Impact and Policy Research Review (IPRR)
Vol. 3, Issue 2, July – December 2024, pp. 1-5

Insights

Fertilizer Sector at a Crossroad:
Insights from Economic Surveys and Union Budgets

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Abstract

Analyzing the last few Economic surveys and Union budgets, this paper points out two major contradictions in the suggestions and actions of the government for the fertilizer and agriculture sectors. While the government aims to reduce chemical fertilizer use and promote agricultural sustainability through promoting natural and organic farming, the heavy allocation of subsidies to urea and significant investments in conventional fertilizers suggest a contradictory approach. This puts the Indian fertilizer sector at a crossroads, struggling with conflicting policies and actions.

Keywords: Fertilizer sector, Union Budget, Economic Survey, Public Policy, India

1. Introduction

Union Budgets and Economic Surveys present the state of the economy and the priorities of the government, hence the policies associated with them. The recently presented Union Budget 2024-25 has identified agriculture as one of the government's priority sectors and given importance to increasing the productivity and resilience of the sector. Moreover, the Economic Survey 2024 also specifies the need for a sustainable agriculture sector and suggests measures for achieving it.

Such measures and suggestions affect the fertilizer sector which supplies an essential input to the agriculture sector and increases the crops' productivity too. Analyzing the last few Economic surveys and Union budgets, this paper points out two major contradictions in the suggestions and actions of the government for the fertilizer and agriculture sectors.

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2. Contradiction I

The first contradiction lies in the Economic Survey, 2024's (Govt of India, 2024a) aim to promote agricultural sustainability by reducing the use of chemical fertilizers and ensuring a balanced nutrient ratio in the soil while simultaneously increasing subsidies for urea, which exacerbates the imbalance in the soil's nutrient ratio. The NPK ratio in India has worsened, compared to the popular and accepted ratio of 4:2:1[2] or an estimated ratio of 2.6: 1.4:1[3], due to the flawed fertilizer subsidy policies that have been followed over the years (Mankunnummal, 2023). India provides subsidies for Urea products and non-urea products.

The largest produced and consumed fertilizer in India, Urea, is highly subsidized and sold at a rate that the government statutorily fixes which is much less than other fertilizer products. The difference between this rate and the net market realization by the manufacturing units of Urea is given as the Urea subsidy to the manufacturers/importers. The non-urea products come under the Nutrient Subsidy (NBS), where the government fixes the subsidy rate (in Rs/Kg) per nutrient (Nitrogen, Phosphate, Potash, and Sulphur) contained in the non-urea product on an annual basis.

According to the data from Fertiliser Statistics of Fertiliser Association of India, 2023, the NPK ratio of India has deteriorated from 5.9:2.4:1 in 1991–92 to 11.8:4.6:1 in 2022–23, which is much worse than the two ratios above. The disparity across the different zones in India is very significant, where it is 6.2:2.5:1, 34.3:10:1, 7.3:3.3:1 and 13.3:6:1 in east, north, south, and west zones, respectively.

High price differences between urea (a major source of Nutrient Nitrogen) and other decontrolled products force consumers to go after urea and substitute it for other high-priced fertilizer products like Di-Ammonium Phosphate and complex fertilizers (major sources of nutrients Phosphorous and Potassium) and hence led to an NPK ratio that is highly skewed towards the Nitrogen nutrient.

However, the budget allocated nearly 75% of the fertilizer subsidy to Urea (See Table 1). From 2021-22 to 2024-25, the subsidy shares for Urea increased from 68.3% to 74.9%, while that of the NBS share has decreased from 34.3% to 27.4%.

This structure of allocation will further deteriorate the existing NPK ratio of the soil which contradicts the suggested measure to ensure agricultural sustainability in the country.

Table 1: Share of different fertilizer subsidy heads in the Total fertilizer subsidy

Fertilizer Subsidy Heads	**2021-22**	**2022-23**	**2023-24 (R.E)**	**2024-25 (B.E)**
Indigenous Urea	36.8%	49.8%	54.1%	61.1%
Import of Urea	31.5%	17.3%	15.9%	13.8%
Total Urea	**68.3%**	**67.1%**	**69.9%**	**74.9%**

[2] Emerged from a field-based study for two crops in the 1950s
[3] By Ramesh Chand and Pavithra S in 2015

Indigenous P&K Fertilizers	20.8%	19.9%	17.1%	16.1%
Import of P&K Fertilizers	13.5%	14.3%	14.8%	11.3%
Total NBS	**34.3%**	**34.3%**	**31.9%**	**27.4%**

Source 1: Union Budget, Various years, Govt of India

3. Contradiction II

The second contradiction is in terms of the promotion of natural farming and the promotion of alternative fertilizers to reduce the consumption of chemical fertilizers while also heavily investing in and subsidizing conventional fertilizers like urea. In the last few years, the government has stressed the need to move towards natural or organic farming[4]. Parliamentary Standing Committee on Chemicals & Fertilizers (2022-23) (Govt of India, 2023c) stresses to reduce urea use by 50 % in agriculture fields for soil health upgradation and gradually reduce the use of chemical fertilizers and eventually stop the use to protect soil health.

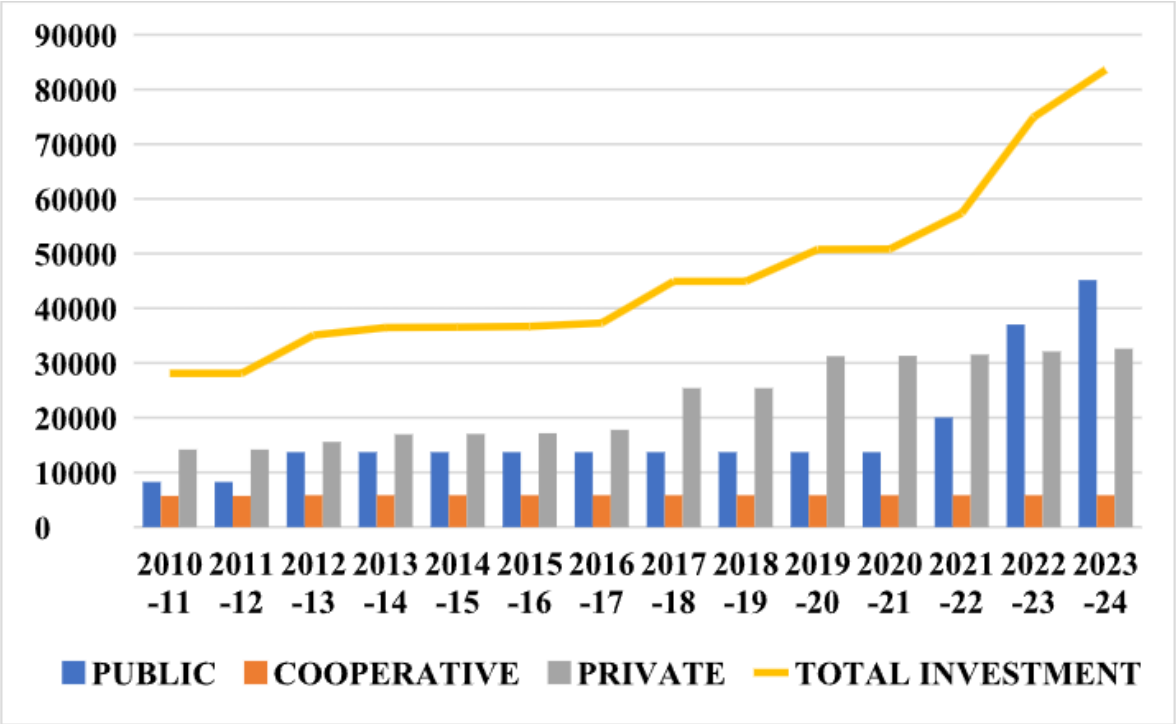
The Economic Survey 2021-22 (Govt of India, 2022) also specifies the importance of finding alternative fertilizers and reducing the use of chemical fertilizers in agriculture. Culminating all these, the government proposed a new program in the union budget, 2023-24, (Govt of India, 2023b) which is PM-PRANAM (PM Programme for Restoration, Awareness, Nourishment and Amelioration of Mother Earth) to promote alternative fertilizers in all the states and union territories and incentivize them in balanced use chemical fertilizers, which is possible through reducing the consumption of Urea, the most used nitrogenous fertilizer in India.

Through the 2023-24 budget, the government started facilitating the farmers to adopt natural farming through Bhartiya Prakritik Kheti Bio-Input Resource Centres. The Budget 2024-25 (Govt of India, 2024b) also aims to initiate 1 crore farmers across the country into natural farming in 2 years. However, the government is adopting conflicting policies through this.

On the one hand, it tries to reduce the consumption of chemical fertilizers through the promotion of natural farming and alternative fertilizers, and on the other hand, it promotes the consumption of conventional fertilizers like Urea by investing heavily in the sector. This can be seen from Figure 1. India is witnessing a massive investment boom mainly in conventional chemical fertilizers like Urea through the Make in India and Aatmanirbhar Bharat schemes, especially since 2020-21 led by the public sector. Fertilizer Industry attracted Rs. 32783 crore investment in 3 years during 2020-21 to 2023-24. Among this, the public sector contributed Rs. 31458 crore which is 95.9 percent.

[4] This can be seen from Prime Minister Narendra Modi's speeches on 16th December 2021 at the National Conclave on Natural Farming to "liberate the country's soil from chemical fertilizers and pesticides" and on 1st January 2022 at a PM-KISAN programme urged the farmers to "switch to the chemical-free method of cultivation". On 28th May 2022 in the IFFCO seminar, the Prime Minister again pushed for organic farming by saying that 'it is the new mantra' and that it will reduce the dependence on other countries for fertilizer products.

Table 2: Cumulative investment in the fertilizer industry 2010-11 to 2023-24



Source 2: Fertiliser Statistics, Fertiliser Association of India

4. World Fertilizer Consumption Scenario

However, compared to other countries, India's plant nutrient consumption is less. Table 2 presents the consumption of nutrients and the yield of paddy and wheat in selected countries in 2021. Countries like China, Bangladesh, Egypt, Korea, and Japan have much higher consumption of plant nutrients per hectare than India and in turn, they do have higher yields per hectare for crops like paddy and wheat than India. Hence, the point of increasing productivity by reducing the consumption of fertilizers in Union budgets and Economic surveys will yield adverse outcomes.

Table 3: Consumption of plant Nutrients per hectare of Arable land and land under permanent crops and yield of Paddy and Wheat in selected countries in 2021

Country	Consumption of plant Nutrients (Kg)	Paddy (kg/ha)	Wheat (kg/ha)
Egypt	379	10203	6454
Korea Republic	598	7114	5000
China	331	7114	5811
Bangladesh	328	4867	3300
Japan	206	7497	4986
India	**177**	**4214**	**3440**
World	124	4764	3492

Source 3: FAO Statistics

5. Conclusion

In conclusion, the fertilizer sector in India is at a crossroads, struggling with conflicting policies and actions. While the government aims to reduce chemical fertilizer use and promote agricultural sustainability through initiatives like PM-PRANAM and support for natural farming, the heavy allocation of subsidies to urea and significant investments in conventional fertilizers suggest a contradictory approach. What India needs is scientific farming, which ensures food security in the world's largest populated country, rather than natural or organic farming. A move away from scientific farming will result in unfavourable outcomes as we have the example of Sri Lanka[5] that gave importance to organic farming. It will be too early to restrict the contributions of fertilizers in enhancing the productivity of agriculture and ensuring food security in the country through implementing these conflicting policies in India.

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[5] Sri Lanka completely banned the import of chemical fertilizers and pesticides on 6th May, 2021 through its 'vistas of prosperity and splendour' policy in 2019 and moved to organic farming. This had resulted in a decline in agriculture production and an uncontrollable price hike hence in massive protest from farmers. Sri Lanka, after six months, withdrew the decision and imported chemical fertilizers and pesticides in November, 2021.