption of appropriate mechanization of farm operations can increase production and farm productivity by 10-15 per cent, cropping intensity by 5-20 per cent and effect savings in seeds (up to 15-20 %), fertilizer and chemicals (up to 15-20 %) and time and labour( up to 20-30 %). Progress in farm mechanization at present is hindered by the low and erratic availability of farm power and shrinking holding sizes. Average farm
power availability for the cultivated areas of the country has increased from 0.48 kW/ha in 1975-76 to 1.73 kW/ha at present and is likely to rise to 2.0 kW/ha by 2015. Shrinking landholding size with majority of the farmers being small and marginal is also making individual ownership of agricultural machinery progressively uneconomical. This requires steps for the setting up of custom hiring centres / high-tech machinery banks so that small and marginal farmers can reap the benefits of farm mechanization. The government has initiated a Sub-Mission on Agriculture Mechanization in the twelfth five year plan, with a focus on custom hiring. Agricultural machinery industry is an important segment of the agri-business sector in India and plays a crucial role in furthering agricultural development. Agricultural machinery and equipment industry comprises of a large number of segments even in the organized sector. Tarctor industry is one of the most capital intensive industries in agricultural machinery industry with more than half a dozen players in the market at present (Singh, 2009).

M and M, India’s largest tractor manufacturer, which merged with Punjab Tractors in August 2008, reported a 21 per cent jump in its tractor sales during the year. Similarly, Jain irrigation, India’s largest manufacturer of irrigation systems, had a robust year. However, the notional loss of Rs. 77.7 crores on forex fluctuations resulted in a stagnant net profit. The other major PVC pipes manufacturer Finolex Industries reported a 24 per cent volume growth in pipe sales to 94400 tonne, while the polymer sales grew just 2 per cent to 1.92 lakh tonne. Similarly, in value terms, the pipes business grew by 27 per cent, reaching Rs. 566.5 crore, as against the 0.6 per cent growth in the polymer business, which reached Rs. 862 crore. In view of the strong growth prospects, the company plans to expand its pipes capacity by 40 per cent.

The rural-focused companies gained substantially on the list of India’s largest 500 listed companies for FY09. FACT was the biggest gainer, jumping 200 notches to 235th position for FY09, with Bayer Crop science jumping 82 notches to 309th rank. Coromandel Fertilizers, Mangalore Chemicals, Zuari Industries, Chambal Fertilizers GSFC, Deepak Fertilizers, Tata Chemicals and RCF were the other major gainers. GNFC turned out to be the largest loser, falling 43 places to 183rd position, followed by Escorts, which lost 33 places to be ranked 197th among the companies.

Conclusion:

The demands for agri-inputs are derived demand. The level of agricultural output depends on the availability of quality inputs at an affordable price. Agri input industry which consist of seeds, fertilizers, agro-chemicals and farm machineries are comparatively better organized. Government policies helped in the growth of seed industry, inability competitor among the companies. There is a huge demand for high end farm machineries much as harvester, tractor etc. the performance of input-industry is crucial to improve the economic conditions of farmers. National Seed Policy, 2002, recognizes greater role for the private sector in the functioning of the seed industry in the country. With the growth of economic liberalization and facilitative environment for import of best germ plasm available in the world, there has been substantial progress in the development of private seed industry. The Fertilizer Association of India (FAI), act as a representative body of the fertilizer manufacturers of the country. They are concerned with the manufacturing, marketing and distribution aspects of fertilizer and insecticides belonging to public, private sector or co-operative sector. As India is an agrarian economy the existence of fertilizer and insecticide firms in public sector is really helpful for the economic growth of the nation. Indian agro-chemicals market is supported by strong growth drivers. Current low consumption of crop protection products in India, 0.6 kg/ha compared to world average of 3 kg/ha, offers immense opportunities for future growth. Progress in farm mechanization at present is hindered by the low and erratic availability of farm power and shrinking holding sizes.

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