# Recasting Fertilizer Subsidies – A Report

Wicked Sprint by Bharat Krishak Samaj and Socratus Foundation

Jaipur, 7-10th October 2020

## Context to the Fertilizer Subsidy

India is the second largest consumer of nitrogenous fertilizers with 16% share of the world's nitrogen consumption. India budgeted Rs. 80,000 Crores (2.3% of budget, 0.5% of GDP) in 2019-20 for fertilizer subsidy, the second highest after food, of which 65% is towards subsidizing Urea. In addition, govt's pending arrears to the fertilizer industry are expected to cross 60,000 crores. For context, Rs. 75,000 Crores was allocated under PM-KISAN for cash transfer to ~12 crore farmers.

There are several inefficiencies in the system set up around fertilizer subsidy, and there is an urgent need to discuss various problems and challenges related to the current subsidy regime.

Some of the different issues being articulated by different stakeholders include:

· Fertilizer subsidy is financially unsustainable for the government, especially in Covid crisis

· Excessive use of urea has led to an imbalanced use in fertilizers causing alarming levels of soil degradation; Such subsidy, on the other hand, is not available for organic/natural farmers, and this does not incentivize farmers to shift towards agro-ecological practices for soil health

· Urea production and use has a large carbon footprint and causes water pollution – however, without such a subsidy regime, our food security might be jeopardized with any major changes taken up suddenly

· The current system is quite inefficient when it comes to issues like incentivising domestic production efficiency, use of more efficient fertilizers like liquid fertilizers, and prevention of diversion of urea for industrial purposes or to places outside India

· India is too dependent on other countries (ex: China) for fertilizers and raw materials

· The fertilizer industry has not been liberalized – the entire regime is government prescribed such as import canalization, price control and distribution and also highly centralized.

**A 'Wicked' Problem:** This is clearly a complex problem that may even be called 'wicked'. There seems to be an acceptance among all stakeholders, even among those with competing interests, that a change in the fertilizer subsidy policy is much needed. However, there are diverse viewpoints and ideas on the path forward.

Any decision will have ramifications on incomes of millions of farmers, agricultural output, the economy and government finances. Finding a solution to such a 'wicked' problem requires considering the political economy, not just a 'logical' solution. It requires people who hold different viewpoints and analyses to go beyond debating each other, to engage in a deeper, respectful exercise of understanding each other and put their minds together to co-create.

**Bharat Krishak Samaj** and **Socratus Foundation for Collective Wisdom** together convened a small, select group of influential stakeholders to an intense conversation and interaction time called a "Wicked Sprint".

### What is a Wicked Sprint?

Wicked Sprint is a multi-day collaborative process on a complex issue specially designed to elicit collective wisdom with a diverse set of stakeholders and experts. It is designed to break out of traditional siloed, piecemeal and/or knee jerk approaches to solving a wicked problem.

## Participants in the Wicked Sprint

1. **Satish Chander:** Director General of Fertiliser Association of India.
2. **Sahab Singh Dabas**: An award-winning farmer from Karnal & President of Indri FPO.
3. **Harish Damodaran**: National Editor on Rural Affairs and Agriculture with Indian Express.
4. **Dharampal:** Additional Secretary in Department of Fertilizers, Govt of India.
5. **Dr Sarthak Gaurav**: Assistant Professor at Centre for Policy Studies in IIT-Bombay
6. **Prof Himanshu:** Associate Professor of Economics in Jawaharlal Nehru University.
7. **Ajay Vir Jakhar:** Chairperson of the Punjab State Farmers and Farm Workers Commission.
8. **Dr M L Jat**: Principal scientist and systems agronomist in CIMMYT.
9. **Kavitha Kuruganti:** Convenor of Alliance for Sustainable & Holistic Agriculture (ASHA).
10. **Mohini Mohan Mishra:** National Secretary of Bharatiya Kisan Sangh (BKS).
11. **Ramgopal Sharma:** Joint Director (Inputs) at the Dept of Agriculture, Govt. of Rajasthan.
12. **Kedar Sirohi:** Working President of Madhya Pradesh Kisan Congress
13. **Vijay Kumar Thallam:** Advisor to Govt of AP for Agriculture.
14. **Dr Vijoo Krishnan**: National Joint Secretary of All India Kisan Sabha.



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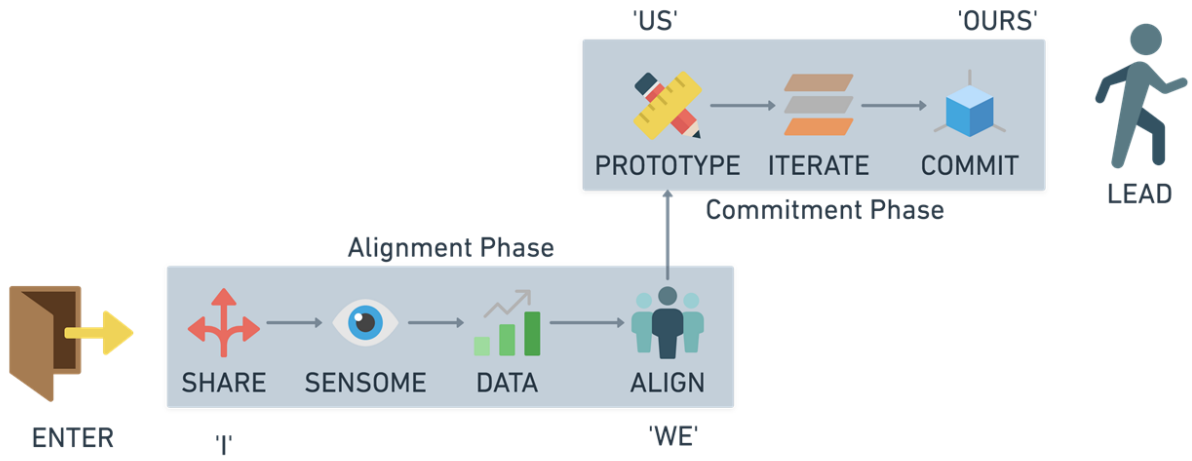
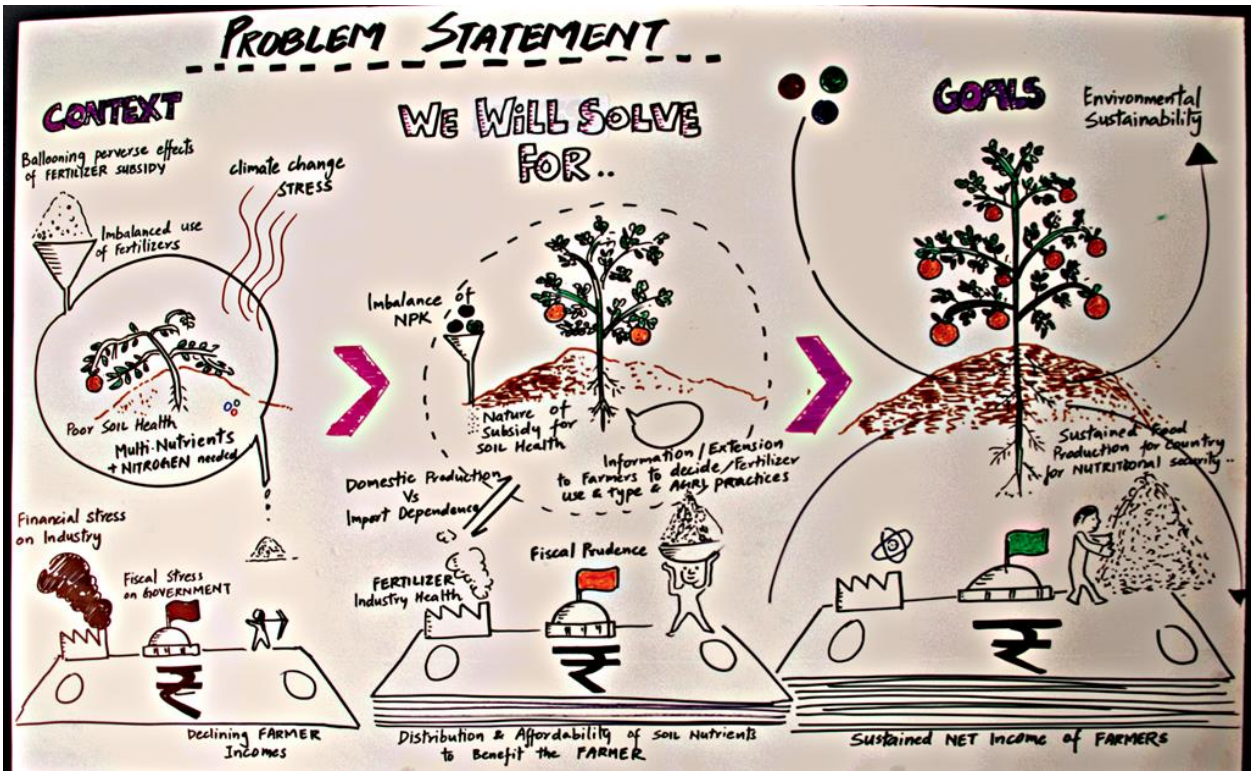
## The Flow for the Wicked Sprint over 3 days




Please visit this [webpage] for videos and photos from the Wicked Sprint.

## Collective Problem Statement




The above sketch represents the collective alignment among the participants on the problem statement after day 1. The wording of the collective problem statement is given below.

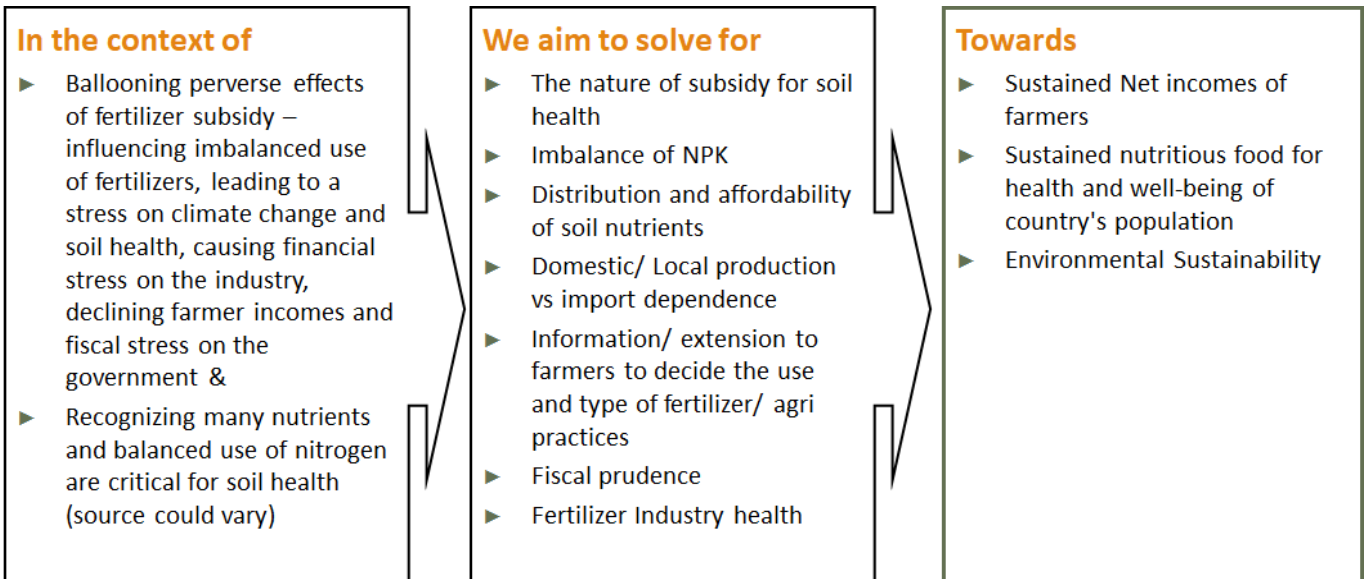



*Figure 1: Collective Problem Statement*

## Potential Policy Options *(Bolded ones were voted by the participants for building on further)*

| | |
|---|---|
| 1 | **Change in urea & NPK pricing policy (NBS-1)** |
| 2 | Extend subsidy to nutrient efficient fertilizer (NBS-2) |
| 3 | DBT to farmer after purchase (DBT) |
| 4 | Fixed amount of free fertilizer + voluntary giving up of subsidy by affluent farmers |
| 5 | Equal cash transfer to each farm households (DCT-1) - PM Kisan |
| 6 | Cash transfer based on land size (DCT-2) |
| 7 | Cash transfer based on past use (DCT-3) |
| 8 | **Compensation for soil health maintenance- Payment for Ecosystem Services (DCT-4)** |
| 9 | **Extension services for Organic/ Natural Farming and judicious use of fertilizers (OF-NF)** |
| 10 | Reduce diversions and leakages |
| 11 | Stop subsidizing inefficient plants; invest money on efficient plants (new and existing) |
| 12 | Cash transfer based on Crops (DCT-5) |
| 13 | Improve soil health card services by 'prescription-based fertilizer consumption' subsidies |
| 14 | Reduce Urea bag size |
| 15 | Output subsidies |
| 16 | Urea bag capping per HH |
| 17 | Subsidy on micronutrients based on the demonstration of improvement of soil health |



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# Proposal 1 - Change in NPK Pricing policy

## Current Situation

**Urea and complex fertilisers are in different subsidy regimes**

- Urea is in a cost-plus regime. It is the subsidy that is variable – it is given plant wise and based on international prices.
- Urea's MRP has been the same, unchanged, since 2002.
- Complex Fertilizers (CF) are under NBS.
- The subsidy is fixed so the CFs have variable MRP depending on international prices.
- NBS rates reduced by government over time due to fiscal stress

| **Fertilizer** | **Current MRP per ton (INR)** |
|---|---|
| Urea – N | 5,922 |
| Diammonium phosphate (DAP) – P | 24,000 |
| Muriate of Potash (MOP) - K | 17,500 |

- N prices (urea) are much lower than PK Fertilizers – there is an imbalance in fertilizer use.
- Low Urea prices create incentives for diversion to industry and neighbouring countries
- Ballooning subsidy bill is causing fiscal pressure on the govt.
- Politically important to keep prices stable, especially during elections

## Goal for NBS policy reform

1. Incentivising balanced use of nutrients

2. No change in the subsidy burden

## Change to be achieved and challenges

Bring more balance between the prices of N and PK. *(See Annex 1 for a test scenario)*

## Challenge with raising prices for urea

- Cost of cultivation will increase and farmers will therefore resist it
- Political price is too high

**It was clear that the biggest constraint to any reform on prices was political. Any reform will have to suggest a way to mitigate the reaction to rise in urea prices.**

## Two options for Urea price increase

| **Option 1** | **Option 2** |
|---|---|
| Raise the MRP of urea<br>(keeping urea under fixed price regime) | Bring urea under NBS<br>(Urea prices will be market linked) |
| Challenges<br>· Concern is that once the price is fixed, it will not change for the next 20 years because of political resistance<br>· Short-term solution | Challenges<br>· Urea prices will increase significantly, suddenly<br>· No control over prices as it will depend on international prices<br>· Sharp increase or a loss of control over prices will be politically difficult |

## Proposal

The group came up with a proposal to manage the politics.

- **The savings on urea subsidy should be utilized to further subsidize PK**.
- **The urea price increase should be gradual** under the current fixed price regime until it reaches a point when Urea can come under NBS.
- The increase in Urea price should simultaneously be accompanied by a reduction in prices of PK so that it appears that the loss due to urea price increase will be compensated by a decrease in PK prices.
- **The announcement of price increase in urea and decrease in PK has to be announced publicly at the same time**, preferably by the Prime Minister or a someone of a high stature and credibility.

## Implementation Roadmap

**Step 1 (short term)** *(Refer Annex 3 for price estimates)*

· **Increase Urea prices by Rs. 90 / bag (Rs. 2000 / ton) every year for 3 years. This will lead to doubling of urea prices in 3 years.**

& SIMULTANEOUSLY

· **Decrease price of DAP & MOP each by Rs. 100 / bag (Rs. 2000/ ton) every year for 3 years.**



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**Step 2 (After 3 years)**

**Bring Urea under NBS**

| Option 1 | **Option 2** |
|---|---|
| Make it product agnostic | **Only applied to limited specific products** |
| Administrative nightmare as the dept. will struggle to manage so many products. | **This will inhibit innovation of new products, but more manageable.** |

Option 2 was chosen. It was agreed that subsidy should be applied to:
- Urea
- Micronutrients and
- Water-soluble fertilizers.

Further addition based on consultation with farmers

**Step 3 (long term)**

Shifting to a sustainable way to support farmers

## Implications

### Economic

- Better crop productivity
- Increase in farmer income
- Better use of resources
- Reduction in Urea import, saving on foreign exchange
- More fertilizer products- reduction in high analysis fertilizers
- Incentive for diversion will be lower
- Inefficient Plants will close unless supported

### Social

- Increased health benefits
- Lower queues and black marketing
- Farmers will need lesser credit for agriculture

### Environmental

- Reduction in nitrogen pollution of water and impact on climate
- Better soil health and increased soil biodiversity

## Other Comments from the group

- Using chemical Fertilizers may not address environmental and soil health challenges
- Nutrient balance will automatically improve over time leading to better soil health
- Make it explicit that there is no cap on land (5 acres)



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# Proposal B – Extension Support for Soil health improvement + Payment for Ecosystem Services

## Current Situation

42% of India's districts use 85% of India's fertilisers according to the 29th report by the Parliamentary Standing Committee on Agriculture titled "Impact of chemical fertilizers and Pesticides on agriculture and allied sectors in the country" that was tabled in Parliament.

Unlike a farmer using synthetic fertilisers in agriculture, a farmer who does not use synthetic chemical inputs has never been incentivised via a subsidy for his/ her efforts. The money kept aside each year for the fertiliser subsidy cannot be availed of by them.

## Goal

- To reorient chemical fertiliser subsidy regime towards regenerating soil health, towards provision of ecosystem services;
- To recognise and incentivise the efforts of farmers involved in practices that enhance the quality of soil or those that practice non-chemical farming.

## Change to be achieved

- To regenerate degraded soils and improve soil health
- To support, enhance and amplify the work (new knowledge and practices) of non-chemical farmers
- To support farmers who don't avail the fertiliser subsidy through an alternative financial cushion for maintenance of soil fertility.

## Perceived Challenges

- Clear identifiable/verifiable indicators need to be laid out to avail of the subsidy
- Verification through certification systems or lab-based systems would not be implementable in states where the institutional structures are weak or non-existent. The mechanism for monitoring needs to be simple, local and verifiable.
- A second additional pool of money may need to be identified to support this, unless it can be carved out from the existing fertiliser subsidy bill.

## Proposal

- A central government scheme designed to support farmers who help in activities to regenerate the soil and practise chemical-free farming.
- An area production plan for each region would be developed, this would include specific crops that must NOT be grown to be eligible for support.

This scheme would cover 2 kinds of farmers:

a. **Farmers practicing chemical free agriculture**
   - A direct cash transfer of Rs 2500/ acre/ season for a set of 8-10 practices that farmers would follow to regenerate soil health such as multi cropping, nitrogen fixing, using manure and compost etc. It would follow a slab-based system for the cash transfer. The subsidy would be capped at 5 acres per farmer.
   - In addition, a capacity building and extension system for farmers needs to be built. The cost of building this system may cost around Rs 4000/ farmer/ year over 6 years. This would ensure that the good practices are supported and are not rolled back over time.
b. **Farmers using regulated amounts of fertiliser who are also engaged in soil conservation practices (conservation agriculture)**
   - Based on a measurable set of practices to conserve soil health, a slab-wise DCT to community certified farmers would be made. These farmers will receive extension support training and capacity building as they transition slowly to a chemical-free paradigm.

## Implementation Roadmap

- Farmers would need to register for this scheme. All farmers including tenant farmers would be eligible with a cap of 5 acres, and provided they were not receiving the fertiliser subsidy.
- The process of certification would be by members of the community and would follow a system that was easily monitored and verifiable such as the Participatory Guarantee System, which is a local peer reviewed mechanism.
- A farmer to farmer extension system would be set up for farmers to learn from each other and help resolve issues.

## Budget

- In order for this not to be a new budget, the funds for this scheme should come out of the savings from NBS in urea.
- The per farmer pay out would be Rs 2500/ acre/ season which is pegged on par with the current fertiliser subsidy. This would only be for farmers not availing the fertiliser subsidy.
- It is likely that the uptake of this scheme would be gradual and will slowly increase with growing extension support.
- Cost of extension services (build and run) would be Rs. 4000/ farmer/ year for 6 years

## Impact

- Social: It would include farmers who have been excluded from the fertiliser subsidy.
- Environmental: It would incentivise soil health and biodiversity
- Long term: it could take India towards substantially reducing the fertiliser subsidy bill over a period of time.

## Alignment on the Final Proposal

The image below reflects the alignment of the participants on how the two proposals come together over the long-term.

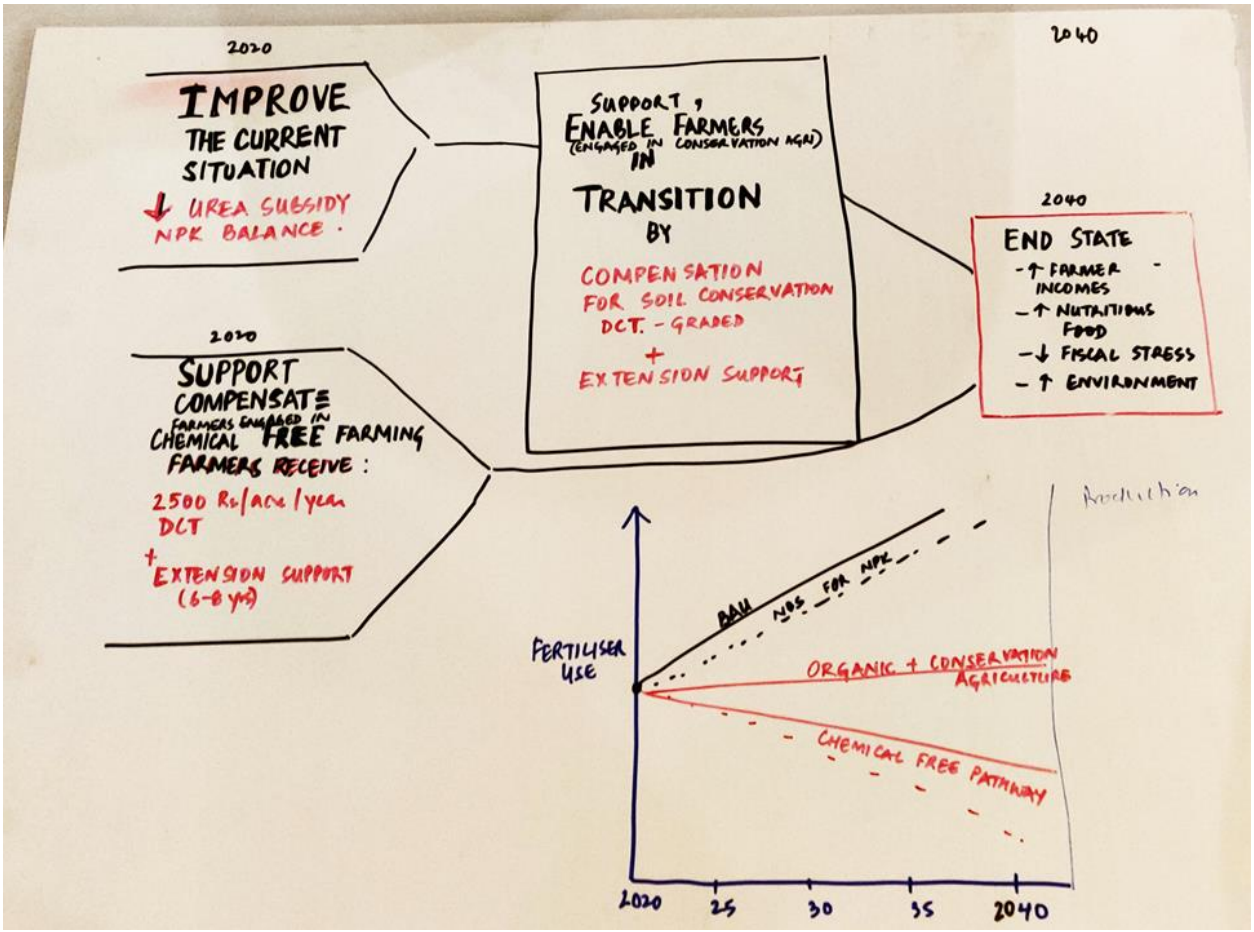



*Figure 2: Collective on the long-term pathway*

## Comments on Direct Cash Transfer (DCT)

There was a brief presentation by the Shri Dharampal (Additional Secretary) and participants responded to the DCT proposal, with their comments as shown below.

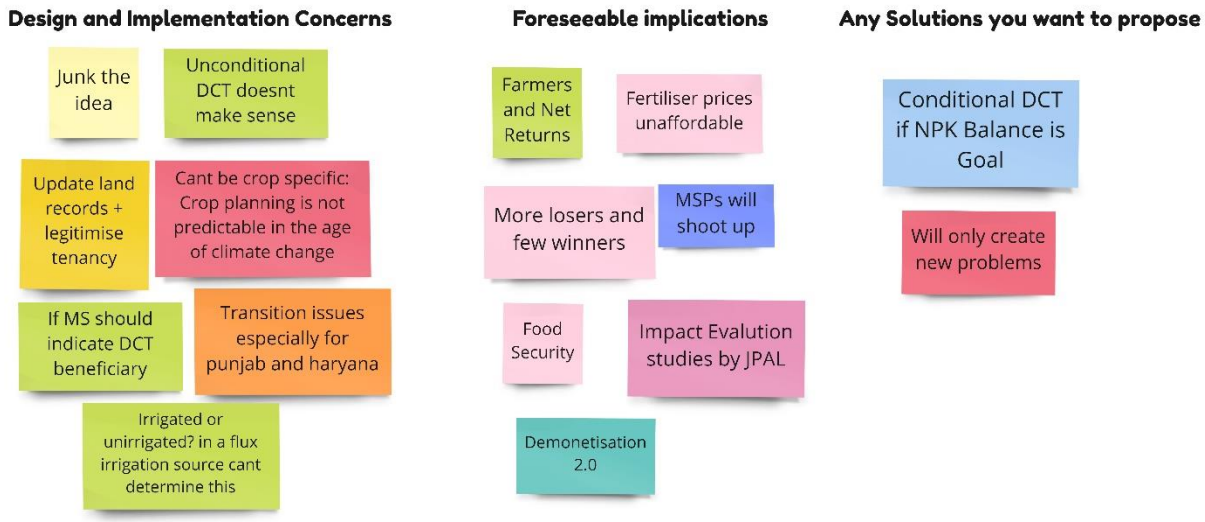



*Figure 3: Comments on DCT*

## Commitments coming from various participants

The workshop concluded with many participants coming forward to commit to action items to take the agenda from the workshop further. The commitments are given in the table below. Bharat Krishak Samaj and Socratus will work with the participants to take these commitments ahead.

| **Commitment** | **Next steps** |
|---|---|
| Build political and institutional consensus on NBS | Convene a meeting with the Ministry of agriculture/ fertilizers and Niti Ayog after further strengthening the scenario builder |
| Roadmap to nationalise the CMNF model in Andhra Pradesh | Organize a travelling Wicked sprint Workshop in AP to see the model on ground- Help improve the model; pathway to take it across the country. |
| | Bring the CMNF model as a pilot to Punjab via the farmers commission |
| DCT- measured assessment and response to the govt. | Supported by farmers groups and experts |
| Second line capacity building for farmers / youth leaders | Organize a workshop and get participants |

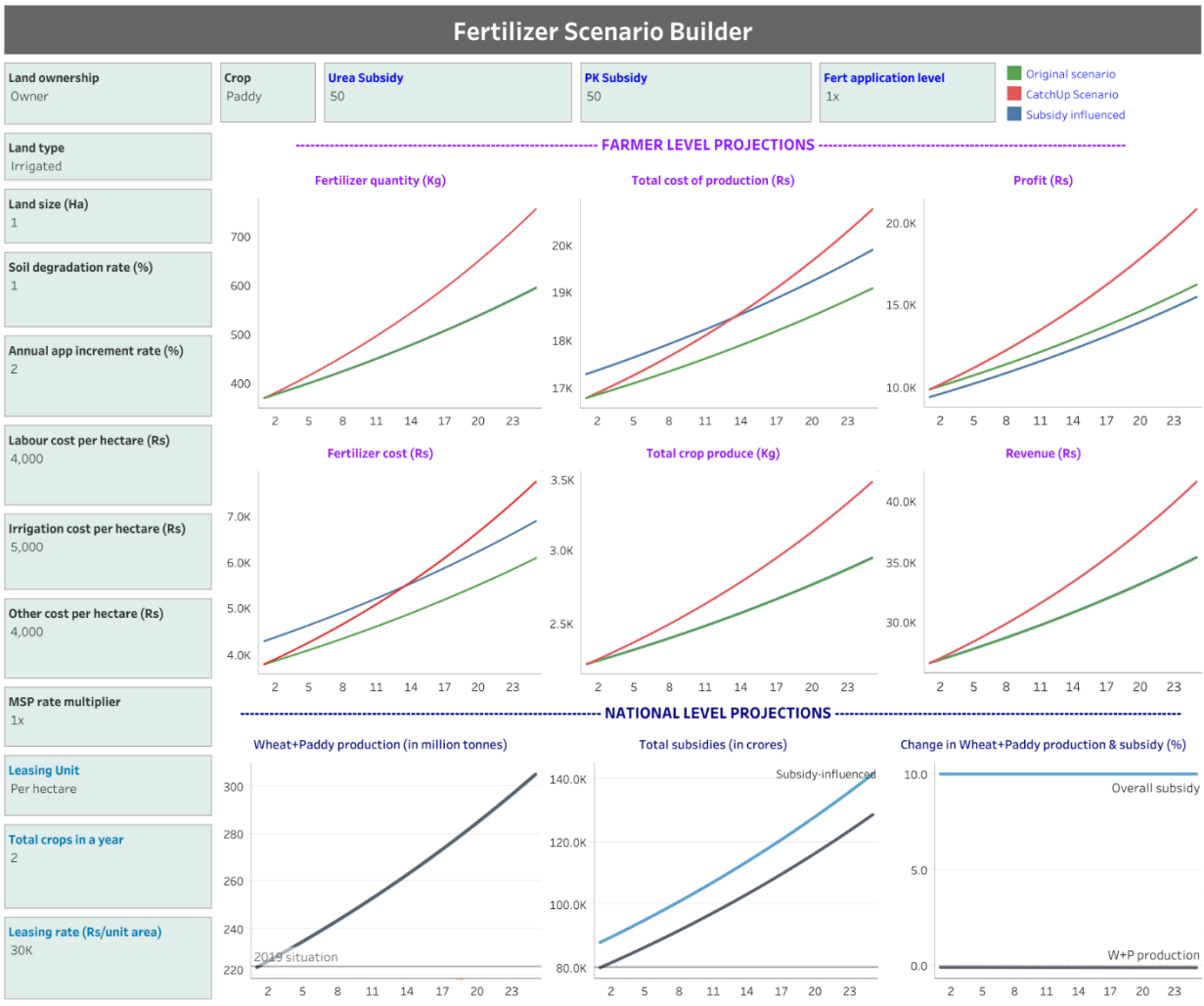
# Annexure 1: Example of a group playing with the Scenario Builder

‘Scenario Builder’ is a forecasting tool built in partnership with IIT Bombay. Built on multi-dimensional data, it allowed participants to simulate an environment by changing multiple input parameters such as fertilizer subsidy, crop type, fertilizer usage etc. Participants could see the change in output parameters such as subsidy bill, farmer incomes etc. Participants worked in groups to build and test alternate scenarios. See the video here.

Observations of one group playing with the Scenario Builder

- Current situation is unsustainable
- Objective 1: Farmer incomes should increase substantially (and surely not reduce)
- Objective 2: Subsidy Bill should remain the same without disrupting production
- Unirrigated farmers gain, irrigated farmers don’t lose out, horticulture crops gain

*Image – Test scenario with Urea subsidy reduced to 50% and PK subsidy increase to 50%*



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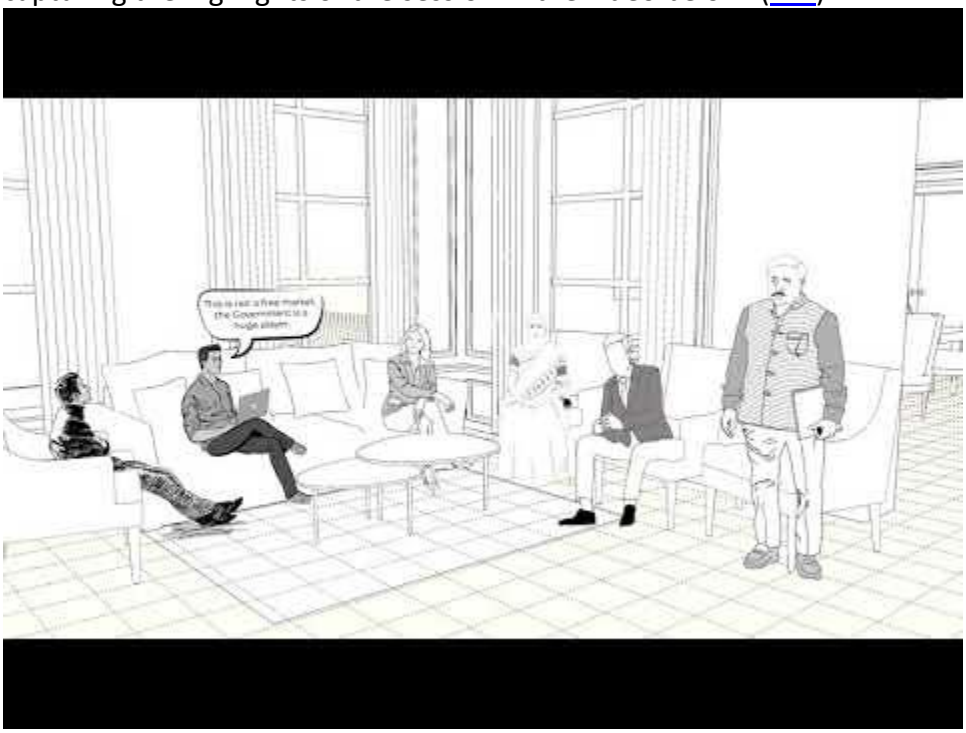
## Annexure 2: Sensome

Participants were facilitated to keep all stakeholders in mind while discussing the issue of recasting fertilizer subsidy. They were asked to think about the most marginalised and invisible farmers, as well as the government, the industry players and other stakeholders. One of the sessions towards this objective was the Sensome session. Sensome is an immersive, interactive 3-D environment that enabled participants to and jointly explore the system from different vantage points. The immersive worlds in the wicked sprint were: a village chaupal, a fertilizer dealer shop, an industry body meeting and a government meeting. Please see the video capturing the highlights of the session in the video below. (link)



## Annexure 3: Price Estimates of Fertilizers - Proposal A

| | *Current price / Ton* | *Current price / Bag* | *Price after 1 year* | *Price after 2 years* | *Price after 3 years* |
|---|---|---|---|---|---|
| ***Urea*** | 5922 | 266 | 356 | 446 | 536 |
| ***DAP*** | 24000 | 1200 | 1100 | 1000 | 900 |
| ***MOP*** | 17500 | 875 | 775 | 675 | 575 |

**All prices in INR. Urea bag is 45 kgs. DAP and MOP bags are 50 kgs.*

*Subsidy bill is estimated to remain the same at the new prices*

## Some memories from the Wicked Sprint



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# About Bharat Krishak Samaj (BKS)

Bharat Krishak Samaj (BKS) is a non-political, non-sectarian association of agriculture producers founded on 3rd April, 1955 by founder president Dr. Panjabrao S. Deshmukh Ji. BKS creates a common meeting ground where all men and women who are interested in strengthening the agricultural economy of the country can meet and utilize their intelligence, resources and energy to help those engaged to produce more from their land. Advocating on the crucial need for India to focus on farmer prosperity, BKS is in regular contact with the stakeholders through activities including farm visits, meetings, seminars & publications. It publishes a monthly journal “Krishak Samachar” (in English and Hindi) with over 32,000 copies circulated free of cost to farmers every month. It also has a bi-monthly English magazine “Farmers’ Forum”. The list of activities can be seen here. Its current Chairman is Ajay Vir Jakhar.

# About Socratus Foundation for Collective Wisdom

## Leadership at Socratus

Socratus aims to unlock collective wisdom through which India can flourish sustainably for all its citizens. It creates and enables spaces, tools and learning for designing and prototyping solutions to wicked systemic problems.

Socratus is founded by G. Ananthapadmanabhan (previously CEO of Azim Premji Philanthropic Initiatives and Amnesty India) and Rajesh Kasturirangan (Cognitive scientist and founder of ClimateX, MIT’s climate portal).

## Our Philosophy

Socratus takes the view that Instead of designing solutions outside the system (by consultants, think tanks etc.) and then hoping that advocacy will help sell those solutions to those who make decisions, we believe that the emerging transformations must be co-designed with the agents in the room. For example: to solve issues in agriculture, we need to bring agents - farmers, agribusiness, the political class, bureaucrats - who live and work within food systems, into the room to co-create solutions.

For better solutions to emerge during the co-designing process, we need to improve the thinking of agents. Typically, the agents, like all of us, tend to live in filter bubbles. The traditional conferences and events are more about presenting your point of view instead of learning and designing. There are few spaces that actually enable meaningful deliberation. With our partners, we create learning and doing spaces, where participants share and learn from each other and experts and then design solutions collaboratively that are iterated on based on feedback. We use tools and principles from cognitive science, design, social sector and technology to build these sprints.