



Agriculture

Nutrient Based Subsidy

Tags:

- **GS Paper - 3**
- **Agricultural Resources**
- **Mobilization of Resources**
- **Direct & Indirect Farm Subsidies**

For Prelims: Nutrient Based Subsidy, Rabi and Kharif Season, Fertilizers, DAP (Di-Ammonium Phosphate), Black Marketing.

For Mains: Significance of Nutrient Based Subsidy and Challenges, Issues related to direct and indirect farm subsidies and minimum support prices.

Why in News?

Recently, the union cabinet has approved Nutrient Based Subsidy (NBS) rates for the various nutrients of Rabi and Kharif Season for 2022-23.

- For Rabi Season **2022-23**: NBS approved for various nutrients i.e. **Nitrogen (N), Phosphorus (P), Potash (K) and Sulphur (S)**
- **For Kharif Season 2023**: NBS rates approved for Phosphatic and Potassic (P&K) Fertilizers.

What is a Nutrient Based Subsidy (NBS) Regime?

- **About:**
 - Under the NBS regime – fertilizers are provided to the farmers at the subsidized rates based on the **nutrients (N, P, K & S) contained in these fertilizers**.
 - Also, the fertilizers which are fortified with **secondary and micronutrients** such as **molybdenum (Mo) and zinc** are given additional subsidy.

- The subsidy on P&K fertilizers is announced by the Government on an annual basis for each nutrient on a **per kg basis** – which are determined taking into account the **international and domestic prices of P&K fertilizers, Exchange Rate, inventory level in the country etc.**
 - NBS policy intends to increase the **consumption of P&K fertilizers** so that optimum balance (**N:P:K=4:2:1**) of NPK fertilization is achieved.
 - This would **improve soil health** and as a result the yield from the crops would increase, resulting in **enhanced income to the farmers.**
 - Also, as the **government expects rational use of fertilizers**, this would also ease off the **burden of fertilizer subsidy.**
 - It is being implemented from **April 2010 by the Department of Fertilizers, Ministry of Chemicals & Fertilizers.**

What are the Issues Related to NBS ?

- **Economic and Environmental Costs:**
 - The fertilizer subsidy, including the NBS policy, imposes a **significant financial burden** on the economy. It ranks as the second-largest subsidy after food subsidy, straining fiscal health.
 - Additionally, imbalanced fertilizer usage due to the pricing disparity has adverse **environmental consequences**, such as soil degradation and nutrient runoff, impacting long-term agricultural sustainability.
- **Black Marketing and Diversion:**
 - Subsidized urea is **susceptible to Black Marketing** and diversion. It is sometimes **illegally sold to bulk buyers**, traders, or non-agricultural users like plywood and animal feed manufacturers.
 - Moreover, there are **instances of subsidized urea being smuggled** to neighboring countries like

Bangladesh and Nepal, leading to the loss of subsidized fertilizers intended for domestic agricultural use.

- **Leakage and Misuse:**

- The NBS regime relies **on an efficient distribution system** to ensure that subsidized fertilizers reach the intended beneficiaries, i.e., farmers.
- However, there may be instances of leakage and misuse, where subsidized fertilizers **do not reach farmers or are used for non-agricultural** purposes. This undermines the effectiveness of the subsidy and denies genuine farmers access to affordable fertilizers.

- **Regional Disparities:**

- Agricultural practices, soil conditions, and crop nutrient requirements vary across different regions of the country.
- Implementing a uniform NBS regime may not adequately address the specific needs and regional disparities, potentially leading to suboptimal nutrient application and productivity variations.

Way Forward

- A uniform policy for all fertilizers is necessary, as nitrogen (N), phosphorus (P), and potassium (K) are **crucial for crop yields and quality**.
- In the long term, NBS could be replaced by a flat per-acre cash subsidy that allows farmers to purchase any fertilizer.
- This subsidy should encompass **value-added and customized products** that provide efficient nitrogen delivery and other essential nutrients.
- It is crucial to strike a balance between price control, affordability, and sustainable nutrient management to achieve the desired outcomes of the NBS regime.

What are the Major Cropping Seasons?

Kharif Crops	Rabi Crops
Crops that are sown during the southwest monsoon season are called kharif or monsoon crops.	Those that are sown around the Retreating Monsoon and Northeast monsoon season, which begins by October are called rabi or winter crops.
These crops are sown at the beginning of the season around end May to early June and are harvested post the monsoon rains beginning October.	The harvest for these crops happens typically during April and May, during the summer season.
These crops depend on the rainfall patterns.	These crops depend on the rainfall patterns.
Rice, maize, pulses such as urad, moong dal and millets are among the key kharif crops.	Major Rabi crops are wheat, gram, peas, barley etc.
It requires a lot of water and hot weather to grow.	A warm climate is required for seed germination and cold climate for the growth of crops.
Zaid Crops ▪ Sown and harvested: March-July (between Rabi and Kharif) ▪ Important Zaid crops include: Seasonal fruits, vegetables, fodder crops etc	

Q. With reference to the cultivation of Kharif crops in India in the last five years, consider the following statements: (2019)

1. Area under rice cultivation is the highest.
2. Area under the cultivation of jowar is more than that of oilseeds.
3. Area of cotton cultivation is more than that of sugarcane.
4. Area under sugarcane cultivation has steadily decreased.

Which of the statements given above are correct?

- (a) 1 and 3 only
- (b) 2, 3 and 4 only
- (c) 2 and 4 only
- (d) 1, 2, 3 and 4

Ans: (a)

Q. Consider the following crops: (2013)

1. Cotton

2. Groundnut
3. Rice
4. Wheat

Which of these are Kharif crops?

- (a) 1 and 4
- (b) 2 and 3 only
- (c) 1, 2 and 3
- (d) 2, 3 and 4

Ans: (c)



Indian Economy

Atal Bhujal Yojana and Ground Water Management

Tags:

- **GS Paper - 1**
- **GS Paper - 2**
- **Water Resources**

- **Government Policies & Interventions**
- **GS Paper - 3**
- **Conservation**

For Prelims: Atal Bhujal Yojana, Groundwater Management, World Bank, Water Security Plans, Central Sector Scheme, Ministry of Jal Shakti, Groundwater Depletion, Central Ground Water Board (CGWB).

For Mains: Atal Bhujal Yojana and Ground Water Management, Government policies and interventions for development in various sectors and issues arising out of their design and implementation.

Why in News?

Recently, the 5th meeting of the **National Level Steering Committee (NLSC)** of Atal Bhujal Yojana (ATAL JAL) was held to review the overall progress of the scheme.

The World Bank has been involved in the review of the program. The committee encouraged states to integrate **Water Security Plans (WSPs)** into the Gram Panchayat Development Plans which will ensure the sustainability of the scheme's approach even after the program's completion.

What is Atal Bhujal Yojna?

▪ **About:**

- ATAL JAL is a **Central Sector Scheme** for facilitating sustainable ground water management with an outlay of Rs. 6000 crore.
- It is being implemented by the Ministry of Jal Shakti .
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- The scheme is being funded by the **Government of India** and the **World Bank** on a **50:50** basis.
- The entire World Bank's loan component and central assistance will be passed on to the States as grants.

▪ **Objectives:**

- It aims to improve the management of groundwater resources in select water stressed areas in identified states viz. Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan and Uttar Pradesh.
- ATAL JAL promotes **panchayat led** groundwater management and **behavioural change** with a primary focus on demand-side management.

What is the Status of Groundwater Depletion in India?

- **Groundwater Depletion in India is a major concern because it is the primary source of drinking water. Some of the main causes of groundwater depletion in India include over-extraction of groundwater for irrigation, Urbanisation, and Climate Change.**
- **India is the world's largest user of groundwater**, exceeding the use of the United States and China combined according to recent UN report .
- **According to the Central Ground Water Board (CGWB) of India, approximately 70% of the total water used in India is from groundwater sources.**
 - However, the CGWB also estimates that around 25% of the country's total **groundwater extraction is unsustainable**, meaning that it is being extracted at a faster rate than it can be replenished.
- Overall, groundwater depletion in India is a **serious problem that needs to be addressed through sustainable water management practices**, such as improved irrigation techniques and conservation efforts.

What are the Major Causes of Groundwater Depletion in India?

- **Over-Extraction of Groundwater for Irrigation:**
 - Irrigation accounts for around **80% of total water use in India**, and much of this water is sourced from groundwater.
 - As demand for food continues to grow, more and more groundwater is being extracted for irrigation, leading to depletion.

- According to the UN's Interconnected Disaster Risks Report 2023, 78% of wells in Punjab are considered overexploited, and the north-western region as a whole is predicted to experience critically low groundwater availability by 2025.

- **Climate Change:**

- Rising temperatures and Changing Precipitation Patterns can alter the recharge rates of Groundwater Aquifers, making them more vulnerable to depletion.

- Droughts, flash floods, and Disrupted Monsoon Events are recent examples of climate change events that are placing pressure on India's groundwater resources.

- **Poor Water Management:**

- Inefficient use of water, leaky pipes, and inadequate infrastructure for capturing and storing rainwater can all contribute to groundwater depletion.

- **Decrease in Natural Recharge:**

- The natural recharge of groundwater aquifers can be decreased by factors such as Deforestation, which can lead to Soil Erosion and reduce the amount of water that is able to seep into the ground and replenish the aquifers.

- **What are the Issues Associated with Depleting Ground Water?**

- **Water Scarcity:** As groundwater levels drop, there may not be enough water available for domestic, agricultural, and industrial use. This can lead to **water shortages and conflicts** over water resources.

- A study led by the University of Michigan warns that if **Indian farmers continue to draw groundwater at the current rate**, the rate of groundwater depletion could triple by 2080. This could have severe implications for the **country's food and water**

security, as well as the livelihoods of over one-third of its population.

- **Land Subsidence:** When groundwater is extracted, the **soil can become compacted, leading to Land Subsidence (the sinking or settling of the land)**. This can cause damage to infrastructure, such as roads and buildings, and can also increase the risk of flooding.
- **Environmental Degradation:** Depleting groundwater can also have negative impacts on the environment. For example, when groundwater levels drop, it can cause Saltwater Intrusion in coastal areas, leading to the contamination of freshwater resources.
- **Economic Impacts:** Groundwater depletion can also **have economic impacts**, as it can lead to reduced agricultural production and increased costs for water treatment and pumping.
- **Lack of Depletion Data:** The Indian government regulates **groundwater exploitation by "notifying" highly overexploited blocks** in water-stressed states.
 - However, only about 14% of overexploited blocks are currently notified.
- **Earth's Axis to Tilt:** According to a recent study in Geophysical Research Letters, it is claimed that excessive pumping of groundwater has caused the Earth's axis to tilt nearly 80 centimeters east between 1993 and 2010 alone and contributes to sea level rise.

Way Forward

- Embrace **comprehensive and sustainable water management strategies** that address both immediate needs and long-term challenges.
- Foster **meaningful engagement with local communities**, incorporating their perspectives and knowledge in water management decisions.
- Prioritize **investments in water infrastructure** and capacity-building programs to build resilience against future water crises.
- Establish **robust monitoring and evaluation frameworks** to assess the effectiveness and impact of water management initiatives.

- Promote responsible **groundwater management and conservation practices** to ensure water availability for future generations.

UPSC Civil Services Examination, Previous Year Question (PYQ)

Mains

Q.1 What are the salient features of the Jal Shakti Abhiyan launched by the Government of India for water conservation and water security? (2020)

Q.2 Suggest measures to improve water storage and irrigation system to make its judicious use under the depleting scenario. (2020)

