



## Fertiliser Consumption in India

**For Prelims:** [Fertiliser Subsidy](#), [Urea](#), [DAP](#), [Nutrient Based Subsidy \(NBS\) Scheme](#)

**For Mains:** Issues Related with Fertiliser Subsidy.

### Why in News?

The Indian government has implemented several measures to promote balanced fertilisation. Despite these efforts, the consumption of urea has risen, leading to **imbalanced fertilisation, decreased nitrogen use efficiency, and a decline in crop yield response to fertiliser use.**

### What Measures have been taken to Promote Balanced Fertilisation?

#### ▪ Initiatives:

- In 2015, Indian government mandated [neem-coating of all urea](#)
- Govt introduced 45kg urea bags in place of 50kg to cut demand in 2018
- [Indian Farmers Fertiliser Cooperative Limited \(IFFCO\)](#) launched liquid '[Nano Urea](#)' in 2021.
  - More recently, **first [Liquid Nano Urea \(LNU\)](#) plant was inaugurated at Kalol, Gujarat.**
    - LNU is urea in the form of a nanoparticle and is developed to **replace conventional urea and curtail its requirement by at least 50%.**

#### ▪ Impact of the Measures Taken:

- Initially, the use of **neem-coated urea led to a dip in consumption**, making it difficult for urea to be used for non-agricultural purposes.
- However, this **trend reversed from 2018-19**. Urea sales in 2022-23 were about 5.1 mt higher than in 2015-16 and over 9 mt higher than in 2009-10, before the introduction of the [Nutrient-Based Subsidy \(NBS\)](#) regime in April 2010.

### Why does Urea Continue to be the Dominant Fertiliser?

#### ▪ Favourable Characteristics: Urea is the most widely used fertilizer because it is a **rich source of nitrogen, an essential nutrient for plant growth.**

- Urea is a **readily available and affordable** nitrogen source for farmers, making it a popular choice.
- It can also be **easily stored and transported**, making it a convenient choice for both farmers and manufacturers.
- Urea is also a **versatile fertilizer that can be applied to a wide range of crops and soil types.**

#### ▪ Heavy Subsidy: In India, urea is the **most produced, imported, consumed and physically regulated** fertiliser of all.

- **Urea consumption rose by over a third since 2009-10;** this has been largely courtesy of its MRP going up by a mere 16.5% - from **Rs 4,830 to Rs 5,628 per tonne.**
- This current per-tonne MRP for urea against DAP (Rs 27,000) and MOP (Rs 34,000)

is nowhere compatible with a 4:2:1 NPK use ratio generally considered ideal for Indian soils.

## What is the Nutrient-based Subsidy (NBS) regime?



# Nutrient Based Subsidy Scheme

### About:

- A fixed rate of subsidy (in ₹ per Kg) decided on an annual basis
- Being implemented since 2010

### Implemented by:

- Department of Fertilisers, Ministry of Chemicals & Fertilizers

### Ambit of NBS:

- Given on nutrients - Nitrogen, Phosphate, Potash and Sulphur
- For Phosphatic and Potassic (P&K) fertilisers
- Doesn't include Urea based fertilisers
- NBS is available for imported complex fertilisers except Ammonium Sulphate

### Aim:

- Ensure the availability of fertilisers to farmers at an affordable price
- Increase consumption of P&K fertilizers to achieve optimum NPK ratio (4:2:1)

### Fertilisers in India:

- 3 basic fertilisers – Urea, Diammonium Phosphate (DAP), and Muriate of Potash (MOP)
- Urea is the most – produced, consumed, imported and physically regulated fertiliser of all
- Urea is subsidised only for agricultural uses

Nutrient	Main Source
Nitrogen (N)	Urea
Phosphorus (P)	DAP
Potassium (K)	MOP



### Targeted Beneficiaries:

- The NBS regime is aimed at benefiting farmers across the country, especially **small and**

**marginal farmers** who may not be able to afford fertilizers at market rates.

- The scheme provides subsidies to farmers based on their fertilizer requirements, and the subsidy amount is **directly transferred to their bank accounts**.

▪ **Benefits:**

- It helps in improving **soil fertility and crop productivity**.
- Reduces the **cost of cultivation** for farmers by providing fertilizers at subsidized rates.
- Improves the **quality of agricultural produce**, which can help farmers get **better prices for their crops in the market**.
- It helps in **conserving soil health** and reducing the **environmental impact** of excessive use of fertilizers.

▪ **Failure of NBS:**

- **Urea is left out of the scheme** and hence it remains under price control. There is technically **no price control on other fertilizers**.
  - The prices of the other fertilizers which were **decontrolled have gone up** which has led the farmers to **use more urea than before**.
  - This has further worsened **fertilizer imbalance**.
- Price controls on **DAP** have been reintroduced, with companies not allowed to **charge more than Rs 27,000 per tonne**. This has led to the sales of both **urea and DAP soaring in 2022-23**.

### What is the Cost of Imbalanced Fertilisation?

▪ **Reduced Crop Yields and Quality:**

- Applying too little or too much fertilizer can lead to **reduced crop yields** and quality, resulting in **financial losses for farmers**.

▪ **Soil Degradation:**

- Imbalanced fertilization can lead to **nutrient imbalances in the soil**, leading to **soil degradation, erosion, and loss of soil fertility** over time.

▪ **Environmental Pollution:**

- Overuse of fertilizers can lead to the leaching of excess nutrients, such as nitrogen and phosphorus, into water bodies, **causing eutrophication, algal blooms, and other environmental problems**.

▪ **Health Risks:**

- Excessive use of fertilizers can result in the accumulation of nitrates in crops, which can be **harmful to human health if consumed in large quantities**.

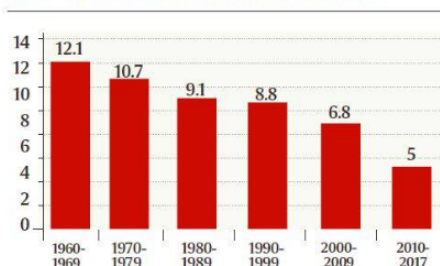
#### ALL-INDIA USE OF FERTILISER PRODUCTS

	UREA	DAP	MOP*	NPKS	SSP
2009-10	266.73	104.92	46.34	80.25	26.51
2010-11	281.13	108.7	39.32	97.64	38.25
2011-12	295.65	101.91	30.29	103.95	47.46
2012-13	300.02	91.54	22.11	75.27	40.3
2013-14	306	73.57	22.8	72.64	38.79
2014-15	306.1	76.26	28.53	82.78	39.89
2015-16	306.35	91.07	24.67	88.21	42.53
2016-17	296.14	89.64	28.63	84.14	37.57
2017-18	298.94	92.94	31.58	85.96	34.39
2018-19	314.18	92.11	29.57	90.28	35.79
2019-20	336.95	101	27.87	98.57	44.03
2020-21	350.43	119.11	34.25	118.11	44.89
2021-22	341.8	92.72	24.57	114.79	56.81
2022-23	357.25	105.31	16.32	100.73	50.18

\*For direct application, excluding supply to complex fertiliser units.



#### CROP YIELD RESPONSE TO FERTILISERS



### Way Forward

▪ **Expand the NBS Regime to Include Urea:**

- The current exclusion of urea from the NBS regime has led to an increase in its consumption, exacerbating the problem of imbalanced fertilisation.
  - **Including urea in the NBS regime would promote its balanced use and reduce its consumption**, which would in turn reduce the cost of cultivation for

farmers and improve crop productivity.

▪ **Encourage the use of Alternative Fertilisers:**

- The use of **alternative fertilisers, such as [organic and bio-fertilisers](#)**, can help reduce the **reliance on synthetic fertilisers**, which can lead to imbalanced fertilisation.
- Promoting the use of alternative fertilisers through **subsidies, awareness campaigns, and capacity building** can help improve soil health and reduce environmental pollution.

▪ **Promote Soil Testing and Balanced Fertilisation:**

- Soil testing can help determine the **nutrient requirements of crops**, which can help farmers apply fertilisers in a balanced manner.
- Promoting soil testing and providing subsidies for it can encourage farmers to adopt balanced fertilisation practices, which can improve crop yields and soil health.

▪ **Monitor and Regulate the Prices of Decontrolled Fertilisers:**

- **Regulating the prices of decontrolled fertilisers, such as DAP**, can help prevent their excessive use and promote the use of balanced fertilisers.
- The government can consider reintroducing price controls on decontrolled fertilisers to ensure their affordability and prevent their excessive use.

▪ **R&D of Sustainable Fertilisers:**

- Investing in R&D of sustainable fertilisers can help develop fertilisers that are environmentally friendly, promote balanced fertilisation, and improve crop productivity.
- The government shall provide funding for R&D of sustainable fertilisers besides encouraging private sector participation.

▪ **Improving NUE (Nitrogen Use Efficiency):**

- NUE refers to the proportion of Nitrogen applied mainly through urea that is actually utilized by crops to produce harvested yields.
- It will enable farmers to harvest the same or more grain yields with fewer bags.

## UPSC Civil Services Examination, Previous Year's Question (PYQs)

### Q. With reference to chemical fertilizers in India, consider the following statements: (2020)

1. At present, the retail price of chemical fertilizers is market-driven and not administered by the Government.
2. Ammonia, which is an input of urea, is produced from natural gas.
3. Sulphur, which is a raw material for phosphoric acid fertilizer, is a by-product of oil refineries.

### Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 and 3 only
- (c) 2 only
- (d) 1, 2 and 3

Ans: (b)

### Q. Why does the Government of India promote the use of 'Neem-coated Urea' in agriculture? (2016)

- (a) Release of Neem oil in the soil increases nitrogen fixation by the soil microorganisms.
- (b) Neem coating slows down the rate of dissolution of urea in the soil.
- (c) Nitrous oxide, which is a greenhouse gas, is not at all released into atmosphere by crop fields.
- (d) It is a combination of a weedicide and a fertilizer for particular crops.

Ans: (b)

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