



## Reducing Fertilizer Subsidy

This editorial is based on [Can PRANAM reduce fertiliser subsidy bill?](#) which was published in The Hindu Businessline on 30/08/2023. It talks about the recently launched PM PRANAM Scheme and how promoting the scheme will help the government reduce subsidy bills and fiscal deficits.

**For Prelims:** [PM-PRANAM Scheme](#), [National Mission for Sustainable Agriculture \(NMSA\)](#), [National Initiative on Climate Resilient Agriculture \(NICRA\)](#), [PM Krishi Sinchaayi Yojna \(PMKSY\)](#), [Eutrophication](#), [Blue baby syndrome](#), [Bio-fertilisers](#), [One Nation One Fertilizer \(ONOF\)](#), [Direct Benefit Transfer \(DBT\)](#), [Nutrient Based Subsidy \(NBS\)](#), [Neem Coated Urea \(NCU\)](#)

**For Mains:** PM PRANAM Scheme: How it'll be helpful in reducing chemical fertilizers, Issues with current fertilizer subsidy regime

Union Budget 2023-24 launched the [PM-PRANAM](#) to promote the balanced use of chemical and alternative fertilizers, generating awareness of regenerative agriculture (RA).

RA is an outcome-based food production system that nurtures and restores soil health, protects the climate and water resources and biodiversity, and enhances farms' productivity and profitability.

### What is the PM PRANAM Scheme?

- It stands for [PM Programme for Restoration, Awareness, Nourishment, and Amelioration of Mother Earth](#).
- It **aims to reduce the use of chemical fertilizers** and promote the balanced use of alternative fertilizers .
- It will **save the [subsidy burden on chemical fertilizers](#)**, which is projected to increase to Rs 2.25 lakh crore in 2022-2023.
- It will make Indian agriculture more resilient to the changing climate.
- It will **incentivise those states that use less chemical fertilizers** than their average consumption in the last three years.
  - The **states will receive 50% of the subsidy savings as a grant**, which they can use for asset creation, technological adoption, and awareness generation related to alternative fertilizers.
- It will **involve the participation of farmers, panchayats, [farmer producer organizations](#) and [self-help groups](#)** that are involved in the reduction of fertilizer use .
- It is **in line with the government's focus on promoting green agriculture and sustainable agricultural practices** with environmental concern.
  - It will support the existing initiatives such as [National Mission for Sustainable Agriculture \(NMSA\)](#), [National Initiative on Climate Resilient Agriculture \(NICRA\)](#), and [PM Krishi Sinchaayi Yojna \(PMKSY\)](#).

## What are the Issues with Fertilizer Usage in India?

- **Imbalance in Fertilizer Use:** India has a **recommended ratio of 4:2:1 for nitrogen (N), phosphorus (P), and potassium (K) fertilizers**, but the actual ratio is much higher for N and lower for P and K. This leads to nutrient deficiencies, soil degradation, and lower crop yields.
  - According to a report by **NITI Aayog**, the average **NPK ratio in India was 8:3:1** in 2015-16, which is far from the recommended ratio of **4:2:1**.
- **Excessive Use of Nitrogenous Fertilizers:** India is the **third-largest producer and the second-largest consumer of urea**, a nitrogenous fertilizer. However, excessive use of urea has negative impacts on soil health, water quality, and greenhouse gas emissions. Urea also subsidizes the production of other fertilizers, which creates distortions in the fertilizer market.
- **Lack of Domestic Production and Dependence on Imports:** India has limited domestic resources of P and K fertilizers, and **relies heavily on imports from other countries. This makes India vulnerable to fluctuations in global prices and availability of these fertilizers.** Moreover, India has not invested significantly in expanding its domestic fertilizer production capacity since the 1990s.
  - According to the annual report of the Department of Fertilizers, India has a domestic production capacity of **24.66 million metric tons** of P&K fertilizers, which meets only 50% of the domestic demand.
    - The rest is met through imports from countries like China, Russia, Morocco, Jordan, and Saudi Arabia.
- **Inefficient Distribution and Subsidy System:** India has a complex and costly system of subsidizing fertilizers to farmers, which involves multiple agencies, intermediaries, and leakages. The subsidy system also does not adequately incentivize farmers to use fertilizers efficiently or adopt organic or bio-fertilizers.
  - The fertilizer subsidy has become a sticky item in the expenditure list of the Union Budget. The government has earmarked Rs 1.75 trillion for fertilizer subsidy in the 2023-24 Budget, above a trillion rupees for a fourth year in a row.
  - The dependence on LNG for fertilizer production exposes India to high and volatile global gas prices, and a soaring fertilizer subsidy bill.
    - The use of LNG in the fertilizer sector was as high as 63% of the total gas consumption in FY 2020-21.

## What are the Effects of Improper Utilization of Fertilizers?

- **Environmental Pollution:** Excess use of fertilizers causes environmental pollution as their residual and unused amounts will become pollutants for air, water, and soil.
  - **Eutrophication:** Excess use of fertilizers can lead to eutrophication in the water bodies, which is the excessive growth of algae and other aquatic plants that deplete the oxygen level and harm aquatic life.
- **Soil degradation:** Continuous use of nitrogenous fertilizer alone can reduce the soil fertility and cause deficiencies of other major and micronutrients. It can also affect the soil microflora and fauna that are essential for maintaining the soil quality.
- **Reduced Crop Quality:** Improper fertilizer application can result in the excessive growth of certain plant parts (e.g., leaves and stems) at the expense of reproductive structures (e.g., fruits and grains), leading to reduced crop quality and yield.
- **Groundwater Contamination:** Nitrate leaching from overused fertilizers can contaminate groundwater, posing health risks to people who rely on these sources for drinking water. Elevated nitrate levels in drinking water can lead to **methemoglobinemia** or "**blue baby syndrome**."
- **Health Concerns:** Pesticides and herbicides often used in conjunction with fertilizers can pose health risks to farmers and consumers when used improperly or excessively.
- **Economic Burden:** Excessive fertilizer use can be economically unsustainable for farmers, as it can increase input costs without corresponding increases in crop yields. This can lead to indebtedness among small and marginal farmers.
- **Greenhouse Gas Emissions:** The production and application of synthetic fertilizers contribute to greenhouse gas emissions, particularly nitrous oxide (N<sub>2</sub>O), which is a potent greenhouse gas that contributes to climate change.
- **Imbalance in Crop Nutrient Uptake:** Inappropriate fertilizer application can result in an imbalance of nutrients in the soil, which can affect the nutrient uptake by crops and may require

corrective actions in subsequent growing seasons.

## How can the PM PRANAM Scheme help reforming the Fertilizer Regime?

- **Reduction in Subsidy Bills:** PM Pranam can contribute to **reducing the government's subsidy bills by promoting alternative or [bio-fertilisers](#)**. The government aims to set up 10,000 Bio-Input Resource Centres, creating a national-level micro-fertiliser and pesticide manufacturing network.
  - By supporting the production and adoption of these [bio-fertilisers](#), PM Pranam can gradually reduce the financial burden on the government in terms of chemical fertilizer subsidies.
- **Fiscal Deficit Control:** Lowering subsidy bills through the promotion of PM Pranam can help in controlling India's [fiscal deficit](#). Fiscal deficits can be a significant economic challenge, and reducing subsidies is one way to address this issue.
- **Gradual Phase-Out of Chemical Fertiliser Subsidies:** PM Pranam can serve as a catalyst for the gradual phase-out of subsidies on chemical fertilizers. **By providing support and incentives for the adoption of alternative fertilizers, the government can reduce its financial commitment to chemical fertilizer subsidies.**
- **Support for Farmer Fertiliser Cooperatives:** PM Pranam can help farmer fertilizer cooperatives scale up their production of biofertilizers. This support can lead to increased economies of scale and a more extensive distribution network for alternative fertilizers.
- **Incentivizing Sales and Distribution Networks:** It's important to work out pricing and margin strategies for biofertilizers to incentivize sales and distribution networks. PM Pranam **can facilitate this by providing incentives to cooperatives and businesses involved in biofertilizer production** and distribution.
- **Demonstration and Certification:** PM Pranam can support initiatives to demonstrate the effectiveness of alternative fertilizers on farmer fields. This is **crucial for building trust and encouraging farmers to adopt these products**. Certification of these bio-fertilisers can also ensure quality and help farmers or their organizations realize better prices for their produce.

## What are Other Governments Initiatives?

- **[One Nation One Fertilizer \(ONOF\)](#):** This scheme, also known as **Pradhan Mantri Bhartiya Jan Urvarak Pariyojana (PMBJP)**, was launched in 2022 by the Ministry of Chemicals and Fertilizers. Under this scheme, **all fertilizer manufacturers under the fertilizer subsidy scheme are required to use a single brand and logo for fertilizers**. The brand name is **Bharat** and it covers all types of fertilizers, including urea, DAP, NPK, and MOP.
  - The aim of this scheme is to standardize fertilizer brands across the country, clear up the confusion of farmers regarding the availability and quality of fertilizers, reduce the cost and increase the availability of fertilizers, and save freight subsidy by minimizing cross-country movement of fertilizers.
- **[Direct Benefit Transfer \(DBT\)](#):** This system was introduced in 2016 by the Department of Fertilizers to provide subsidy amount to farmers to purchase fertilizers. Under this system, the subsidy is transferred to the fertilizer companies after the sale is made to the farmers through point of sale (PoS) devices installed at retail outlets.
  - The aim of this system is to ensure timely supply of fertilizers, prevent diversion and leakages of subsidy, promote balanced use of fertilizers, and create a transparent and accountable system for subsidy payments.
- **[Nutrient Based Subsidy \(NBS\)](#):** This scheme was launched in 2010 by the Department of Fertilizers to provide subsidy on nutrients rather than on products. **Under this scheme, the subsidy rates for nutrients such as nitrogen (N), phosphorus (P), potassium (K), and sulphur (S) are fixed by the government in advance for each financial year**. The manufacturers and importers are free to decide the retail price of their products based on the market conditions.
  - The aim of this scheme is to encourage the production and consumption of complex fertilizers, promote balanced use of NPKS nutrients, reduce the subsidy burden on the government, and induce competition among fertilizer companies.
- **[Neem Coated Urea \(NCU\)](#):** This scheme was launched by the government in 2015 to promote the use of organic urea to preserve soil health and yield better crops. Under this scheme, farmers

are only making use of neem coated organic urea to cut down savings by around 10%. The urea that is coated with neem tree seed oil is called neem coated urea.

- The government mandated **all the indigenous and imported urea to be neem coated** to make the urea slow release and difficult to use for non-agricultural purposes.
- The scheme **aims to regulate the use of urea, enhance the availability of nitrogen to the crop, reduce the cost of fertilizer application, prevent wastage and diversion of subsidy**, and decrease soil and water pollution caused by urea.

**Drishti Mains Question:**

India's fertilizer subsidy regime needs to be reformed. How recently launched PM-PRANAM (PM Programme for Restoration, Awareness, Nourishment and Amelioration of Mother Earth) Scheme can help in this? Discuss.

### 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)**