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AN APPRAISAL OF FERTILIZER SUBSIDY IN INDIA

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ABSTRACT

This paper tracks the genesis and the evolution of fertilizer subsidy. Paper deals with Nutrient Based Subsidy scheme in particular and analyses its role in changing the fertilizer use pattern and its effect on fertilizer subsidy bill. Paper also analyses the reasons for increase in fertilizer subsidy bill and governments response to it. Problems caused by fertilizer subsidy have also been highlighted but instead of doing away with fertilizer subsidy better policy making has been advocated for fertilizer sector as government's policies till now has been mostly in reaction to situation rather than a well thought long term policy framework.

KEYWORDS

nutrient based subsidy (NBS), NPK (nitrogen, potassium and phosphorus) ratio, fertilizer subsidy, fertilizer Pool equalization charge (FPEC), fertilizer retention price Scheme (FRPS).

INTRODUCTION

Fertilizer prices are administrated by government in most countries to fulfill two main objectives firstly to provide fertilizers in domestic market at an affordable and stable price so that agriculture productivity can be increased by using higher amount of fertilizers and secondly to encourage domestic industry by ensuring a fair return on investment. Similar has been the case in India. India currently produces 80 percent of its domestic urea requirement but is largely dependent on imports for potassium and phosphorus fertilizers (Economic survey 2013-14), potassium fertilizers is mostly imported due to lack of raw material in India. Fertilizer subsidy has played an important role in benefiting farmers and consumers at the same time by ensuring reasonable and stable fertilizer prices , at the same time governments fertilizer policy has also encouraged domestic production of fertilizer by ensuring a fair return on investment .Fertilizer subsidy has been criticized as it is a huge fiscal burden on the government and is responsible for deterioration in soil health quality caused by imbalanced use of fertilizer, this paper analyses all these.

OBJECTIVES OF THE STUDY

1. To analyze the effect of Nutrient Based Subsidy (NBS) on fertilizer subsidy bill.
2. To analyze the effect of Nutrient Based Subsidy (NBS) effect on use of NPK ratio.
3. To analyze the benefits and adverse effects of Fertilizer subsidy.

RESEARCH METHODOLOGY

This is a descriptive analytical study based on secondary data taken from Fertilizer Association of India, Economic Survey, Government of India and various another sources.

GENESIS AND EVOLUTION OF FERTILIZER SUBSIDY

In India application of chemical fertilizers was first started in 1920's in tea plantation in a limited scale, but it was only in 1943-44 when measures were undertaken to promote use of fertilizers on a larger scale .However till mid 1960's government provided little or no subsidy as prior to 1965 Central Fertilizer Pool (CFP) procured all the fertilizer i.e. both domestic and imported and CFP regulated the distribution price. There was little or no subsidy as CFC made profit in 18 years between 1945-46 to 1963-64. After 1965 in order to encourage domestic production of fertilizer government stopped procurement of domestic fertilizer by CFP and allowed domestic manufacturer to market their products, but prices mostly remained fixed by government. But there were two spikes in fertilizer prices one in 1964-65 due to devaluation of rupee and second in 1974-75 due to increase in oil and gas prices in proceeding year. The price increased both for imported and domestically produced fertilizer but the price increase was much more for imported fertilizer. So in 1974 government introduced Fertilizer Pool Equalization Charge (FPEC) whereby domestic manufacturers were to contribute per tonne into FPEC which was used to subsidize imported fertilizer but the funds in FPEC were not enough to cover the government subsidy, so government had to contribute towards it. This can be said to be the starting point of fertilizer subsidy in India and which was between 1973-74 and 1975-76 nothing but an import subsidy (Jaime Quizon,1985). In order to promote domestic fertilizer industry and to shield domestic consumers from fluctuating international fertilizer prices, government in 1977 introduced 'Fertilizer Retention Price Scheme ' (FRPS) on recommendation of Maratha committee (Fertilizer policy, GOI), under FRPS retention price was fixed for each plant, which guaranteed a post tax 12% return on net worth of plant. Apart from encouraging domestic production of fertilizer it also started subsidy for domestic fertilizer production. Indian fertilizer subsidy policy since 1973-74 has been two pronged, it seeks to make fertilizer available to farmers at affordable and stable price , it also seek to increase domestic fertilizer production by ensuring a fair return to domestic fertilizer producers. FRPS helped in increasing fertilizer production by developing domestic industry and it also helped in increasing the consumption of fertilizers, however it is criticized for promoting inefficiency thus leading to huge fiscal burden of subsidies. In early 1990's India faced twin problem of high fiscal deficit and BOP crisis , to counter it government increased the urea prices by 40 percent .Government was also forced to reconsider its fertilizer policy as in 1990-91 fertilizer subsidy had reached Rs 4389 crore which was 0.85 % of GDP of that year. In 1991 Joint Parliamentary Committee on Fertilizer Pricing was set up, the committee submitted its report in 1992 , the committee did not recommend total deregulation but recommended for decontrolling phosphorus(P) and potassium(K) fertilizers however the committee was against withdrawal of Retention Price Scheme for urea. Then Finance Minister Manmohan Singh pushed hard to eliminate urea subsidy also, but most fertilizer companies lobbied against it, also legislators resisted withdrawal of urea subsidy as they feared backlash from farmers. Government implemented committee’s recommendations. Despite the earlier 40 percent increase in urea prices in 1991, it was still cheaper than deregulated phosphorus and potassium fertilizer, so farmers begin to use more of urea. ''This is when the imbalanced use of fertilizers began '' (Pratam Narayan ex director general of Fertilizer Association of India). This change in pricing pattern led to decrease in consumption of potassium and phosphorus fertilizers and increase in consumption of nitrogen fertilizer. To avoid this imbalanced use of fertilizers government introduced ad hoc Concession scheme for phosphorus and potassium fertilizers.

Further in order to rein the urea subsidy and to make urea units more efficient and globally competitive government introduced New Pricing Scheme (NPS) for urea units in 2003, currently "Modified NPS 3" has been notified in April 2014. Government has also notified New Investment Policy-2012 to facilitate fresh investment in urea sector.

INTRODUCTION OF NUTRIENT BASED SUBSIDY (NBS)

Despite above measures taken by the government fertilizer subsidy has remained high and had increased from Rs 28019 crore in 2006-07 to 99494 crore in 2008-09 which was 1.78 % of total GDP at market price in 2008-09.This level of fertilizer subsidy was totally unsustainable and forced the government to re think on its fertilizer subsidy model. So government shifted from Product Based Subsidy (PBS) to Nutrient Based Subsidy (NBS) in 2010 with twin objectives 1).To address NPK nutrient imbalance and lack of secondary and micro nutrients ,through use of fertilizers on specific soil moisture conditions and crop needs(economic survey 2013-14) 2).To limit fertilizer subsidy burden of government. Under NBS companies are given fixed amount of subsidy based on nutrient quantity and are allowed to price their fertilizer according to market price. "The intention behind introduction of NBS was to increase competition among fertilizer companies to facilitate availability of diversified products in the market at reasonable price" (Fertilizer policy, department of Fertilizer, Ministry of Chemical and Fertilizer, Government of India). However due to political compulsions urea has been kept out of NBS.

However NBS could not achieve either of its objectives as it did not lead to any decline in fertilizer subsidy while on the other hand it led to worsening of soil nutrient quality. Since launch of NBS there has been an increase in average prices of phosphorus and potassium fertilizers from Rs 10,000 per mt in 2010 to Rs 25,000 per mt in 2013 (Himanshu ,Associate professor , JNU) , these prices have increased due to increase in fertilizer prices in international market and due to depreciation of Rupee with respect to US Dollar. Moreover there were not adequate number of soil testing facilities and not much awareness among farmers regarding soil testing this coupled with differential price of fertilizers was main reason for wrong use of fertilizer ratio and thus deterioration in soil nutrient quality. Farmers demand for fertilizers is more sensitive to prices ,one estimate suggest that farmers demand for fertilizer fall by nearly 6.4% for a 10% increase in fertilizer prices (Dholakia, R.H and Jagdip Majumdar, ''Estimation of Price Elasticity of Fertilizer Demand in India'',2014, Working Paper). Between 2009-10 and 2012-13 the use of fertilizers has been skewed towards urea since the starting of NBS in 2010 (Economic Survey 2013-14 Table 8.5 pg no. 143) , urea consumption has increased to 66% of total fertilizer consumption in 2012-13 from 59% in 2010-11(Economic Survey 2013-14).''The pricing of subsidized fertilizers is also probably responsible for higher usage of straight fertilizers and skewed usage of nutrients'' (Report Of Working Group On Fertilizer Industry For The Twelfth Plan, 8).The NBS role out of was flawed since urea was kept out of its ambit (Twelfth Five Year Plan , Volume 2:14).NPK ratio has been more than the recommended 4:2:1 even in 2009-10 and NBS has led to its further imbalance due to indiscriminate use of urea . According to planning commission NPK ratio has become worst in agricultural states like Punjab (61.9: 19.3: 1) and Haryana (61.4: 18.7: 1) between 2010-13. According to Ashok Gulati "This kind of ratio is a disaster, it is keeping India from reaching the production levels that the hybrid seeds have the power to yield”. Apart from imbalance use of NPK, there has been a decrease in fertilizer consumption per hectare from 140 kg in 2010-11 to 128 kg in 2012-13(source Economic survey 2013-14). In absolute terms fertilizer consumption in India decreased from a peak of 55 mt in 2011-12 to 47 mt in 2013-14,there has been a decline in consumption of non urea fertilizers by 9 mt on other hands urea consumption has increased marginally by 1 mt between 2011-12 to 2013-14 .NBS neither benefited the government nor the farmers ,as there has been no or little decrease in fertilizer subsidy ,on the other hand farmers lost due to increase in fertilizer prices and decrease in soil nutrient quality. The decrease in phosphorus and potassium fertilizer subsidy has been more than neutralized due to increase in urea consumption and hence more subsidy(Fertilizer Policy , Department Of Fertilizer, GOI) thus defeating the second objective of NBS which was to decrease the fertilizer subsidy bill for government. Fertilizer subsidy has increased from 64,032 crore in 2009-10 to 72,970 crore in 2014-15.

EFFECTIVENESS OF NBS

However this earlier description of NBS does not depict the full picture of the effect of NBS. Fertilizer subsidy has decreased in terms of percentage of GDP from 1.73% in 2008-09 to 0.56% of GDP in 2014-15 and it has been constantly decreasing as a percentage of GDP since 2010.The rate of increase of fertilizer subsidy in absolute terms has decreased after launch of NBS. Fertilizer subsidy as a percentage of GDP has decreased since 2008-09 when it peaked at 1.73 % of GDP to a current level of 0.56% of GDP in 2014-15. So NBS cannot be said to be a total failure. Further there has been a continuous decrease in phosphorus (P) and potassium (K) fertilizer since 2010, subsidy on P and K fertilizers have decreased from Rs 39425 crore in 2009-10 to Rs 24670 crore in 2014-15 so NBS has been successful in not only containing but also decreasing the subsidy bill for P and K . On the other hand the increase in fertilizer subsidy bill has been entirely due to increase in urea subsidy bill which has been largely kept out of the ambit of NBS. Subsidy on nitrogen fertilizer has increased from Rs 24337 crore in 2010-11 to Rs 47400 crore in 2014-15. In percentage terms urea subsidy has increased from 36.9% out of total fertilizer subsidy in 2010-11 to 65.7 % in 2014-15 on the other hand share of P and k subsidy has been decreasing both in percentage terms and absolute terms, it has decreased from 63.03% of total fertilizer subsidy in 2010-11 to 33.80% in 2014-15 (Government Of India, Department Of Fertilizer).

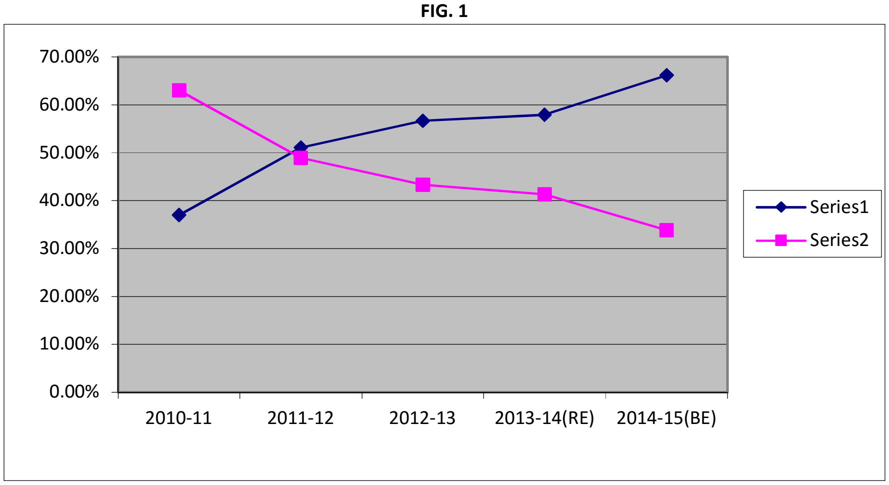
TABLE 1: CENTRAL SUBSIDY ON FERTILIZERS (2009-10 TO 2014-15) (Rs. crore)

Year	Urea	Decontrolled P & K Fertilizers	Total subsidy on all fertilizers *	Urea as a percentage of total fertilizer subsidy	P & k as a percentage of total fertilizer subsidy
2010-11	24,337	41,500	65,837	36.96 %	63.03 %
2011-12	37,683	36,108	73,791	51.06 %	48.93 %
2012-13	40,016	30,576	70,592	56.68 %	43.31 %
2013-14(RE)	41,824	29,427	71,251	57.94 %	41.30 %
2014-15(BE)	48,300	24,670	72,970	66.19%	33.80 %

Source: The Fertilizer Association of India

* Actual subsidy paid

FIG. 1



Series 1: Urea as a percentage of total fertilizer subsidy
Series 2: P & k as a percentage of total fertilizer subsidy

Fertilizer subsidy bill in percentage terms of total subsidy has decreased from 35.9 % in 2010-11 to 27.9% in 2014-15 .This has enabled the government to increase its spending on food subsidy and it has also helped to absorb the increasing petroleum subsidy bill without putting additional fiscal strain on the government as a percentage of GDP, also subsidy as a percentage of GDP has been curtailed to 2% in 2014-15.

TABLE 2 (Rs. crore)

Subsidy Head	2009-10	2010-11	2011-12	2012-13	2013-14 PA	2014-15 BE
Food	58443	63844	72822	85000	92318	115000
Fertilizer	61264	62301	70013	65613	71280	72970
Petroleum	14951	38371	68484	96880	83998	63427
Total Subsidies	141351	173420	217941	257079	NA	260658
Fertilizer Subsidy as percentage of total subsidy	43.3%	35.92%	32.12%	25.52%	NA	27.99%
Total Subsidy as a Percentage of GDP	2.18%	2.22%	2.42%	2.54%	NA	2.02%

(Economic Survey 2014-15 Volume II)

ANALYSES OF FERTILIZER SUBSIDY

''The ultimate aim of subsidizing fertilizer is to provide farmers with access to cheap fertilizers to incentivize usage and cultivation of high yielding variety seeds''(Economic Survey).Ever since its introduction there has been a debate going on about need and effectiveness of fertilizer subsidy as an anti poverty and pro poor farmer measure. Way back in 1979 Committee on Control and Subsidies 1979 had argued that rather than higher output price for agricultural products input subsidy would be more beneficial as small and marginal farmers would not benefit much due to higher price for agricultural products as they have less amount of marketable surplus as compared to big farmers. There are many associated problems with fertilizer subsidy like it being geographically concentrated, skewed in favour of few crops, favouring big farmers. Fertilizer subsidy is mostly concentrated in few states like U.P, Andhra Pradesh, Maharashtra, M.P and Punjab in absolute terms and in fertilizer subsidy per hectare terms Punjab, Andhra Pradesh, Haryana and Tamil Nadu are the major beneficiary but interstate disparity in case of fertilizer subsidy distribution is declining rapidly due to development of rural infrastructure, increase in irrigated area and adoption of high yielding variety seeds in other states (Vijay Paul Sharma, Hrima Thaker,2009,''Fertilizer Subsidy in India : Who are the Beneficiaries?''). 2/3 rd of fertilizer subsidy is consumed by four crops i.e. rice, wheat, sugar cane and cotton in decreasing order. Share of small and marginal farmers is more in fertilizer subsidy in per hectare terms as fertilizer intensity is more for small and marginal farmers except in Punjab (Vijay Paul Sharma, Hrima Thaker,2009,''Fertilizer Subsidy in India : Who are the Beneficiaries?''), so any withdrawal or partial roll back in case of fertilizer subsidy is going to hit small and marginal farmers more severely.

Cheap nitrogen fertilizers have led to their overuse thus causing seepage of nitrate into ground water .Nitrates are water soluble and they seep through soil thus contaminating the ground water. Consumption of nitrate contaminated water poses several short and long term health hazards to people of various age groups (Fewtrell 2004 ;World Health Organization 2004).In India several case studies have shown that in various pockets ground water is contaminated by nitrates (Majumdar 2003) . Indiscriminate application of nitrogenous fertilizer result in groundwater pollution in intensively cultivated areas like Punjab (Singh et al 1987)

Other alternatives to fertilizer subsidy like higher MSP also have their set of disadvantage as a higher MSP for rice and wheat have lead to more cultivation of these water intensive crops in areas where they are not naturally suited, MSP also do not have a widespread reach as food grain procurement is concentrated in few states like Punjab, Haryana, U.P, M.P. Higher MSP can also penalize risk taking farmers who cultivate nontraditional crops which are not MSP supported. On other hand input subsidy like fertilizer subsidy are relatively easily distributed in a more transparent way by subsidizing fertilizer companies.

So rather than doing away with fertilizer subsidy it should be reformed to make it better targeted and more fiscally prudent. Some of the existing and some proposed initiative by the government are welcome step in this direction. One reason for deteriorating soil nutrient quality is non accessibility of soil testing facilities and little awareness among farmers about them; however the launching of soil health card scheme is a welcome step in the right direction which will hopefully solve this problem.

Though fertilizer subsidy continues to be a fiscal drag but the fact cannot be overlooked that it has been an effective method of supporting farmers especially the small and marginal ones. So rather than doing away with fertilizer subsidy government should encourage domestic production of fertilizers as international fertilizer prices are closely associated with international crude oil and natural gas prices, so in long run the only way to decrease fertilizer subsidy bill is to decrease dependence on fertilizer import by increasing domestic production. Shifting from product based subsidy to rationalized fertilizer subsidy across nutrient could be a short term quick fix solution to the fertilizer subsidy problem but rather what we need a a policy that incentivizes domestic fertilizer production. One simple way to decrease the fertilizer subsidy bill and to improve soil nutrient quality is by encouraging the use of organic fertilizer. Currently government only subsidizes chemical fertilizer, this acts as a deterrent for use of organic fertilizer as to avail subsidy farmer has to buy chemical fertilizer. However new proposed scheme like direct bank transfer and products like Neem coated urea are steps in right direction. Products like Neem coated urea could also be helpful in not only decreasing urea subsidy but also be helpful in improving soil nutrient quality by using less urea by slowly releasing it due to Neem coating ,Direct bank transfer to farmers can also boost the use of organic manure as farmer will not be forced to buy chemical fertilizer to avail subsidy.

CONCLUSION

Fertilizer subsidy was started due to compulsions of providing fertilizers to poor farmers at a low and stable price so as to incentivize the adoption of new technology but now it has become a long enduring fiscal burden.NBS has been able to contain the P &K fertilizer subsidy for which it was intended, while the increase in fertilizer subsidy bill has been due to increase in urea subsidy bill which has been kept out of the ambit of NBS. Between 2010 and 2015 the rate of increase in fertilizer subsidy bill has been a lowly 2.5% this has provided adequate room for increase in other subsidies, so NBS cannot be stated to be failure. Fertilizer subsidy is not the fiscal demon it has made to look, it has served many useful purposes like supporting small and marginal farmers by providing fertilizer at low and stable price, helping in adoption of new technology also fertilizer subsidy as a percentage of GDP is constantly decreasing since 2009-10 so what is needed is right policy framing and implication rather than doing away with fertilizer subsidy.

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