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REVIEW ARTICLE

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Impact of Fertilizers Subsidy Withdrawal on GDP

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INTRODUCTION

Previous chapters may prompt one to conclude that fertilizer subsidy withdrawal is inevitable. It is a matter of time when it is either completely withdrawn or its present shape goes under transformation much under budgetary pressure rather than the WTO obligations. The subsidy withdrawal will have many ramifications. It will impact GDP both on supply and demand side besides denting farmer's purchasing power and food security in terms of physical availability. This chapter will analyze the effect of subsidy withdrawal and experience of a few countries about subsidy elimination on the basis of selected studies.

5.1.1 SUPPLY SIDE EFFECT

Agriculture, being a multi-functional activity, had been/is and will remain an important and vital sector of the Indian economy in near future. Having realized this universal truth, Indian policy makers adopted the model of RPS with the twin objectives of promoting domestic industrialization and ensuring timely availability of fertilizers at affordable price to millions of Indian farmers, spread over 6 lakhs villages across length and breath of the country. The said policy served the purpose well as can be seen from the Table: 6, which throws light on the growth trajectory of production and consumption of N & P fertilizers in the country over last two decades. The entire requirement of Potash is met through imports in absence of economically viable natural resources in the country.

Table: 6

All India Production and Consumption of N, P2O5& K(000 tonnes)

Year	Nitrogen		Phosphate		Potash #
	Production	Consumption	Production	Consumption	Consumption
1980-81	2,163.90	3,678.10	841.5	1,213.60	
1990-91	6,993.10	7,997.20	2,051.10	3,221.00	
2000-01	10,942.80	10,920.20	3,734.20	4,214.60	
2005-06-P	11,332.40	12,723.30	4,196.40	5,203.70	

There is no domestic production of K in the country.

P: Provisional; (Source: Fertilizer Statistics 2005-06, FAI, at pg.1-47 & 1- 81)

It can be observed from the above table that the country is almost self-sufficient in nitrogenous production due to affluence of natural resource, but same is not true for phosphatic fertilizers as it is heavily dependent on imported raw materials for production of DAP and other NP complex fertilizers. In case of withdrawal of fertilizers subsidy, the N & P products have to be produced and sold at ruling world prices. Consequently, the invisible market hand in open economy will eliminate inefficient fertilizer producers. Thus once fertilizers prices are decontrolled, domestic prices may become equal to world prices. In that scenario, domestic supply-price relation is to be seen in global perspective, as explained graphically in Figure: 3.

Figure: 3

Global Perspectives

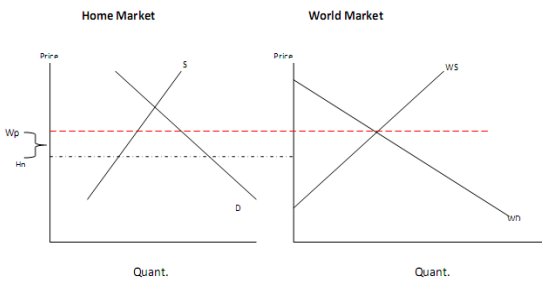


Figure: 3 above illustrates that home prices (Hp) are below the world prices (Wp), due to MRP fixation by the government, and consequently differential between the production/import cost and MRP of the three major fertilizers is reimbursed as subsidy by the government of India. Once the sale prices of these fertilizers are decontrolled and the market forces determine the sale price, home prices will become equal to world prices. In that case, only competitive domestic producers will remain in production and rest will vanish. This reduction in domestic production of fertilizers may reduce the domestic supply and in will create space for imported fertilizers, the volume of which may be contingent on import prices determined by the demand and supply at international market. To assess the production loss of N &P, one needs to look at the unit wise cost of production in the country.

The Table: 7 gives unit wise cost of urea production during the financial year of 2005-06.

Table: 7

Provisional Rates of Subsidy on Urea (2005-06)

(Source- FAI & FICC)

(Rs/tonne)

	Capacity	1.4.05 to 30.6.05		1.7.05 to 30.9.05		1.10.05 to 31.12.05		1.1.06 to 31.3.06	
Name of unit	('000 te)	Rate of Concession excluding incidence of Sales tax on inputs	Rate of Sales Tax	Rate of Concession excluding incidence of Sales tax on inputs	Rate of Sales Tax	Rate of Concession excluding incidence of Sales tax in inputs	Rate of Sales Tax	Rate of Concession excluding incidence of Sales tax on inputs	Rate of Sales Tax
Gas Based-pre-1992									
BVFC, Namrup II	240.0					7162	311	7162	311
BVFC, Namrup III	270.0	6140	343	6140	343	6140	343	6140	343
IFFCO, Aonla I	864.6	5716	177	6770	206	7357	228	7357	228
Indo Gulf Fert.	864.6	5813	168	5782	173	6084	182	6084	182
KRIBHCO, Hazira	1729.2	4839	346	4879	364	4866	357	4866	357
NFL, Vijaipur I	864.6	4798	151	4981	157	4923	155	4923	155
RCF, Trombay V	330.0								
Gas Based-post-1992									

It is observed from the above table that urea plants, as per NFPP, are grouped in different categories as per the vintage and feed stock used for the production. Since there is no homogeneity in the feedstock, there is a wide gap in cost of production ranging form Rs.4866 (KRIBHCO) to Rs.21903/ (MFL-Manali) per tonne of urea. It is noticed that most of the Naphtha based units are having cost over Rs.15000 due to high priced naphtha.

If commercial viability of different urea plants is examined in the light of their production cost, it is seen that all the Gas, mixed feed and Fuel oil/LSH based urea units are economically efficient in the given international market scenario and most of the Naphtha plants are inefficient, being non-competitive at prevailing import parity price Rs.15000 per tonne of urea. These inefficient plants may get closed down. Thus urea production capacity of about 33 lakhs tonnes (20%) of total 200 lakhs tonnes may get eliminated for the time being. However, it is possible that actual production loss may be less due to rising trajectory of prices in international market on account of increased demand. Although loss in production can be more if imported urea price gets depressed at international market due to conspicuous fall in demand.

Indian phosphatic fertilizer production is either based on imported phosphoric acid or imported rocks and Ammonia. These inputs contribute about 92% of the total cost of production and balance 8% remains conversion cost. So domestic cost could match with the landed cost of imported DAP and consequently subsidy withdrawal may not have very injurious effect on production of this segment of fertilizers on efficiency count. The short-term effect of production loss on GDP can be measured in terms of expected loss of urea production. Table: 8 speak about contribution of Chemical Industry to GDP.

Table: 8

Domestic Products From Agriculture & Allied Activities (At current prices)

(2000-01 to 2005-06) Rs. In Crores)			
Item	2000-01	2005-2006	Variation%
GDP	1925416	3250932	68.8
Value of Agriculture	373543	494499	32.3
Value of Inputs	115343	159586	38.4
Chemical (orga.) Industry	20689	21808	5.4
Chemical (unorga) Industry	6157	6763	9.8

(Constructed on the basis of Statement 54 of National Accounts Statistics 2007 & Table .2.7 of Agriculture at A Glance 2006)

It is observed from the Table 8 above that GDP growth (68.8%) in last five years has been twice that (32.3%) of value of agriculture. The inputs value has taken over the outputs by over 6%. It is also noticed that contribution of organized Chemical Industry to input value has come down from 17.9% in 2000-01 to 13.7% in 2005-06 and same is reflected in falling contribution to GDP from 1% in 2000-01 to 0.67% in 2005-06. It means the value of other inputs has gone up compared to chemical fertilizers, besides farmers are more relying on usage of organic fertilizers, which has registered the growth of 9.8% compared to 5.4% of Chemical fertilizers. If it is assumed that in short term, urea production of 33.02 lakhs tonnes from Naphtha based units, having production cost over Rs.15000 per tonne, may wither away; consequently the estimated loss might be of Rs.1594 crores at prevailing MRP of Rs.4830/ per ton of urea. Thus loss of chemical industry's contribution to GDP will be very nominal. The losses may get further reduced if some of the Naphtha and LSHS plants convert to Gas route or may not go out of production immediately due to temporary surge in prices of imported Urea.

However, in long run, the distinct structural difference between the three main plant nutrients will, by and large, determine the fertilizer supply in the world market. Whereas nitrogen fertilizers are being produced in some 90 countries around the world, production of phosphates and to even larger extent of potash is much more concentrated in countries having mineral deposits. Three countries, USA, China and Morocco, account for almost 2/3 of the world supply of phosphate rock, while Canada and CIS alone provide 2/3 of the world potash supply. No one company or country has such a dominating position in the nitrogen industry. While

the discovery of new reservoirs of natural gas in numerous developing countries has led to a dispersion of nitrogen production to countries which previously had none at all, phosphate and potash production is as concentrated to-day as it was 25 years ago, if not more so. Surprisingly, the natural gas rich countries, in the Middle East and Latin America, have not taken their share of the production capacity build up as one might have expected given their comparative advantage (Eilertsen, 99). It is assumed that once world prices start increasing and this industry is seen as a profit-making venture, new investments may take place in resource rich areas of Middle East and Latin America, which may drive down the world prices further by improving the supply. Similarly, removal of price cap on DAP and MOP may sensitize potassic and phosphatic nutrients producers to consumers' natural resistance to price increase. High prices may result in loss of demand and market share, which in turn may force the producers to reduce the prices for retaining their market share. They may keep the prices within the range of their marginal utility value and so supply of these products should not be a constraint.

5.1.2 DEMAND SIDE EFFECT

The utility of chemical fertilizers in fostering farm production and productivity cannot be undermined. Nevertheless, chemical properties of the three major fertilizers i.e. Urea, DAP, and MOP differs and so does their contribution. Owing to its growth-promotional effects, explained by its physiological functions, nitrogen is often used in excess of its requirement and not balanced with other nutrients. Therefore this nutrient, though having a positive impact on nutritional value, e.g. protein content of cereals etc. is often associated with poor crop quality. In contrast to nitrogen, potassium owing to its specific functions in plant metabolism has the potential to improve quality of crops. Quantitatively these two nutrients play major role in growth and yield formation of crops (Hardter, Kali et all,99). Similarly phosphate contributes in strengthening roots and productivity of root based crops like potato.

To assess the impact of subsidy withdrawal on demand of these fertilizers, it is necessary to refer the current selling prices of these fertilizers and likely price increase due to subsidy-withdrawal. The present maximum retail prices of Urea, DAP and MOP are Rs4830/, Rs. 9350/ and Rs4455/ per tonne respectively and average subsidy on these fertilizers is Rs. 9427/per tone on Urea, Rs. 7292/ per tonne indigenous DAP/ Rs. 6308/ per tonne imported DAP, and Rs.7153/ per tonne MOP. It is obvious that subsidy withdrawal, in short run, will result in price increase, not necessarily equivalent to subsidy loss, in given fertilizer demand elasticity. In case of Urea, price rise may be intense due to sudden loss of domestic production by about 20%. This may create huge supply pressure at world market and consequent spiral effect on price. Besides, it will get compounded with port handling and other logistic cost. The natural corollary of inverse relation between price and demand is destined, in short run, to depress the fertilizer consumption in India. In long run, however, demand trajectory will be contingent on factors like investment in fertilizers sector, development of irrigation infrastructure, solving the problem of timely availability of quality fertilizers, credit (Nagy & Edun, 2002) and market realization of the farm produce.

In short run, the extent of demand loss can be assessed in the backdrop of historical trend in fertilizer prices and consumption. In Seventies, the average price of per kilogram of N was Rs.3.36 and that of 'P' was Rs.3.48 with nutrient cost ratio of 0.9:1.1 with average value of ratio as 1.02. Both 'N' and 'P' consumption registered a growth of 11%, i.e., N and P moved together. But in Eighties, the average cost ratio of N and P was in the range of 1.13 to 1.1, with average value of ratio as 1.15 because prices moved to Rs.5.07 per kg. of N and to Rs.5.86 per kg of P. However, in this period 'P' registered higher growth of 15% as compared to 9.8% growth of N on average annual basis. In the period of decontrol in early Nineties, the ratio of 'P' to N became 2 to 2.6 and then in 1996-97 came down to 2.14(Banga, 2004).

On 25th July 1991, prices of all the major fertilizers were increased by 40%, but after three weeks it was reduced to 30%; and phosphatic and potassic fertilizers were decontrolled on 14th August 1992(Saxena,99). Consequent to price increase, consumption of the P & K suffered in subsequent years but not that of N, as can be seen from the Table: 9.

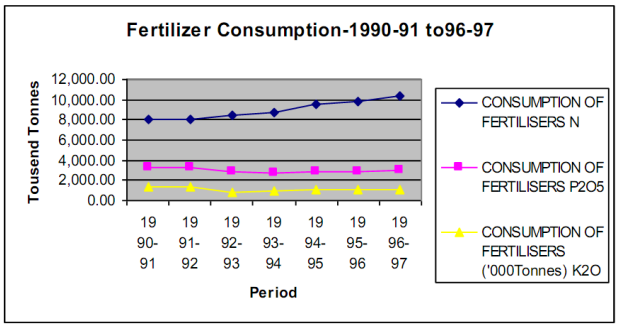
Table: 9

Consumption of Fertilizers since 1990-91 to 1996-97

CONSUMPTION OF FERTILISERS			('000Tonnes)
YEAR	N	P_2O_5	K_2O
1990-91	7,997.2	3,221.0	1,328.0
1991-92	8,046.3	3,321.2	1360.6
1992-93	8,426.8	2,843.8	883.9
1993-94	8,788.3	2,669.3	908.7
1994-95	9,507.1	2,931.7	1,124.8
1995-96	9,822.8	2,897.5	1,155.8
1996-97	10,301.8	2,976.8	1,029.6

(Source: Fertilizer Statistics 2005-06, at pg.1-81)

Figure: 4 Consumption of Fertilizers since 1990-91 to 1996-97



However, to assess its impact realistically, incremental increase in fertilizer consumption, on year-to-year basis, needs more critical examination. In the year 1990-91, all N.P.K. fertilizers registered significant increase of 16.6%, 17.1% & 25.6% respectively, but declined to 1.3%, 8.2% and 5.3% respectively in 1991-92. Consequent to sudden increase in fertilizer prices, consumption of P & K fell by 14.37% to 28.44 lakh tonnes and 35% to 8.84 lakh tonnes respectively in 1992-93 compared to 33.21 lakh tonnes &13.61 lakh tonnes respectively in 1991-92. However, N consumption was not adversely affected despite 40% increase in Urea price form Rs 2350/ per tonne to Rs.3300/ per tonne on July 25, 1991 (reduced to Rs.3060/pt on August 14, 1991 and to Rs 2760/pt on August 25, 1992). The N consumption rose by about 5% from 80.46 lakh tonnes in 1991-92 to 84.27 lakh tonnes in 1992-93. However, the downhill trend in Phosphatic & Potassic consumption was abated in 1994-95, which witnessed the growth of P & K by 8.2% and 16.3% respectively. There was an incremental increase of 9% in N also.

The scenario between 1992-93 and 1996-97 indicates that the incremental growth of 'N' has been normal and not exceptional. It does not indicate that the farmers by virtue of ignorance substituted 'N' with 'P'. The maximum price sensitivity even with decontrolled prices of 'P' was about15%, which was a shock response and the same was made up very shortly with recovery of 8.2% on incremental year-to-year basis in the year 1994-95. Once the concession amount was increased in the year 1997-98, again there was instant response with 31% and 33% incremental increase in 'P' and 'K' respectively (Banga, 2004).

CONCLUSION

If above is taken as a pointer to foretell the demand pattern resulting from complete subsidy-withdrawal, consumption of Urea may suffer by 15-20% but that of phosphatic and potassic may get real hit in short run by about 25-30% of P & 35-40% of K; because of farmers' preference to Urea over DAP & MOP on account of yield and vegetative growth prospects. Since use of MOP is more associated with quality rather than yield, its consumption may be the biggest causality. However, if subsidy is withdrawn in a phased manner and prices are increased as per recommendation of the Economic Reform Commission, the consumption of Urea may not have serious set back.

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