Fertiliser Challenge

For Prelims: Zero-budget farming, New Urea Policy (NUP) 2015, DBT, NBS Scheme

For Mains: Fertiliser Challenge, Impact of Pandemic on Fertiliser Supply

Why in News?

India is facing the challenge of meeting its requirement of fertilizer supply which has been disrupted ahead of kharif sowing in the wake of Russia's invasion of Ukraine.

How much fertilizer does India consume?

- **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.**
  - India, the **top importer of urea, is a major buyer of Diammonium Phosphate (DAP)** needed to feed its huge agriculture sector which employs about 60% of the country's workforce and accounts for 15% of USD2.7 trillion economy.
- **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 is Fertilizer Subsidy?

- **About:**
  - The government **pays a subsidy to fertiliser producers** to make this critical ingredient in agriculture affordable to farmers.
  - This allows **farmers to buy fertilisers at below-market rates**.
    - The difference between the cost of production/import of a fertiliser and the actual amount paid by farmers is the subsidy portion borne by the government.
- **Subsidy on Urea:** The Centre pays subsidy on urea to fertiliser manufacturers on the basis of cost of production at each plant and the units are required to sell the fertiliser at the government-set

Maximum Retail Price (MRP).

- **Subsidy on Non-Urea Fertilisers:** The MRPs of non-urea fertilisers are decontrolled or fixed by the companies. The Centre, however, pays a flat per-tonne subsidy on these nutrients to ensure they are priced at "reasonable levels".
    - **Examples of non-urea fertilisers:** Di-Ammonium Phosphate (DAP), Muriate of Potash (MOP).
    - All Non-Urea based fertilisers are regulated under Nutrient Based Subsidy Scheme.

What has been the Impact of Pandemic on Fertiliser Supply?

- The pandemic has **impacted fertiliser production, import and transportation** across the world during the last two years.
- China, who is the **major fertiliser exporter,** has **gradually reduced their exports in view of a dip in production**.
    - This has **impacted countries such as India,** which sources 40–45% of its phosphatic imports from China.
- Besides, **there has been a surge in demand in regions** like Europe, America, Brazil and Southeast Asia.
- Demand has increased, but **supply has been constrained.**

What are the Related Government Initiatives and Schemes?

- **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).**
    - The benefits of use of NCU are as under:-
        - Improvement in soil health.
        - Reduction in usage of plant protection chemicals.
        - Reduction in pest and disease attack.
        - An increase in yield of paddy, sugarcane, maize, soybean, Tur/Red Gram.
        - Negligible diversion towards non-agricultural purposes.
        - Due to slow release of Nitrogen, Nitrogen Use Efficiency (NUE) of Neem Coated Urea increases resulting in reduced consumption of NCU as compared to normal urea.
- 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:**
    - 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.
    - **To increase sales volumes, compost manufacturers** willing to market city compost were allowed to sell city compost in bulk directly to farmers.
    - Fertilizer companies marketing city compost are covered under the Direct Benefit Transfer (DBT) for Fertilizers.
- **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 DoF.**
    - 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.
    - It aims at **ensuring the balanced use of fertilizers,** improving agricultural productivity, promoting the growth of the indigenous fertilizers industry and also reducing the burden of Subsidy.

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)

- 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_3) 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. Most crude oil grades contain some sulfur, most of which must be removed during the refining process to meet strict sulfur content limits in refined products. This is done through hydrotreating and results in production of H_2S gas, which is converted into elemental sulfur. Sulfur can also be mined from underground, naturally-occurring deposits, but this is more costly than sourcing from oil and gas and has largely been discontinued. 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

Source: IE