



## Self Sufficiency in Urea

**For Prelims:** Liquid Nano Urea, Significance of Liquid Nano Urea over Conventional Urea

**For Mains:** Need of Self Sufficiency in Urea

### Why in News?

India is hoping to end its reliance on imported urea within the next four years, till 2025 by expanding output of a locally developed version known as [Liquid Nano Urea](#).

### What is Liquid Nano Urea?

- It is urea **in the form of a nanoparticle**. It is a nutrient (liquid) to provide **nitrogen to plants as an alternative** to the conventional urea.
  - Urea is a **chemical nitrogen fertiliser**, white in colour, which artificially provides nitrogen, a major nutrient required by plants.
- It is developed **to replace conventional urea and it can curtail the requirement of the same by at least 50%**.
  - It contains 40,000 mg/L of nitrogen in a 500 ml bottle which is equivalent to the impact of nitrogen nutrient provided by one bag of conventional urea.
- It is **Indigenous Urea**, introduced firstly by the [Indian Farmers Fertiliser Cooperative Limited \(IFFCO\)](#) for farmers across the world.
- The first Liquid Nano Urea (LNU) plant is inaugurated at Kalol, Gujarat.

### What is the Need of becoming Self Sufficient in Urea?

- India has been importing urea for decades to meet the shortfall in the supply chain. India, being one of the largest importers of urea, its **demand affects the international price of urea**.
  - India is the **world's largest buyer of Urea and [Di-Ammonium Phosphate \(DAP\)](#)**.
  - DAP is the **second most commonly used fertilisers** in India after urea.
  - Farmers **normally apply this fertiliser just before or at the beginning of sowing**, as it is high in phosphorus (P) that stimulates root development.
- Urea and DAP have been **hit by a sharp rise in global fertiliser prices** this year 2022 due to **supply disruptions**.
- Agriculture being the mainstay of nearly 70 % of our population, **any shortfall in supply or increase in the price of critical input like fertilisers is bound to have an adverse impact on the overall economic performance** of our rural sector.
- It is likely that the **demand for urea is not going to come down in the foreseeable future**, so remaining dependent on the import of urea perpetually was a very bad idea from the onset.
- In this regard, the decision to set up several brownfield urea plants in the public sector in 2016 was a very good step.
- Self-sufficiency in urea will save the government nearly Rs 40,000 crore.

### What is the Status of Fertilizers in India?

- **About:**
  - India consumed about **500 LMT of fertilizer per year in the last 10 years.**
  - The Centre's fertiliser subsidy bill is set to soar by 62% over the budgeted amount to Rs 1.3 lakh crore in FY21.
    - Since non-urea (MoP, DAP, complex) varieties cost higher, many farmers prefer **to use more urea** than actually needed.
    - The government has taken a number of measures to reduce urea consumption. It introduced neem-coated urea to reduce illegal diversion of urea for non-agricultural uses. It also stepped up the promotion of organic and **zero-budget farming.**
  - Between 2018-19 and 2020-21, India's fertiliser **imports increased almost 8% to 20.33 million tonnes** from 18.84 million tonnes.
    - In FY21, more than a fourth of the urea requirement was imported.
- **Need of Large Quantities of Fertilisers:**
  - The agricultural output of India has increased every year, and the **country's need for fertilisers has also increased.**
  - Despite imports, gaps remain between requirements and **availability after indigenous production targets haven't been met.**

## What are the Related Government Initiatives?

- **Nano Urea Production:**
  - Eight new nano urea plants, which are being centrally monitored, will start production by November 2025.
  - These are located in several states, including Karnataka, Uttar Pradesh and Assam.
- **Neem Coating of Urea:**
  - The Department of Fertilizers (DoF) has made it mandatory for all the domestic producers to produce 100% urea as Neem Coated Urea (NCU), to Improve soil health, Reduce usage of plant protection chemicals etc.
- **New Urea Policy (NUP) 2015:**
  - Objectives of the policy are,
    - To maximize indigenous urea production.
    - To promote energy efficiency in the urea units.
    - To rationalize the subsidy burden on the Government of India.
- **New Investment Policy- 2012:**
  - The Government announced New Investment Policy (NIP)-2012 in January, 2013 and made amendments in 2014 to facilitate fresh investment in the urea sector and to make India self-sufficient in the urea sector.
- **Policy on Promotion of City Compost:**
  - The Government of India approved a policy on promotion of City Compost, notified by the DoF in 2016 granting Market Development Assistance of Rs. 1500/- for scaling up production and consumption of city compost.
- **Use of Space Technology in Fertilizer Sector:**
  - DoF commissioned a three year Pilot Study on "Resource Mapping of Rock Phosphate using Reflectance Spectroscopy and Earth Observations Data" by National Remote Sensing Centre under ISRO, in collaboration with Geological Survey of India (GSI) and the Atomic Mineral Directorate (AMD).
- **The Nutrient Based Subsidy (NBS) Scheme:**
  - It has been implemented from April 2010 by the Ministry of Chemicals and Fertilizers' Department of Fertilizers.
  - Under NBS, a fixed amount of subsidy decided on an annual basis, is provided on each grade of subsidized Phosphatic & Potassic (P&K) fertilizers depending on its nutrient content.

## Way Forward

- For non-urea fertilisers like **DAP and Muriate of Potash (MOP), we need to take significant**

**steps to ensure that our farmers keep getting an uninterrupted supply** of required fertilisers at reasonable prices, although for the raw material of these non-urea fertilisers we have remained dependent on imports.

- The need of the hour is to **streamline the subsidy distribution mechanism by universalising the Direct Benefit Transfer (DBT)** in the fertiliser sector.
- Secondly, corruption prevalent in the fertiliser subsidy distribution regime needs to be curbed stringently. These steps will reduce the burden of fertiliser subsidy substantially. The only thing needed is the will to act.

## UPSC Civil Services Examination, Previous Year Questions (PYQs)

### Prelims

**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)**

**Exp:**

- The Government of India subsidizes fertilizers to ensure that fertilizers are easily available to farmers and the country remains self-sufficient in agriculture production. The same has been achieved largely by controlling the price of fertilizer and the amount of production. **Hence, statement 1 is not correct.**
- Ammonia (NH<sub>3</sub>) has been synthesized from natural gas. In this process, natural gas molecules are reduced to carbon and hydrogen. The hydrogen is then purified and reacted with nitrogen to produce ammonia. This synthetic ammonia is used as fertilizer, either directly as ammonia or indirectly after synthesis as urea, ammonium nitrate, and monoammonium or diammonium phosphates. **Hence, statement 2 is correct.**
- Sulfur is a major by-product of oil refining and gas processing. **Sulfuric acid is used in the production of both Monoammonium Phosphate (MAP) and Diammonium Phosphate (DAP). Hence, statement 3 is correct.**
- Therefore, option (b) is the correct answer.

**Q. In the 'Index of Eight Core Industries', which one of the following is given the highest weight? (2015)**

- (a) Coal production
- (b) Electricity generation
- (c) Fertilizer production
- (d) Steel production

**Ans: (b)**

**Exp:**

- In 2015, Electricity was having the highest weightage in the index of 8 core industries.
- The Eight Core Industries comprise 40.27% of the weight of items included in the Index of

#### Industrial Production (IIP).

- The current weight (April 2021), of eight core industries is given below:
  - Petroleum Refinery production (28.04%), Electricity (19.85%), Steel (17.92%), Coal production (10.33%), Crude Oil (8.98%), Natural Gas production (6.88%), Cement production (5.37%), Fertilizer production (2.63%).
- Index of Industrial Production
  - The Index of Industrial Production (IIP) is an index which details out the growth of various sectors in an economy such as mineral mining, electricity, manufacturing, etc.
  - It is compiled and published monthly by the Central Statistical Organisation (CSO), Ministry of Statistics and Programme Implementation six weeks after the reference month ends, i.e., a lag of six weeks.
  - The Base Year of the Index of Eight Core Industries has been revised from the year 2004-05 to 2011-12 from April, 2017.
- **Therefore, option (b) is the correct answer.**

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### **Mains**

**Q.** How do subsidies affect the cropping pattern, crop diversity and economy of farmers? What is the significance of crop insurance, minimum support price and food processing for small and marginal farmers? **(2017)**

**Source: HT**

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