Final Report

Extent of Customs Tariff on Urea after Removal of Quantitative Restrictions

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Abstract

Urea is a sensitive commodity, import of which is effectively canalized through the State Trading Enterprises (STEs); this trade arrangement may not continue for long in the emerging trade order. Present study found that a significant proportion of domestic urea-manufacturing units are not cost-inefficient and are not burden on the society as is generally believed; domestic urea industry is, however, cost-heterogeneous. A review of world urea market indicates surplus urea manufacturing capacity in the gas-endowed countries; a natural gas-starved country like India can opt for limited imports of urea. Import options, however, need to be in commensurate with the domestic market dispensation. The efficient urea-manufacturing units also need to be protected from the volatility of world urea prices. The study concludes that in short run Tariff Rate Quota (TRQ) would take care of the domestic concerns, whereas in the long run variable import tariff appears to be the only resort to protect the domestic industry from price-volatility of the world market.

Introduction

In the emerging trade order, free-from-quantitative restrictions (QRs), domestic urea industry is in disarray; whereas, domestic industry accounts for more than 90 per cent of urea consumed in the country. The formidable level of self-sufficiency in urea has been brought about through an in-ward looking approach of the Government in the '70s, when self-reliance in essential commodities like urea, was considered a pre-condition for self-sufficiency in food. This approach has, however, made domestic urea industry cost-heterogeneous; and warrants Government interventions for a uniform price in the country. A neo-protectionist measure in the form of "sensitive commodities" has been devised following dismantling of QRs, imports of these commodities are effectively canalized through the State Trading Enterprises. In the long run, there is least chance of continuance of this measure[i].

In a liberalizing world, criterion of cost-efficiency dominates over the criterion of self-sufficiency. The existing dispensation for urea, however, prioritises the later objective. Nevertheless, urea is one of the key inputs for agriculture and there is possibility of cost inefficiency being incorporated in the domestic production system; whereas, cost and quality are supposed to be the determinants of trade flow in the new trade order. In this situation, how to go about liberalizing import of urea is an important question to ponder.

Though issues related to opening up of urea are often debated at different forums; there is dearth of research papers based on proper analysis of data. The study done by Gulati and Narayanan (2000) is worth mentioning in this regard. They suggest import liberalization with differential concessions so as to benefit from the low world urea prices. They further argue that by not opening the external market, huge fertilizer subsidy is, in fact, going to domestic urea industry rather to the farmers. There is nothing new in this proposition; this has, in fact, been the case for phosphatic fertilizers wherein both domestic and external producers exists. Import of urea, however, cannot be opened up without checks, as domestic industry is cost heterogeneous. In this perspective liberalizing imports of urea requires calibrated steps in commensurate with the domestic policy. Present study is an effort in the similar direction. The study starts with the assessment of world urea market (Section I) and domestic urea industry (Section II) as a pre-condition for evaluating various import options in the Section III.

Section I: Nature of the World Urea Market

A comparison of world urea production and trade figure indicates that 26 per cent of urea produced is being traded in the world. Aggregate supply of urea is concentrated in the selected regions, East Europe and the Middle-East Asia. The demand for urea unlike supply is relatively more distributed through out the world.

In urea important exporting countries are Russian federation, Canada, Ukraine, Netherland, Indonesia, and the selected Middle-east countries like Saudi Arabia and Qatar. A profile of urea exporting countries indicates that they are endowed with favorable resources like natural gas; and the gas-based urea manufacturing process is the most efficient[ii]. A review of trade practices of major trading countries does not indicate any unfair trade practices; yet, world urea price has been highly volatile.

The world price of urea during the period 1965-2000 has traversed through three distinct phases. Trend in international price of urea and frequency distribution of these prices during the respective periods have been presented in the Box 1.

Box 1: Frequency Distribution and Trend in International Price of Urea

Period	Mean	Std.Dev	Trend
1965-71	69	20	Decreasing
1972-80	160	77	Increasing
1981-99	148	36	Decreasing

In the first phase (1965-71) world price of urea was decreasing, average price during the period was $US 69 per ton. The second phase started in the year 1972 was a phase of increasing international price of urea. There was many-fold increase in the world urea price during the year 1973-74 following abnormal hike in mineral oil price[iii]. On similar account, there was an abrupt increase in the world urea price during the year 1978. These two oil shocks were sufficient to maintain an overall increasing trend in international price of urea till the year 1980. Average urea price during the period was as high as $US 160 per ton; variability was also high (by many-fold) during this period. The third phase is again a phase of decreasing trend in prices of urea started in the year 1981. Tough there were periodic (at an interval of 2-3 years) ups and down in urea prices during the period; its variability has been less as compared to the previous phase. Average price of urea during the period (US$ 148 per ton) was significantly lower than the previous phase; nevertheless, towards the end of the reference period, international price of urea had gone down to as low as US$ 90 per ton.

The extent of variability in international price of urea raises questions about the determinants of prices. An enquiry into price-volatility of urea indicates that this fluctuation to a large extent has been because of the behavior of the feedstock prices; prices of feedstocks fluctuate as most of them are obtained from mineral oil. The world aggregate demand for urea is the next most important factor to influence international price; the estimate for the same has been significant and highly elastic.

World aggregate demand, however, consists of demand from individual countries and it is often argued that large demand from a country often influences world aggregate demand and also world prices of urea. In India, demand for import liberalization is often contested on this account. Present study with annual price (international price) and import (India's) figures, however, could not substantiate the perception that urea imports by India cause increase in trend in the world urea price. Such perception appears to be rooted in the momentary hike in international price of urea, which often follows import decisions in India.

Table 1: Possible Determinants of World Urea Price

Factors	Elasticity Coefficient	t-statistics	Adj-R^2
Feedstock price	1.72	70.41	0.54
World demand	1.63	90.13	0.42
India's import	-1.70	0.96	0.11

A large demand from a country can influence aggregate demand and the world price of urea, if aggregate supply does not match to the demand in a given time frame. In the medium run (more than a year) there is sufficient scope for matching the increase in world demand for urea by stepping up production in the selected gas-endowed countries[iv]. In this backdrop, momentary hike in world urea price following import decisions in India can be explained by the erratic import demand from India; that is, India's imports demand for urea might have been irregular in terms of period and amount as well, causing temporary mis-match in the world supply and demand for urea; as a consequence, world price of urea often increases with the import decisions in India. There may be other reasons for momentary hike in the international prices not discussed herewith.

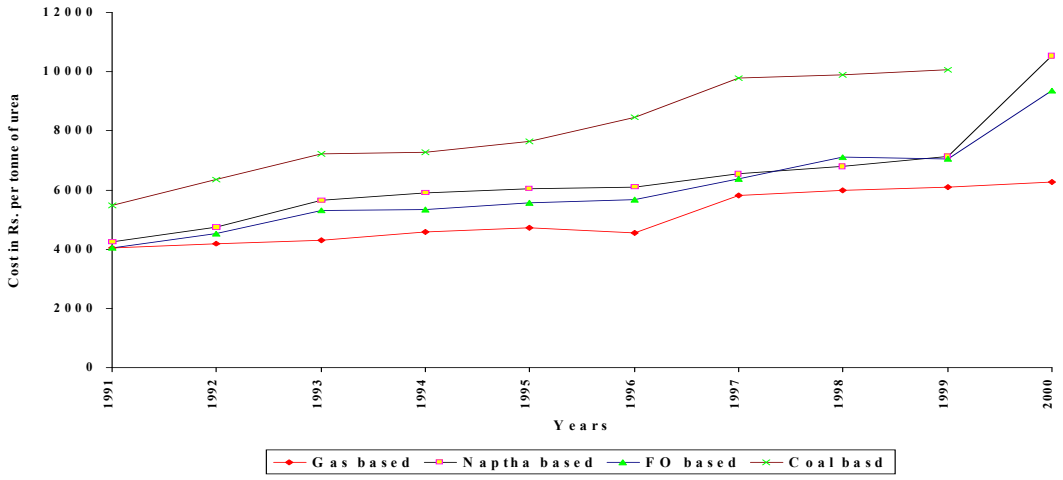
The foregoing discussion shows high instability in the world urea prices, primarily because of fluctuation in feedstock prices, which owes it to mineral oil prices. The study found sufficient unutilized urea manufacturing capacity in the gas-endowed countries to match the increase in aggregate demand for urea. In spite of it, import demand from India has caused momentary hike in the world urea price, primarily because of an irregular and high import demand.

Section II: Domestic Urea Industry

Domestic urea industry consisting of around 30 manufacturing units[v] has accounted for more than 90 per cent of domestic consumption of urea in the country. Production cost of urea in these units varies widely; cost data for the year 1999 indicates that unit cost is the lowest for gas-based units followed by fuel oil, naptha and coal[vi], in increasing order of the unit cost of production.

A historical perspective of unit costs indicates that growth in unit cost of urea production varies with the feedstocks used; growth has been lower for the gas-based units as compared to naptha and fuel oil based units during the reference period (1990-91 to 1999-2000). There was an abrupt increase in the production cost of urea during the year 1996-97 primarily because of a significant increase in the feedstock prices during the year. This significant rise in the feedstock prices was, in fact, result of the Government decisions to integrate domestic and international market for the feedstocks[vii]. Following this integration there was also fluctuation in the production cost of urea, though this is not amply clear from the unit cost data as reflected by the Retention Price Scheme (RPS). The breakup of unit production cost into feedstock and other costs points towards this instability, this cost breakup was available to the researcher for the selected years.

Fig 1. Feedstock-wise Trends in Average Production Cost of Urea



Extent of Protection to Domestic Urea Industry

It is often argued that urea production in the country has increased because of consistent protection to the domestic industry; therefore an attempt has been made herewith to assess the nature and magnitude of protection to the domestic urea industry. As discussed earlier domestic urea industry is cost-heterogeneous with feedstock being the most important determinant for heterogeneity. The extent of protection has therefore been assessed according to the feedstocks used. One of the important determinants in calculation of protection coefficients is the international price, and international price as referred earlier has been highly unstable; therefore protection coefficients - nominal and effective[viii] have

been worked out for three reference periods; 1991, 1995, 1999 representing different situations in the world urea market[ix].

The protection coefficients, in contrast to the general belief, do not indicate absolute protection to the urea industry; level of protection, in fact, varies with the international price. In one of the reference years (1995), domestic urea industry was not protected. The magnitude of protection also varies with the feedstock used. The gas-based urea industry is nominally protected (NPC>1); extent of protection further decreases if we consider EPCs as a measure of protection. Similarly, fuel oil based urea appears to be protected in terms of product prices, that is, NPCs. Level of protection as measured by the EPCs decreases; thereby indicating that fuel oil based units would emerge efficient if domestic fuel oil price is truly integrated with the international price.

Table 2: Nominal and Effective Protection Coefficients of domestic urea industry, feedstock-wise for the selected years

	Nominal Protection Coefficients(NPCs)			Effective Protection Coefficients(EPCs)		
	1991	**1995**	**1999**	**1991**	**1995**	**1999**
Naptha based urea	1.19	0.79	1.80	2.42	0.84	9.09
Fueloil based urea	1.13	0.72	1.62	1.09	0.59	2.22
Gas based urea	1.11	0.59	0.09	0.87	0.60	1.93

The naptha based urea industry presents a different picture; the NPCs show a blanket protection, extent of protection further increases with the integration of domestic and international market of naptha. The protection coefficients, thus, indicate that naptha-based urea industry would not emerge competitive even if naptha were supplied to the domestic manufacturers at the international price. This particular finding with regard to the naptha-based units is based on the average cost data; this requires further probing with the detailed cost data for the units before arriving at the final conclusion. The unit-wise detailed cost data is difficult to obtain from the Fertiliser Industry Coordination Committee (FICC).

Following the Government decision of integration of domestic feedstock prices with the international market, fuel oil and naptha is actually over priced in the country. For instance, in the year 1999 domestic price of naptha was 15 per cent higher than the international price, while that of fuel oil was 25 per cent higher than the international price.

Contrary to it, comparison of domestic price of gas with the international price indicates that the domestic gas price was depressed to the extent of 30 per cent along the HBJ (Hazira-Vijaypur-Jagdishpur) pipeline, and around 54 per cent at the land-fall points during the year 1999.

In spite of the initial hiccups in integration of the domestic feedstock prices with the international prices, one expects domestic feedstock prices to closely represent the international price in a globalising world. This may alter relative position of domestic urea manufacturers with respect to the unit cost of production; some of the fuel oil and napth-based units, which are towards the higher end of the cost, may not remain so with proper integration of domestic and international market for feedstocks. Any assessment of import options for urea must therefore consider the production cost based on the import parity price of feedstock, referred here as the economic cost of urea production[x].

Economic Cost of Urea Production

The economic cost of urea production has been derived from the existing cost data supplied by the FICC, successively referred here as financial cost. The year 1999 is the most recent year for which some breakup of cost is available from the FICC; based on these data, an attempt has been made to project the economic cost of urea production for the year 2003. The projection assumes input-output structure similar to that in the year 1999. The study considers Rs. 62 per US $ as likely exchange rate for the projected year 2003 (Bhattacharya et al 2000).

The economic cost has been projected for three price situations since world price of feedstocks as discussed earlier is highly volatile. Based on the past trend of the feedstock prices; average, maximum and minimum feedstock prices have been identified (Box 2).

Box 2: Likely Import Parity Price (in US$) of Feedstock in different Situations during the Projected Year (2003)

Feedstocks	Average	Maximum	Minimum
Naptha	198	238	136
Fuel oil	115	138	72
Gas	136	153	102

Note: Naptha and Fuel oil prices are in US$ per ton, whereas gas prices are in US$ per 10 MKCals

The economic cost of urea production has been worked out for these price situations. The costs other than feedstocks, which are non-tradable in nature are supposed to increase at a rate of 6

per cent per annum during the reference period. This is the rate at which non-tradable part of the cost has been growing during the '90s. The economic costs so derived for the reference years will be used for assessing import options for urea.

Some of the salient points about unit-wise financial and economic cost of urea have been discussed in brief. In general, production cost is less for the gas based urea units. The unit cost decreases with the age of the plants[xi], the component of capital cost reduces drastically after 15 years of installation. The weighted average cost of manufacturing units has been significantly lower than the simple average cost indicating that most of the high cost plants are in fact the smaller units.

In the average feedstock price situation, cost of urea production has grown at a rate of 5 per cent during the projected period. With integration of domestic and international market inflationary trend in the traded commodity is supposed to reduce; however, a deteriorating exchange rate (as predicted by Bhattacharya et al 2000) has caused overall increase in the average cost of urea production.

The average cost of producing urea increases with the economic pricing of feedstocks, since gas price increases in the free-trade scenario and around 60 per cent of domestic urea manufacturing capacity is gas-based. The disparity in unit-wise cost reduces as we switch over from financial to economic cost of urea production. In the domestic feedstock market, distortion has been in favor of gas and gas is also technically the most efficient feedstock for urea; therefore financial cost of gas-based urea is towards the lower end in the cost hierarchy of the urea-manufacturing units. Whereas, naptha and fuel oil is over-priced in the country as a consequence disparity between the extreme cost units increases. Alternatively, with the economic pricing production cost of gas based unit increases and disparity between unit cost decreases.

Section III: Evaluating Import Options

The existing trade policy with respect to urea is often criticized on the ground that the country is incurring a significant amount of cost by relying on domestic production capacity and not importing cheap urea. As of now, India imports only deficit amount of urea through the STEs (for details see Annexure). A corollary to this criticism is bulk of fertiliser subsidy is fertilizer-manufacturers rather to the farmers. In this backdrop, present study

attempts to evaluate import options. The suitability of import options depends on the domestic market dispensation, and evaluation of alternate options in the domestic market is beyond the scope of the present study; alternate trade options will therefore be evaluated by considering domestic policy as pre-determined (for details see Annexure).

Level of Self-reliance and Pooled Cost of Urea

No one can gainsay that total cost of obtaining urea from domestic and external market would be an important determinant for adjudging the trade policy. An attempt has therefore been made to assess costs (financial and economic) of obtaining urea at different level of import intensities (import as per cent of domestic consumption). During last one decade, import intensity in urea has varied from zero (1989-90) to a maximum of 40 per cent in the year 1995-96. In that particular year India had accounted for around one-fifth of the world urea market; and import of this magnitude is said to have influenced international price of urea, though this was not established with the annual data in the present study. Moreover, protection coefficients indicate that the gas based urea units (accounting for around 55 per cent of domestic urea production) are not inefficient.

Considering these facts, import intensity beyond 50 per cent is not assumed for an essential commodity like urea, at least in the present circumstances. The other import intensity levels have been parameterized between 50 to 100 per cent with an interval of 10, the level of self-sufficiency for urea has been assumed at 50, 60, 70, 80, 90, and 100 per cent. Based on the levels of self-sufficiency, quantity of import and the pooled cost of urea would vary.

The pooled cost of urea comprises of cost of domestically obtained urea and imported urea. The cost of domestically obtained urea is based on an increasing supply function; whereas, cost of imported urea is based on inelastic supply function. The assumptions imply that cost of obtaining additional urea from the domestic source will increase at an increasing rate, while cost of obtaining additional urea from the international market will increase at a constant rate. The study, thus, assumes that urea demand from India would not affect the international price of urea; this has also been found true with the annual data.

The world urea price as discussed earlier is highly volatile, therefore pooled cost has been worked out in three import parity price situations: low, medium and high urea price in the world market. Trade-off between the level of self-reliance and pooled cost of urea has been studied for two reference years, 1999 and 2003. International price in the year 1999 has been abnormally low; this was the lowest figure in last 25 years and was lower than even the low range of international prices considered in the present study. In order to depict the actual situation and simultaneously portray the likely situation with the existing cost (financial) of production, trade-off has been obtained for four price-situations during the year 1999, and three price-situations during the year 2003. It is important to note that trade-offs in the year 2003 are based on the economic costs of urea, while trade-off for the year 1999 is based on the financial costs.

Table 4: Trade-off between the Levels of Self-sufficiency and the Pooled Cost of Obtaining Urea from Domestic and External Sources

Self-reliance	Financial cost of obtaining, 1999				Economic Cost of obtaining, 2003		
Levels (%)	Actual	Average	High	Low	Average	High	Low
50	99.53	126.31	139.70	112.92	219.10	241.59	196.50
60	102.23	122.29	132.32	112.26	219.01	238.13	199.89
70	106.96	122.62	130.45	114.79	220.46	234.93	205.99
80	114.39	124.54	129.62	119.46	223.21	234.82	211.60
90	120.46	126.47	129.48	123.47	227.66	235.47	219.84
100	134.72	135.98	136.61	135.35	235.10	238.77	231.33

Note: Average, High and Low cost of obtaining urea is based on the average, higher and lower ranges of international price of urea during the period 1980-99; whereas actual cost is based on the world price during the year 1999, which was the lowest in the last 20 years and has not been captured even in the lower range of international price considered in the present analysis. The cost of obtaining urea during the year 1999 is based on the financial cost while for the year 2003 is based on the Economic cost of obtaining urea from the domestic as well as external market.

Box 3: Likelihood of International Price (cif) of Urea

Price Situations	World Price (US $ per ton	Probability
Average	170	0.6
Low	140	0.2
High	200	0.2

Trade off between the level of self-sufficiency and pooled cost (economic / financial) of urea indicates that maintaining a self-sufficiency level to the extent of 80 per cent of the existing production capacity is not undesired, especially when the international price (*cif*) goes beyond US$170 per ton. The maintenance of self-sufficiency, however, incurs significant cost to the society in the form of cost-advantage foregone by not undertaking import, when the international price (*cif*) is low at around US$140 per ton. There is a steep increase in the pooled cost of urea, if we go beyond the self-sufficiency level of 80 per cent. This analysis highlights that around 20 per cent of domestic urea-manufacturing capacity at the tail end is not cost-efficient and they are causing steep hike in the pooled cost of urea. Protection to these units, in fact, cause enormous burden on the society. There may be various reasons for this cost-inefficiency, which are beyond the jurisdiction of the present investigation.

An increased dependence on the external market for urea has some other advantages for the country. Several studies show that natural gas is technically the most efficient feedstock for urea; since world trade in natural gas is restricted, a country is supposed to benefit by importing urea from the gas-endowed countries. India, acute deficit in natural gas, can use its scarce gas alternatively. Import, however, must be in regard with the status of the domestic urea industry.

It appears from the above analysis that around 80 per cent of the existing urea manufacturing capacity is not inefficient and is not a burden on the society; these units need protection from undue fluctuation in the world urea and hydrocarbon markets. Tariff is undoubtedly the most WTO-compatible way of protecting the domestic urea industry. The domestic urea industry is cost-heterogeneous; in this situation free import with tariff would lead to super normal profit for the selected low-cost mainly gas-based units, while a problem of survival for other units. In the given domestic dispensation, tariff-rate-quota (TRQ) is the right way of protecting domestic urea industry. Imposition of TRQ also requires estimation of prohibitive tariff beyond certain level of import. Present study attempts to work out the range of such customs tariff for urea.

Desired rate of Customs Tariff

The economic cost of production has been used to work out the suitable customs duty that would provide protection to around 80 per cent of domestic urea industry. The rate of customs duty would, however, vary with the domestic cost of production and the world price of urea. The world price of urea, as discussed earlier, has been highly unstable. There has been sign of instability in the production cost of urea with the integration of domestic and international market for feedstocks. The economic cost of urea production has been projected for three feedstock-price situations for the year 2003.

The projected costs of production have been compared with the import parity price of urea. Import parity price of urea in the present analysis is the delivered-duty-paid (DDP) price at the West coast of India. This is based on the past trend in the international price (fob price at the Middle-East) of urea. The costs associated with the import of urea, such as, freight, insurance, port-handling charges have been assumed at 20 per cent of the fob price.

Box 4: Customs Duty *(ad-valorem)* for a Range of International Prices (US$ per ton) in different Feedstock-Price (FP) Situations

FP Situations	**International Prices (fob)**		
	US$90	US$140	US$180
Average	113	30	0
High	138	45	9
Low	69	2	0

The comparison between import parity price and domestic cost of production shows that an import parity price of US$ 225 provides sufficient protection to the domestic urea industry. The sufficient protection here means protection to around 80 per cent of the urea-manufacturing units, even in the worst condition when production cost is high because of high international price of feedstocks. Once the import parity price that provides desired protection to the domestic urea industry is determined, extent of customs duty- *ad valorem* or specific has been worked out for a specific international price of urea. The study found that in an average feedstock-price situation, import duty of 45 per cent would provide desired protection to the domestic urea industry, when the international price is US$140 (fob) per ton of urea. Since international price of urea and feedstocks used in the production of urea are volatile, protection to domestic urea industry requires a variable import tariff (Box 4).

Tariff Rate Quota

The opening up of import with the variable tariff, however, requires matching reforms in the domestic urea market primarily to make the domestic industry cost-homogeneous as suggested by various committees[xii]. In the existing price and subsidy regime, when domestic urea-manufacturing units are insulated from the external market and import is primarily to match deficit in domestic consumption and production of urea, tariff rate quota (TRQ) would be more suitable for the country in the existing price cum subsidy regime.

The most important decision while imposing TRQ would be the quantity of import to be allowed at the minimum tariff. In urea, as of now, deficit is being imported by the STEs. In the year 2003, the country is supposed to be deficit to the extent of 2.5 million ton of urea under specific assumptions[xiii]; import quota of 2.5 million ton therefore, appears to be the right amount for earmarking quantity of import in TRQ during the reference year.

In TRQ, prohibitive rate of tariff is the next most important parameter. Import tariff (*ad valorem*) for adverse situation (calculated earlier) can indicate about the prohibitive rate of import tariff. The adverse situation for domestic urea industry in the present context means the situation when international prices for feedstocks are moderately high while that of urea is low. Previous analysis suggests that the tariff rate, which would provide protection to domestic urea industry from all sorts of adverse situations in the international market, will be as high as 138 per cent.

Differential Concessions

Once the industry is cost-homogeneous, a uniform concession to all domestic urea-manufacturing units can be provided for some of the disadvantages[xiv] they face as compared to the urea producers of other countries. As of now, farm gate price of urea is significantly lower than the average international price of urea; therefore imported urea would also require concession. Like phosphatic fertilizers, country can think of differential concession regime for urea; in this regime imported urea will also be provided with concessions, this concession would, however, be lower as compared to the domestic manufacturer. The differential concession can be linked with the difference in the domestic and international price of feedstocks. This may be continued in the name of providing level playing field to

the domestic producers. A flat rate of concession to all the domestic manufacturers would encourage them to improve their cost-efficiency.

Import policy options, discussed above, must be in commensurate with the domestic market situation. A brief account of import options in the given market dispensation has been summarized in the Box 5. Likely domestic situation in the given time period, presented in the Box 5, is based on the recommendation of the Expenditure Reforms Committee, which our Finance Minister declared to adopt in the Parliament during his budget speech in the year 2001.

Box 5: Import Policy Scenarios for Urea, in brief

Period	Likely Domestic Situation	Import Policy
Till March 2005	Cost heterogeneous	Tariff Rate Quota
Ap'l 2005 to M'ch 2007	Cost homogeneous	Differential Concessions
Ap'l 2007 onwards	Domestic price decontrol	Variable Tariff

Note: Likely domestic price scenarios are based on the recommendations of Expenditure Reforms Committee

One can infer from the above discussions that as long as production cost of urea remains heterogeneous, tariff-rate-quota (TRQ) is the most likely option for import. Once domestic urea industry emerges cost-homogeneous, imports may be liberalized with differential concessions for a limited period. During this intermediate phase, performance of domestic industry may be gauged, any corrective measure if needed, must be undertaken; this period must be utilized by the domestic industry to adjust from impending competition. Beyond this phase (April 2007) import of urea must be liberalized in its true sense, but with a variable tariff. A WTO-compatible protection to domestic industry is desired since 80 per cent of urea manufacturing units are not cost–inefficient and is not a burden on the society, while international price of urea is highly volatile.

References

Bhattacharya B. B. and Johnson S. (2000) *An Economic outlook for India in 2000-1 and medium term growth scenario, 2001-4*. Development and Planning Centre, Institute of Economic Growth, Delhi – 110007.

Fertiliser Association of India (FAI) *Fertiliser Statistics*- several issues, an annual publication on statistics related to fertiliser, published by the FAI, New Delhi.

Government of India (1998-99) *Economic Survey*- various issues, published from the Ministry of Finance, GOI, New Delhi.

Government of India (1998) *Report of the High Powered Review Committee on Fertiliser Pricing Policy,* Department of Fertilisers, Ministry of Chemicals and Fertilisers, GOI, New Delhi.

Government of India (1999) *Rationalising Fertiliser Subsidies*- a part of the Report of the Expenditure Reforms Committee, submitted to the Ministry of Finance, GOI.

Goyal Arun (2002) *Easy Reference Customs Tariff 2001-2002, (edited)* Academy of Business Studies, New Delhi.

Gulati A. and S. Narayanan (2000) "Demystifying Fertiliser and Power Subsidies in India" *Economic and Political Weekly*, March 4, 2000.

Little, I.M.D. and J.A. Mirrlees (1974) *Project Appraisal and Planning for Developing Countries.* London, Heinemann.

Scandizzo, P.L. and Colin Bruce (1980), *Methodologies for Measuring Agricultural Price Intervention Effects.* World Bank Staff Working Paper No. 394, World Bank, Washington D.C.

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Annexure

I.1: The Domestic Environment, and Retention Prices

The most important event in the arena of Indian fertiliser policy has, probably, been the adoption of retention price cum subsidy (RPS) scheme in the mid '70s. Retention Price (RP) principally assures fertiliser producer a cost plus 12 per cent post tax return at an output level of 85 to 90 per cent of rated capacity. The Marathe Committee, which actually recommended RPs has suggested for industry-wide norms considering urea manufacturers using same feedstock as a homogeneous industry. Government has, however, adopted the RPs on plant basis, as the costs of units using the same feedstock also vary according to the location and age of plants. Retention price includes the cost of variable inputs, conversion costs, selling expenses and capital related charges. Government notifies the statutory sale price (what the farmers pay, that is, the farm gate prices) for urea, uniform throughout the country. Under the RPS scheme, difference between the statutory sale price (adjusted for freight and dealer's margin) and retention price of urea is being paid as subsidy.

The existing price dispensation has contributed substantially to the growth of the domestic fertiliser production, as it ensures an adequate return on investment to the entrepreneurs. This has however encouraged production by adopting different technologies and as a result urea industry has emerged cost heterogeneous. Apart from it there is growing realization that the very nature of the RPS, that is, administered and non-competitive has encouraged inefficiency in the production process of urea. There are other sources of inefficiency; there has been no standard project cost for a certain capacity plant of urea. This induces manufacturers to inflate project cost and earn more money through higher retention prices, as RP assures 12 per cent of the capital charges. It was evident that certain gas-based plants have surplus capacities as capacity utilization has reached unbelievable level such as 140 per cent for the selected plant (Annexure Table 1). Whereas, the RPS assures 12 per cent return at 90 per cent capacity utilization, thus certain manufacturers have earned profits significantly higher than the earmarked level.

In order to stem out the problems associated with the fertiliser pricing, specifically urea, a High Power Committee under the chairmanship of Prof. C. H. Hanumantharao was commissioned in the June 1997. This committee has given its recommendations in March 1998. Successively, Government concerned at the growing fiscal deficit commissioned Expenditure Reforms Committee (ERC) in the year 2000 to undertake reforms in government expenditure. Since a significant proportion of government expenditure goes in subsidising fertilisers, specifically urea; the ERC highlights need to reform the existing pricing system in urea so as to reduce revenue expenditure of the Government. The recommendations of the ERC related to pricing of urea have been discussed below.

As per the ERC, goal of reforming the existing pricing policy in urea will be to bring fertiliser prices charged from farmers to the level of import parity price. In this process, small farmers real income, food production of the country, and balanced use of N, P, and K must not be affected. The ERC suggests simultaneous increase in fertiliser and agricultural output prices to offset the effect on farmers. The committee suggests two possible ways of protecting small farmers from this price hike. The small farmers generally produce to consume rather market the agricultural commodities. The possible ways to protect small farmers, as per the ERC are; first, to introduce dual price scheme under which all cultivator households are given 120 kg of fertilisers at subsidized prices; second, to expand Employment Guarantee Scheme and Rural Works Program to provide additional incomes to small farmers. The ERC has delineated discreet steps with suggested time period in parentheses, illustrated below, to make domestic urea industry cost-homogeneous and to integrate domestic urea prices with the import parity price.

Step 1 (beginning Feb 1, 2000), The existing urea manufacturing units have been grouped into five categories: pre-1992 gas based units, post-1992 gas based units, naptha based units, FO/LSHS based units and mixed feedstock units. The ERC suggests for scrapping the individual retention price scheme, and in its place a Urea Concession Scheme with a fixed amount of concession for each of these groups were to be introduced. Simultaneously, urea-manufacturing plants may be freed to get feedstock from wherever they want, including imports. Considering large fluctuations in the import price of feedstocks, group-wise concessions were to be revised quarterly. The revision in issue price to farmers should have been done every season, rather than every three months.

Step 2, (beginning April 1, 2002), the concessions will be reduced to reflect the possibility of reasonable improvement in feedstock usage, efficiencies and reduction in capital related charges.

Step 3, (beginning April 1, 2005) the ERC considers imported liquefied natural gas (LNG) as the best possible feedstock for manufacture of urea. Therefore, all non-gas based urea plants may be modernized to use LNG as feedstock at this stage. For plants, which do not switch over to LNG as feedstock, only the level of concession that the unit would have been entitled to if it had switched over to LNG would be allowed.

Step 4, (beginning April 1, 2006) the urea industry may be decontrolled by this time. The commission recommends a 7 per cent increase in the price of urea in real terms, every year from April 1, 2001. This way the open market price will reach Rs.6903 by April 1, 2006, a level at which industry can be freed from all controls and be required to compete with imports, with variable levy ensuring availability of such imports at the farm gate at Rs.7000 per ton of urea. At this stage, no concession will be necessary for the gas based plants, whereas a feedstock differential concession may be given to all non-gas based urea plants with that for LNG serving as a ceiling.

These recommendations of ERC will essentially bring about a shift from the existing policy of fixed price and variable subsidy to producers, to a framework of fixed subsidy and flexible farm gate price subject to ceiling. A different kind of control regime for favorable distribution of fertiliser to small and marginal farmers will, however, emerge in this process. Though the Finance Minister in his budget speech (2001-2002) has reiterated his commitment to implement the recommendations of the ERC, there has hardly been any progress. For instance, the ERC calls for 7 per cent increase in the real prices of urea every year, this has not come about in the recent years. Moreover, much-hyped LNG pipeline from countries like, Oman is yet to take off.

It appears that reform in domestic urea market will take some more time. The pressure to liberalize import being a WTO member country is, however, mounting. The situation therefore warrants caution while liberalising imports of urea.

I.2: The External Environment, Differential concessions and Bound rates

India has been a net importer of fertilisers. The dependence on imports has, however, changed over the years. In the '50s and '60s, the country was importing more than 50 per cent of total fertilisers consumed in the country. The oil shock in the year 1974 has forced re-orientation in Government approach towards fertiliser production (discussed above). Following adoption of RPS, dependence on import has declined; this decline has been even sharper for nitrogenous fertilizers like urea. The RPS scheme was complemented with the import restrictions for most of the fertilisers. Imports of most of the fertilisers were canalized through various government parastatals. These parastatals were importing fertilisers taking into account the gap between domestic production and consumption of fertilisers.

In the wake of liberalization, imports of DAP, a major phosphatic fertiliser were decanalised in September 1992, and that of MOP, an important potassic fertiliser in June 1993. The decanalisation has affected viability of many domestic manufacturers of DAP. In order to benefit domestic manufacturers over their counterpart, a flat rate of concession (to reduce the consumer price of DAP) which was applicable to both domestic as well as imported DAP, was withdrawn from the imported one. Successively, concession to domestic manufacturers of DAP was increased. Again, in July 1996, concession to imported DAP was introduced to decrease farm gate prices of DAP. The rate of concession was however, different for domestic and imported fertilizer, this is often referred as differential concession regime. The difference in concession between domestic and imported DAP has further increased during the recent years.

Unlike these fertilizers import of urea is restricted; this is canalized through State Trading Enterprises (STEs) such as STC, MMTC, IPL. In the 2001 EXIM Policy announcements, urea has been placed in the "watch list of sensitive items". Urea is undoubtedly a sensitive item considering variation in the domestic cost of manufacture of urea. The "watch list" is, however, not a long-term solution. In light of the emerging trade order free-from-quantitative restriction (QRs), a suitable import policy properly linked with the domestic situation is desired. Though the bound rate, the maximum import tariff committed to the WTO, for many fertilizers is as low as 5 per cent; urea has, however, been kept unbound, that is, India can impose any level of tariff on import of urea.

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Table 3: Urea Manufacturing Units (in S.No) with Financial and Economic Cost of Production for the year 1999, and also Projected Economic Cost (Average, Maximum, Minimum) for the Year 2003

Manufacturing Units	Production ('000 tons)	Share	Costs (Rs/ton) in 1999		Projected Economic Costs (Rs/ton) in 2003		
			Financial	Economic	Average	Maximum	Minimum
1	1516.0	7.8	4400.0	6553.0	10142.0	10883.0	8412.0
2	1020.0	5.2	4505.0	6701.0	10365.0	11121.0	8601.0
3	2207.8	11.3	4832.0	5719.0	8504.0	9095.0	7321.0
4	838.0	4.3	5093.0	5952.0	8765.0	9341.0	7613.0
5	323.9	1.7	5193.0	6057.0	8890.0	9466.0	7739.0
6	838.0	4.3	5208.0	7132.0	10658.0	11320.0	9112.0
7	1412.0	7.3	5724.0	6688.0	9834.0	10477.0	8548.0
8	660.8	3.4	6263.0	5632.0	8413.0	9114.0	7011.0
9	854.7	4.4	6987.0	8939.0	12942.0	13614.0	11374.0
10	878.5	4.5	7177.0	9430.0	10280.0	10834.0	9172.0
11	223.0	1.1	7286.0	6350.0	9975.0	11015.0	7894.0
12	956.0	4.9	7407.0	9989.0	10907.0	11541.0	9641.0
13	890.7	4.6	7427.0	9997.0	10916.0	11547.0	9647.0
14	269.0	1.4	7467.0	9443.0	13594.0	14275.0	12007.0
15	535.7	2.8	7780.0	6891.0	10548.0	11536.0	8573.0
16	668.0	3.4	7867.0	9790.0	12979.0	13641.0	11434.0
17	38.5	0.2	8088.0	7154.0	10975.0	12013.0	8899.0
18	393.2	2.0	8313.0	7686.0	12078.0	14006.0	9668.0
19	503.7	2.6	8368.0	7398.0	11358.0	12435.0	9203.0
20	523.7	2.7	8544.0	7959.0	12255.0	13641.0	10005.0
21	66.7	0.3	8546.0	7639.0	11523.0	12531.0	9507.0
22	568.0	2.9	8567.0	7911.0	12476.0	14496.0	9951.0
23	356.0	1.8	8670.0	8077.0	12435.0	14261.0	10153.0
24	591.0	3.0	8708.0	18057.0	12637.0	14640.0	10134.0
25	835.5	4.3	9625.0	8846.0	14128.0	16524.0	11133.0
26	312.0	1.6	9665.0	8886.0	14179.0	16575.0	11183.0
27	183.0	0.9	9688.0	8991.0	13986.0	16131.0	11306.0
28	732.9	3.8	10162.0	9544.0	14368.0	16270.0	11989.0
29	260.0	1.3	10335.0	9668.0	14715.0	16767.0	12149.0
Total / Average	19456.3	100.0	7424.2	7826.0	11444.0	12621.0	9274.0

Note: The costs are in Rupees per ton of urea. Projected Economic costs are based on average, maximum and minimum prices of feedstocks. In the last row it is the weighted average of the production costs, for other columns it is the total.

[i] One or other WTO member countries may object to the existing practices and there are chances that India may have to dismantle the present arrangement without making suitable reforms in the domestic market, as it happened in the case of removal of QRs following the decision of the Dispute Settlement Body of the WTO.

[ii] One ton of urea requires 7 MmKcals of naptha, 9.75 MmKcals of fuel oil and only 6MmKcals of gas.

[iii] Various feedstocks used in the manufacture of urea, for instance, naptha and fuel oil are derived from the mineral oil. Price of natural gases is also highly correlated with the price of mineral oils, as these are the prime sources of fuel energy.

[iv] In most of the gas-endowed countries of the world urea-manufacturing capacity is under-utilized, actual production in most of these countries is less than 50 per cent of the aggregate capacity of the plant in that country.

[v] In the year 2000 there were 32 urea-manufacturing units wherein various expansion units of a plant have been considered separately. Feedstock-wise distribution of these units are: gas-based (12), naptha-based (10), fueloil-based (6) and 4 units are mixed energy based, that is, they can use both gas and naptha as feedstocks.

[vi] The coal-based units ceased to operate since the year 2000 because of high cost of production; this unit has therefore, received little attention in the present discussion.

[vii] During the earlier years feedstocks were supplied to the fertiliser units at some concessions, essentially to maintain low feedstock-fertiliser prices. In the year 1996 attempts towards liberalization of domestic prices of feedstocks were made, feedstocks prices were integrated with the import parity prices and prices were uniform for all the users of these hydrocarbons. In naptha and fuel oil, integration is said to be complete, while in natural gas it was supposed to be completed by 2002 in few discreet steps.

[viii] Nominal Protection Coefficient (NPC) is the ratio of domestic to world prices, and considers distortion in output price only. Whereas, Effective Protection Coefficient (EPC) takes care of distortion in input as well as output prices by considering value additions. (see Scandizzo and Bruce 1980)

[ix] In the year 1999 world urea price was one of the lowest in the last two decades. The world price was high during the year 1995, the other reference year (1991) represents average situation.

[x] The economic cost referred here is the cost of production of urea if tradable inputs are charged at the import parity price (for details see Little and Mirrlees (1974)). The import parity price here is the Delivered Duty Paid (DDP) price of the imported feedstocks. The study assumes feedstock as the only tradable inputs as this accounts for more than 90 per cent of tradable inputs in the cost structure of urea.

[xi] One of the important cost components is the cost of capital comprising loan and interest on it. The capital cost decreases in a repayment schedule of 15 years, beyond this period capital cost is only marginal; therefore unit cost of urea production decreases after 15 years.

[xii] The High Power Committee headed by Prof. Hanumantha Rao deliberates on this issue; the Expenditure Reforms Committee further delineates steps (year-wise) to make the industry cost-homogenous.

[xiii] The study assumes that the dependence on imports would increase as the country is discouraging fresh investments in urea industry. There are few undergoing projects in urea to increase production, but there have also been instances of existing units being shut down (for instance, during the year 2000 three units shut down which were in operation during the year 1999). Considering these facts production as in the year

1999 is supposed to continue over the reference year 2003. The consumption of urea is supposed to grow at an annual rate of 2.5 per cent during the projected period.

[xiv] One of the most important disadvantages domestic manufacturing units suffer is the feedstock price disadvantage. Feedstock prices even if truly integrated to the import parity price requires discount to the extent of differences in the CIF and FoB costs of feedstocks. Alternately, one can argue that feedstocks may be provided to the domestic fertilizer manufacturer at the export price (FoB) rather the import parity price (CIF), since most of the feedstocks are sourced indigenously, and the country is occasional exporter of feedstocks. The cost of other items especially capital and electricity is also said to be higher than many urea-exporting countries. In contrast one can argue that labour is cheap in India, though not so in the organized sector. Considering these facts, it is not easy to assess the exact magnitude of the differential concession to the domestic manufacturers on account of disadvantages to these units.