Fertilizer Pricing and the Indian Farmer’s Income – A Study

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ABSTRACT

The agriculture sector in India has been one of the mainstays of Indian economy, although its contribution to India’s GDP has declined over the years. To ensure the food security of over 1.2 billion Indians, the importance of the agriculture sector cannot be ignored. However, the income of the Indian farmer has not been sufficient for sustenance over a long period. Fertilizers have been one of the major spending areas for farmers and the cost of fertilizers has been increasing over the time. This has added to the farmer’s miseries. This paper attempts to understand the various indicators associated with Indian agriculture sector, the financial profile of an Indian farmer and the relevance of fertilizer pricing to the farmer’s income and overall wellbeing.

Keywords — Indian agriculture sector, Indian fertilizer sector, pricing.

II. LITERATURE REVIEW

There are regular study reports released regarding the Indian agriculture sector. Reports generated by the Department of Agriculture provide statistics about the current state the agriculture scenario [1]. The government has been protective of the farmer. It has taken measures to protect the farmer from movement in global prices for the inputs and through controls in import to support domestic production [2]. Policy changes over the years have resulted in increased research in agri-related areas. This has benefitted the poorest of farmers [3]. Farmers who cannot afford to carry on cultivation in their own farms are driven to opt for manual labour jobs in others’ fields. Others let out their farms for contract farming [4]. New technologies in agriculture like Conservation Agriculture is being promoted so that farmers are able to use the available resources better [5].

Despite of their direct link, the Indian fertilizer sector is studied and discussed in isolation from the agriculture sector. This is evident in various reports detailing statistics related only to the fertilizer sector [6]. It is hard to come across any study where the direct impact of fertilizer pricing on the farmer’s income has been studied.
except for a mention in the statistics as to what is the farmer’s expenditure on fertilizers [7]. This necessitates that a study be carried out that attempts to have a look at the fertilizer pricing and farmer’s income in the same picture. Intensive usage of chemical fertilizers has led to a question mark over its sustainability. As fertilizer use showed dynamic changes in output, many in the farming community turned away from the organic alternatives [8]. Thus fertilizer use at a very large scale is not going to go away soon.

III. INDIAN FERTILIZER SECTOR

The green revolution in India led it to self-dependence for the food security of its population. A primary driver of this revolution was the increased use of chemical fertilizers by the farmers to improve the yield of their crops. The fertilizer consumption (in terms of N, P and K nutrients) steadily increased from 65.6 thousand MT in 1950-51 to 24.48 Million MT in 2013-14. This increase was supported by setting up fertilizer plants across India and meeting the deficit through imports. India currently has 30 urea manufacturing units and 19 DAP, NP/NPK manufacturing units in addition to several more Single Super Phosphate (SSP) manufacturing and mixing units. For year ended 2014-15 India’s capacity for production of Nitrogenous fertilizers at 13.53 Mn MT and that of Phosphatic fertilizers at 6.84 Mn MT. These production capacities translate into production of Urea and various other NPK grades as specified in the Indian Fertiliser Control Order (1985). However India is 100% dependent on imports for its requirement of Muriate of Potash (MOP). MOP is used as a fertilizer for direct application as well as a raw material for production of NPK grades. The production and import figures for major fertilizers like Urea, Di-Ammonium Phosphate (DAP), MOP and other NPK grades for FY2014-15 stand as shown in the figure below. The fertilizer sector supplied approximately 51 Mn MT of fertilizers of which one-third was imported.

As the area under cultivation has largely remained same, increase in the food grain production had to be achieved primarily by using latest techniques for improving productivity. Organic farming is being advocated for sustainable agriculture, however given the huge demand for food grains in India, there cannot be a trial and error scenario for moving from intensive chemical fertilizer use to use of organic substitutes.

IV. THE FARMER’S INCOME

Despite of majority of rural workers dependent on agriculture for their livelihood, agriculture has not been a very highly rewarding sector. The various figures indicated by the survey conducted by the National Sample Survey Office on behalf of Indian Ministry of Statistics and Program Implementation in December 2014 support this notion. According to this survey there are an estimated 90.2 million agricultural households. Over 63% of these households depend on cultivation as a means of their livelihood. The average monthly income per agricultural household was estimated at Rs. 6426/-. At the same time it was found that average monthly expenditure per agricultural household was Rs. 6223/-, i.e. marginally lower than the income. The monthly income was estimated considering the various sources of income for an agricultural household. These sources include incomes from cultivation, livestock, wages and/or salaries and non-farm business. Figure 1 gives the detailed breakup of average agricultural household income according to the source of income.

Cultivation and livestock contribute to nearly 60% of the total income. Wages/salaries contribute to a healthy 32.2% due to the high extent of manual labour that is employed in farming. Nearly 22% of total households were found to be dependent on wages/salaries for their livelihood. The survey also estimated the distribution of agricultural households by type of ration card, which revealed that around 41% of these households held BPL or Antyodaya (issued to ultra-poor) cards.

Figure 2 illustrates the individual contribution of each of these expense head to the total cost. Fertilizers contribute to 24% of total cost which is the highest individual proportion. It should be noted here that fertilizers are made available to the farmers at a subsidized rate and still their share is the highest in the total expenses. This highlights the need for reduction of fertilizers prices to the end user. This should not be done by increasing the subsidy which will not be sustainable. Instead it should be achieved by focussing on the various cost heads leading to fertilizer pricing.
The narrow gap in income and expenditure has led to a scenario whereby agricultural households resort to debts from various lenders. An average amount of Rs. 47000/- was estimated to be outstanding loan per agricultural household. Around 52% of total agricultural households were estimated to be in debt. The major source for these loans was found to be banks (42.9%) followed by agricultural/professional money-lenders. The share of the government was found to at a low 2.1%. Indebtedness was also found to be a major cause of farmer suicides as per India’s National Crime Records Bureau. It accounted for 20.6% out of total 5650 farmer suicides recorded in 2014 in India. The various points noted in this section highlight the need for improving the farmer’s profitability.

V. FERTILIZER PRICING IN INDIA

Fertilizers are covered under the Essential Commodities Act of India. As such the fertilizer production, import, movement and pricing are monitored by the government. The government provides a subsidy for each of the grades specified in the Indian Fertilizer Control Order (1985). Urea is the most consumed fertilizer accounting for 57% of total sales in 2014-15. DAP was a distant second with 14% share of total sales in 2014-15 and all other fertilizers including NP/NPK and MOP among rest contributing for the balance sales. Among these the retail price of Urea is controlled by the government, while those of other fertilizers are market driven and are decided upon by individual companies marketing them. Figure 3 shows the retail price movement of Urea and DAP over the last few years.

The vast difference between the prices of Urea and DAP has led to a skewed pattern of consumption which adversely affects the soil health. Each of the NP/NPK fertilizers, pricing of which has been decontrolled by the government is subsidized to make them affordable for the farmer. For the year 2014-15 the subsidy budgeted for all fertilizers by the Finance Ministry stood at Rs. 70967 crores. This is a very substantial amount behind only food and fuel in terms of subsidy budgeted. Figure 4 indicates the subsidy per MT for DAP along with its retail price, thereby indicating the actual cost inclusive of subsidy and the retail price availed to the farmer.

While over the last couple of years, the total cost of DAP is in the range of Rs. 36000/MT to Rs. 38000/MT, the subsidy is being reduced by the government and hence the fertilizer marketing companies are forced to compensate it with the increase in MRP due to rising costs. The brunt of this is faced by the farmer who is left with either to buy the expensive fertilizers funded through debt or go for the cheaper Urea which further deteriorates the soil health by overuse of single nutrient.

VI. MAJOR FACTORS AFFECTING FERTILIZER PRICING

Fertilizer pricing is a sensitive issue given the context of Indian agriculture sector. As has been seen earlier, the farmer spends the most on fertilizer and fertilizers are necessary for obtaining higher yields. Additionally, raw materials like phosphoric acid and ammonia are also imported and as such the total dependence of imports for India is very high. In this section the various major factors affecting the pricing of fertilizers are discussed.

A. Prices of the imported ready-to-market fertilizers

India lacks in the natural resources and production capacity for production of raw materials for fertilizers. This has led to high imports of raw materials and ready-to-market fertilizers by Indian fertilizer
companies. Imported fertilizers stood at 33.5% of total fertilizers available in 2014-15. Considering in the context of the size of Indian fertilizer market, this is huge. In 2010-11 the Indian government introduced the Nutrient Based Subsidy (NBS) which provided for the same amount of subsidy for a product regardless to its origin, i.e. whether it was indigenously produced or imported entirely, it would receive the same amount of subsidy per MT. This led to a spurt in fertilizer import figures since. The prices of fertilizers in the global market are entirely market driven and are affected by the global scenario of fertilizer consumption.

B. Prices of the imported raw materials

As for the imported fertilizers, similarly for imported raw materials, the prices are driven by global markets. The major raw materials that are imported are phosphoric acid, ammonia, rock phosphate, sulphur and MOP. In 2014-15 the total imports of major raw materials i.e. Ammonia, Phosphoric Acid and MOP stood at 9.2 Mn MT. While India lacks in natural resources for MOP, Ammonia and Phosphoric acid are also produced indigenously. In 2014-15 the gap in total consumption and total production of Ammonia and Phosphoric Acid was found to be approximately 6.6 Mn MT. This gap was met through imports.

C. Exchange rate

Due to the high dependence on imported fertilizers and raw materials, the exchange rate becomes a very critical make-or-break type of factor influencing the fertilizer pricing. Most of the transactions are carried out using the U.S. Dollars (USD). Figure 5 indicates the movement of USD vis-à-vis Indian Rupee from 1st April 2010 to 31st March 2015. The movement of retail and import prices of DAP are also indicated for the same period.

D. Cost of Material Handling

The imported fertilizer has to be unloaded from the vessel through which it is imported. Unloading of imported fertilizer is always the importer’s responsibility which he may outsource to a third party. This party charges a fee for carrying out the unloading work. Further, the unloaded material needs to be stored and bagged. This expenditure also adds to the total cost and hence affects the fertilizer pricing.

The above factors need to be thoroughly understood and investigated so as to identify cost saving measures. The savings must be passed on to the farmers so that their quality of life improves through some savings.

VII. CONCLUSION

Fertilizer pricing and the farmer’s income are very closely related issues since the farmer spends the most on purchase of fertilizers for his farm. In India fertilizers are covered under the Essential Commodities Act. Fertilizer manufacturers are provided with a subsidy but, fertilizer pricing is not regulated. As the subsidy levels have decreased over the years, fertilizer manufacturers and importers have been forced to increase the retail price for the farmer. Apart from the subsidy, various other factors also contribute in arriving at the final market price. Major of these are prices of ready-to-market fertilizers and raw materials, exchange rate and the material handling cost. These factors need to be further studied so that their impact is well understood. This is important so that appropriate measures can be taken to control costs and consequently reduce the retail price of the fertilizer.

REFERENCES