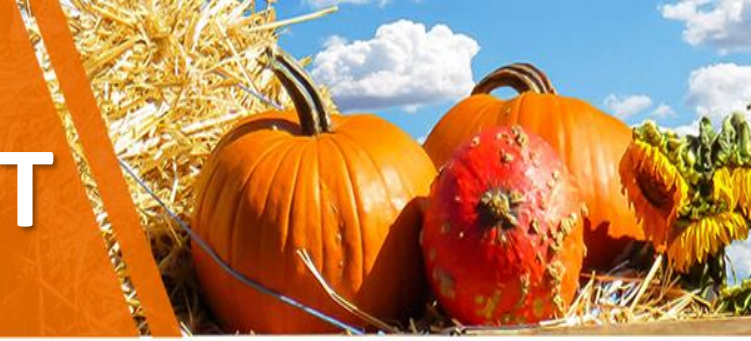
Fertiliser Policy and DBT



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Fertilizers : Productivity Augmenting Input

- To meet the challenge of rising demands of food, feed and fibre with limited land and water resources,
- Imperative to make fertilisers easily accessible to farmers and hence fertiliser sector in the country is subsidised.
- Much of this increase in Foodgrains production came in the post-green revolution period when high-yielding variety seeds (HYV seeds), along with irrigation and Chemical **fertilisers** usage, **picked up pace**.

Fertilizer-An Important Input

- Fertilizers are crucial productivity augmenting inputs to meet the challenge of rising demand for food, feed, and fibre with limited land and water resources,
- To augment productivity and access, fertilisers continue to be subsidised since mid 1965 and encapsulated under Green Revolution .

Fertilizers : Form of Subsidisation

- Keeping in mind the importance of agriculture in any sizable country to feed its people, the form of subsidisation has often varied, with most developed countries having moved from price support to income support (with the notable exception of Japan and South Korea).
- India extends support to agriculture primarily through price policy, be it for output or inputs.
- fertiliser subsidy is one of three ‘big ticket’ items in the basket of total subsidies in India
- It commands over one-fourth of total subsidies in 2020-21.

Types of Fertilizers

- Nitrogen or simply Urea : helps in plant growth and development,
- Phosphorus or P : accelerates blooming and also helps plants to withstand stress; and
- Potassium or K helps the process of photo synthesis and is essential to plant growth
- These nutrients are complementary, do not substitute one another.
- For soil to remain healthy and fertile, right mix of all three nutrients and in a timely fashion necessary.
- Recommended N:P:K = 4:2:1, on an average

Why Imbalance Use of fertilisers

- Urea, the only controlled fertilizer, sold at statutory notified uniform sale price and
- decontrolled Phosphatic and Potassic fertilizers sold at an indicative MRPs
- prices of urea fixed and subsidies float, it is the other way round in case of P and K.
- The current price of urea, just as an example, is low due to subsidy in relation to about 3 to 5 times prices of other two nutrients.
- Favourable pricing policy of urea in comparison to those of other two nutrients drives farmers to over use urea.
- Thus, pricing policy impinges on (im)balanced use of fertilisers.

Double Whammy

Over use of urea needs to be fixed on priority

- First, it extracts higher than necessary domestic resource costs (DRCs) in production of urea in excess of ‘real’ demand and
- secondly it damages soil which impinges on productivity.

Centripetal Influence on Subsidies (1/2)

- Tendency of various subsidies to crowd around a certain point, influenced by centripetal force
- Majorly banked on paddy and wheat for driving the food security vision of India
- The crowding has happened in the following way:
  - ❖HYVs were introduced for paddy and wheat (both irrigated crops)
  - ❖HYVs needed intensive use of inputs like water & fertilizers for them to express phenotypically in-synch with their innate genetics potential
  - ❖Each of main inputs – seed, fertilizer and water needed to be incentivized by offering price concession to increase their adoption

Centripetal Influence on Subsidies (2/2)

- Since the agricultural markets were not efficient enough to discover remunerative prices on the paddy and wheat output, they had to be offered price support in the form of procurements at MSP
- The above chain comprising several links came to be built on **heavy subsidies** at each stage.
- It turned out to be a typical case of acquiring a cat to keep off the rat, which then necessitated acquisition of a cow to produce milk for the cat reared at home and so on in an endless way.

DBT Currently in Vogue

Salient features of current DBT mechanism include

- the farmers/beneficiaries will continue to receive Urea at statutory subsidised prices and P&K fertilizers at subsidised prices in the market,
- the fertiliser companies which used to receive subsidy on receipt of fertilisers at the district level, now get subsidy after sale to farmers/beneficiaries by the retailers through PoS machines upon biometric authentication,
- the farmer or buyer's identity authenticated either through biometric Aaaar-based Unique Identification Number or voter ID card or Kisan Credit Card,
- all fertiliser sales to the beneficiary captured through the point of sale (PoS) machines installed at the retailer's end and all transactions captured online in the Integrated Fertilizer Management System (iFMS) on real time basis.

AeFDS

- Aadhaar-enabled Fertiliser Distribution system (AeFDS) was introduced on March, 2016 in 16 districts (three additional districts were included in the pilot phase on January 27, 2017) across India.
- Subsequently, the scheme was expanded to all states from March 1, 2018.
- Pan India rollout of DBT (Phase-I) has been completed by the department of fertilizers by March 2018.
- This version of DBT does not help much in terms of balanced use of three components of fertilisers nor it addresses the issue of equity among farmers.

Is Current DBT Good Enough?

- This DBT approach enables to track movement at the lowest formation of the administrative set up and ensures availability of fertilises to farmers
- this version of DBT does not help much in terms of balanced use of various types of fertilisers nor does it empowers farmers with the FoC .

Cash Transfer Directly (DBT)

- Cash transfer directly (DBT)) to the farmer in lieu of fertilizers at subsidised prices would empower farmers to choose the fertilizer combination best suited to their soil texture without the influence of the distorted price relatives of NPK
- will give farmers the freedom of choice (FOC) to produce any crop that do not require urea
- Currently, the extant instrument of pricing policy of subsidies nudge farmers to produce more of crops like wheat and rice which require use of urea
- Farmers disinclined to produce more of pulses, just as an example
- Consequently, production-mix continue to remain out of sync with demand

As Strong as the Weakest

The strength of a chain is the strength of its weakest link

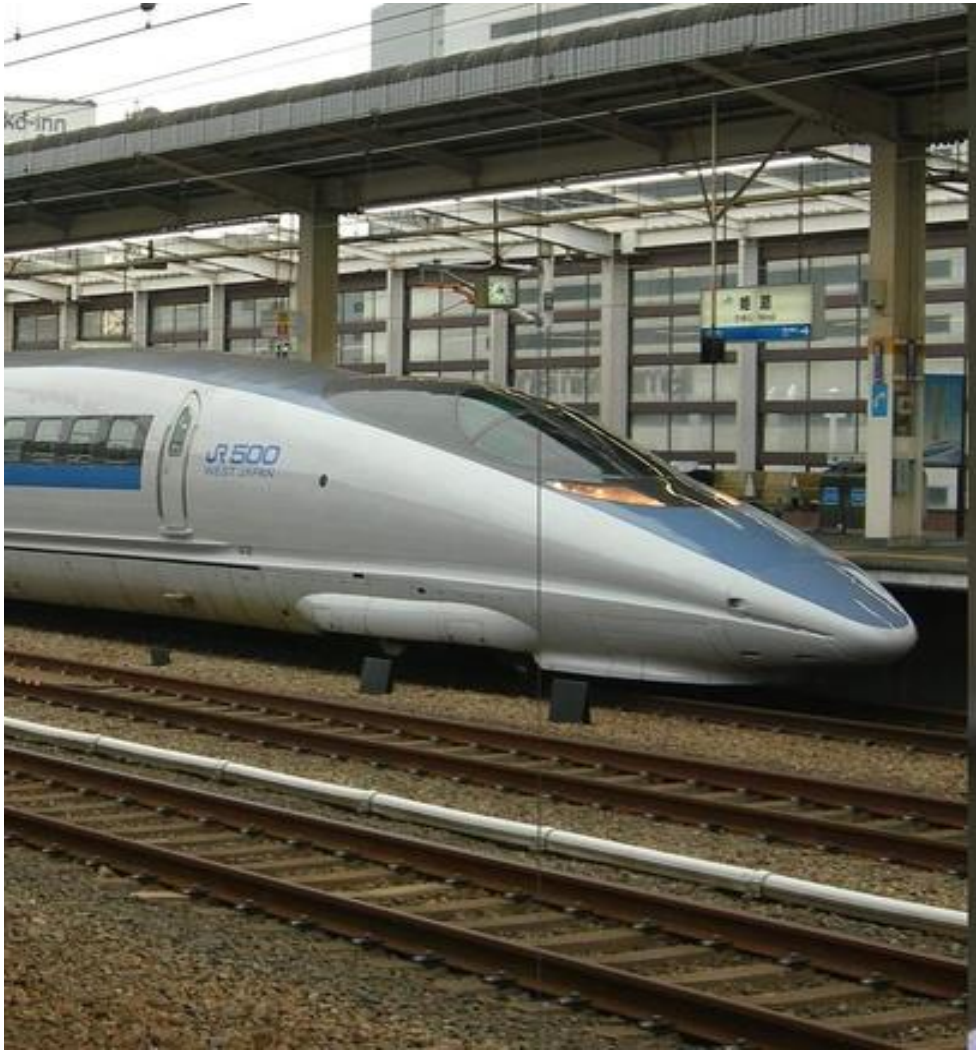
By Justus von **Liebig** in his "**Law of the Minimum"**

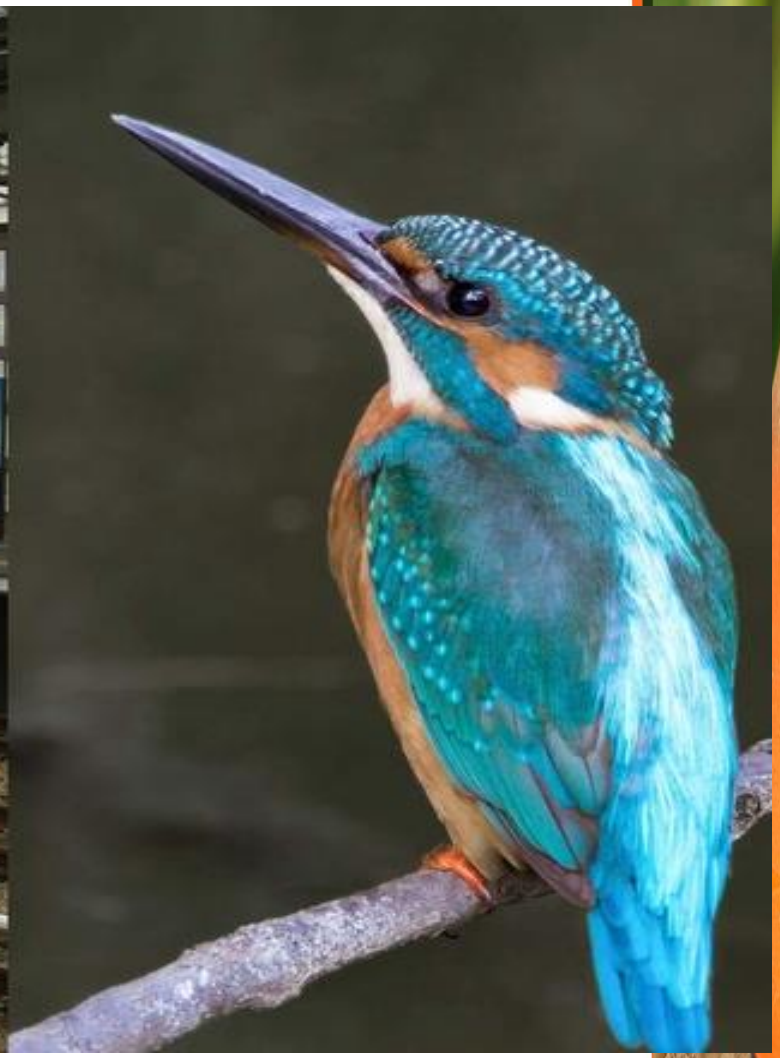
- the farm and farmer who constitute the weakest link
- Take the case of average yields across various crops and sectors in India
- The high global ranking of India in terms of volumes of production is more a function of area or number (e.g. of bovines)
- in terms of productivity, there is so much to catch up
- The average gap between the FLD (farm level demonstration) and farmer field level yields varies from 28 to 63 per cent
- Lab to Land : the high yield potential at the research station seldomly manifest at the farmer's field level

Learnt from Nature: Shinkansen Train

- **Train :** as it traveled through a narrow tunnel, created a loud "tunnel boom" at the exit.
- In **Japan**, the 500-series **bullet trains** could travel 300 km/hour (200 mph) but the **sound** levels exceeded environmental standards. One source of **noise** was an atmospheric pressure wave
- The Shinkansen Bullet Train has a streamlined forefront and structural adaptations to significantly reduce noise resulting from aerodynamics in high-speed trains.
- The more streamlined Shinkansen train not only travels more quietly, it now travels 10% faster and uses 15% less electricity.

The beak of kingfishers allows splashless entry into water due to the wedge shape it makes with the head that is round in cross section





Cause and effect of the imbalanced use of fertilisers

- Crops require right mix of three nutrients viz. NPK
- Imbalanced use of N, P and K leads to the loss of fertility of the soil over a period of time, which affects efficiency of fertilizer use and crop productivity.
- Urea, the only controlled fertilizer, is sold at statutory notified uniform sale price and decontrolled Phosphatic and Potassic fertilizers are sold at indicative maximum retail prices (MRPs).
- While the prices of urea are fixed and subsidy levels float, it is the other way round in case of P and K.
- The current price of urea at Rs 5,360/tonne is low (due to subsidy) in relation to about Rs 28,440 per tonne of DAP and Rs 18,980 per tonne of MoP.
- Favourable pricing policy of urea in comparison to those of other two nutrients has driven farmers to over use urea.
- Against recommended doses of N:P:K in the ratio of 4:2:1, empirically observed consumption ratio was skewed at 6.1:2.5:1 in 2017-18.

Why DBT?

- Of the several inputs deployed in the production system of agriculture, some of more important ones are fertilizers and seeds.
- Both quality and cost of inputs become critical, if the overall cost of cultivation is to remain rational and help increase the net farm income.
- An open and liberalised environment for manufacturing and distributing the inputs is likely to introduce competition and offer alternate options to the farmers to make a choice.

Advantages of DBT directly to Farmers

- It will save domestic resource costs (DRCs) in production of urea in excess of ‘real’ demand as farmers would not over use urea.
- Pulses, for instance, being self-nitrogen fixing crops, do not require use of urea. At the same time, soil health will improve and productivity levels will augment considerably.
- Will address the issue of ‘inequity’ as marginal farmers need more assistance compared to other farmers.
- total bill on account of fertilizers subsidy can be contained, at least for next few years. It will be a ‘win win’ situation if the Government walks the last mile in fully implementing DBT in case of fertilizers subsidy.

FOC

- Cash transfer directly to the farmers will benefit them as they would be empowered to choose the fertilizer combination best suited to their soil texture without the influence of the distorted price relatives of NPK.
- Given the gross cropped area (GCA) of 195 million hectares and taking into account the total fertilizers subsidy, average subsidy works out to over Rs.5000/ha.
- If this amount transferred directly to farmers' account in lieu of fertilizers subsidy to semi-medium farmers (middle group) and to others in a graded system, in inverse order of their land resources, it would have a total financial implication almost equal to total subsidy.
- Farmers would have the freedom of choice (FOC) to use fertiliser and the select the crop, as per the best of his interest.

Walk an extra mile :

Suggested DBT in lieu of Fertilizer Subsidy

Size Group	Area Operated ('000 Ha)	Gross Cropped Area ('000 Ha)	Amount of DBT (Rs/Ha.)
(1)	(2)	(3)	(4)
Marginal (< 1 ha.)	35410	43400	6500
Small (1-2 ha.)	35136	43064	6000
Semi-Medium (2-4 ha.)	37547	46019	5250
Medium (4-10 ha.)	33709	41315	4500
Large (>10 ha.)	17379	21301	4000

Inertia on Subsidies

- various subsidies came to centre around just two crops (paddy & wheat) grown in irrigated areas, supported through subsidy on seeds, fertilizers, water, electric/diesel power and finally procurement
- In effect, it was the selected section of farmers in irrigated areas growing paddy & wheat, who came to benefit majorly from the large subsidy-kitty, and creating islands of privileges
- The per hectare consumption of subsidy on different components stands as testimony to this bias, when it is examined by crops, irrigated vs. rainfed regions and other like parameters
- This was a sheer necessity in the 1960s, when India faced a crisis of food deficit, and the situation warranted an emergent intervention by deploying a readily available package of technology

Quiz

1. **What is the main Reason of imbalance use of Fertilisers in India?**

(a) Pricing policy, (b) Unawareness of farmers,

(c) Non-availability of right kind of fertilisers,

(d) Both (a) & (b).

2. How many broad types of fertilisers (nutrients) are subsidised in India?

(a) 3, (b) 5, (c) 7, (d) None of these

3. Was introduction of Chemical fertilisers in India part of Green Revolution?

(a) yes, (b) No, (c) No evidence exists (d) Research is going on to ascertain this

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Thank you