



## Reforming the fertilizer sector

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**(MainsGS3:Different types of irrigation and irrigation systems storage, transport and marketing of agricultural produce and issues and related constraints & Issues related to direct and indirect farm subsidies and minimum support prices)**

### Context:

Several attempts have been made since 1991 economic reforms to reform the fertilizer sector to keep a check on the rising fertilizer subsidy bill, promote the efficient use of fertilizers, achieve balanced use of N, P and K (nitrogen, phosphorus and potassium), and reduce water and air pollution caused by fertilizers like urea.

### Increasing subsidy:

- The Economic Survey of 1991-92 noted that fertilizer prices remained almost unchanged from July 1981 to July 1991.
- The Union Budget of July 1991 raised the issue prices of fertilizers by 40% on average.
- But from August that year, this was reduced to 30%, and small and marginal farmers were exempted from the price increase.
- The Economic Survey further noted that even with this 30% increase, fertilizer subsidy remained substantial and needed to be reduced further.
- Due to opposition to increase fertilizer prices, the increase in the price of urea was rolled back to 17% a year later over the pre-reform price.

### Distorting fertilizer sector:

- Distortions in urea are the result of multiple regulations. First, there are large subsidies based on end use—only agricultural urea is subsidised—which creates incentives to divert subsidised urea to industry and across the border.

- Second, under-pricing urea, relative to other fertilisers, especially P & K, encourages overuse, which has resulted in significant environmental externalities, including depleted soil quality.
- Third, multiple distortions—price and movement controls, manufacturer subsidies, import restrictions—feed upon each other, making it difficult to reallocate resources within the sector to more efficient uses.

#### **Disturbed relative prices:**

- The tilting towards urea disturbed the relative prices of various fertilizers and resulted in a big shift in the composition of fertilizers used in the country in favour of urea and thus Nitrogen.
- The ratio of use of N:P:K increased from 5.9:2.4:1 in 1991-92 to 9.7:2.9:1 in 1993-94.
- Farmers tended to move towards balanced use, but policy and price changes reversed the favourable trend a couple of times in the last three decades.
- Thus, due to almost freezing the MRP of urea in different time periods and its rising sale leading to an increase in indiscriminate and imbalanced use of fertilizers.

#### **Environmental concern:**

- The widespread production and use of the common fertiliser chemical urea in agriculture sector has led to alarming levels of nitrogen pollution of surface water and groundwater in many Indian states.
- Concerned with the adverse environmental impact of certain chemical fertilizers, some sections of society suggest the use of organic fertilizers and biofertilizers instead.
- Thus there is a growing demand to provide subsidies and other incentives for organic fertilizers and biofertilizers to match those provided for chemical fertilizers.

#### **Deviated fertilizer use:**

- The composition of total plant nutrients in terms of the N,P,K ratio deviated considerably from the recommended or optimal NPK mix.
- In 2019-20, fertilizer use per hectare of cultivated area varied from 70 kg of NPK in Rajasthan to 250 kg in Telangana and it was 33.7:8.0:1 in Punjab and 1.3:0.7:1 in Kerala.
- This also has implications for inter-State disparities in fertilizer subsidy due to high variations in subsidy content, which is highly biased towards urea and thus nitrogen.
- As a result, the magnitude of fertilizer subsidy among the major States ranges in the ratio of 8:1.

#### **Demand of nutrients:**

- The government introduced the Nutrient Based Subsidy (NBS) in 2010 to address the growing imbalance in fertilizer use in many States, which is skewed towards urea (N).
- However, only non-nitrogenous fertilizers (P and K) moved to NBS; urea was left out.

- The total demand for urea in the country is about 34-35 million tonnes (mln t) whereas the domestic production is about 25 mln t.
- The requirement of Diammonium Phosphate (DAP) is about 12 mln t and domestic production is just 5 mln t.
- This leaves the gap of nearly 9-10 mln t for urea and 7 mln t for DAP, which is met through imports.
- In addition, consumption of complex fertilizers (NPK) is about 12-13 mln t, which is largely produced within the country and so the import requirement is only 1 mln t.

### **Increasing burden:**

- The international prices of fertilizers are volatile and almost directly proportional to energy prices.
- There has been a surge in international prices with urea prices rising to a record level of over \$900 per metric tonne (mt) in November 2021 from nearly \$270 per mt in September 2020.
- Likewise, the international prices of DAP have risen from about \$360 per mt in September 2020 to about \$825 per mt in November 2021.
- These extraordinary price rises are on account of a sharp upsurge in international energy prices and supply constraints in major producing countries due to robust domestic demand, production cuts and export restrictions.

### **Fiscal challenges:**

- In order to minimise the impact of rise in prices on farmers, the bulk of the price rise is absorbed by the government through enhanced fertilizer subsidy. This is likely to create serious fiscal challenges.
- In the last 20 years, the price of urea has increased to ₹5.36 per kg in 2021 from ₹4.60 in 2001.
- In the same period, the Minimum Support Price of paddy increased by 280% and that of wheat by 230%.
- In other words, in 2001, 37.7 kg of wheat was required to buy one bag of urea (50 kg), which has now reduced to 13.3 kg.
- At current prices, farmers pay about ₹268 per bag of urea and the Government of India pays an average subsidy of about ₹930 per bag.
- Thus, taxpayers bear 78% of the cost of urea and farmers pay only 22%. This is expected to increase and is not sustainable.

### **Towards reform:**

In order to address the multiple goals of fertilizer policy stakeholders need to simultaneously work on four key policy areas.

**Self reliant:**

- India needs to be self-reliant and not depend on import of fertilizers. In this way, we can escape the vagaries of high volatility in international prices.
- In this direction, five urea plants at Gorakhpur, Sindri, Barauni, Talcher and Ramagundam are being revived in the public sector.

**Take Urea under NBS:**

- India needs to extend the NBS model to urea and allow for price rationalisation of urea compared to non-nitrogenous fertilizers and prices of crops.
- The present system of keeping the price of urea fixed and absorbing all the price increases in subsidy needs to be replaced by distribution of price change over both price as well as subsidy based on some rational formula.

**Subsidies organic and biofertilizers:**

- India needs to develop alternative sources of nutrition for plants.
- Discussions with farmers and consumers reveal a strong desire to shift towards the use of non-chemical fertilizers as well as a demand for bringing parity in prices and subsidy given to chemical fertilizers with organic and biofertilizers.
- This also provides the scope to use a large biomass of crop that goes waste and enhance the value of livestock byproducts.

**Improve efficiency:**

- India should pay attention to improving fertilizer efficiency through need-based use rather than broadcasting fertilizer in the field.
- The recently developed Nano urea by IFFCO shows promising results in reducing the usage of urea. Such products need to be promoted expeditiously after testing.

**Conclusion:**

Thus if these changes are implemented properly they will enhance the productivity of agriculture, mitigating climate change, providing an alternative to chemical fertilizers and balancing the fiscal impact of fertilizer subsidy on the Union Budgets in the years to come.