Agricultural Federalism
New Facts, Constitutional Vision

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This paper argues for a reassessment of the distinct and complementary roles of the union and states in the agriculture sector in accord with the spirit of the Constitution. It then goes on to spell out five principles consistent with these distinct but complementary roles. Finally, the paper concludes by noting that achieving this vision would require the states and union to embrace the kind of cooperative federalism that led to the realisation of the goods and services tax.

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In 2021, the passage of three agricultural laws and their rollback, in response to protests, provoked a number of heated controversies: the lack of discussion and consultation by the union government, the need for providing greater freedom to farmers to sell their produce and lease their land, the apprehension that agriculture would be corporatised to the detriment of farmers, and the opposite apprehension that market-oriented reforms elsewhere in the economy would be put on hold because attempts in agriculture would be deemed to have failed.

One common feature to these discussions was their singular focus on the actions of the union government. Missing altogether was the role and responsibility of the states, which is somewhat ironic given that agriculture is a state subject under the Constitution.

In this paper, we correct this omission by focusing on two dimensions of agriculture related to the states. First, we present new facts on the disparities across states of the union government support for agriculture (we thus ignore support by the state governments to their own farmers in the form of power, irrigation, water subsidies, and loan waivers).

We restrict our analysis to a particular kind of support: subsidies and transfers to farmers and states that largely come from three central ministries: the Ministry of Agriculture and Farmers' Welfare, which implements the biggest scheme, Pradhan Mantri Kisan Samman Nidhi (PM-KISAN); the Department of Fertilisers; and the Department of Food and Public Distribution, for the decentralised procurement scheme. We ignore the spendings that have cross-state effects such as those on research and development, and also various crop-specific schemes, and schemes with more modest outlays, such as the Pradhan Mantri Krishi Sinchai Yojana (PMKSY)—"Har Khet Ko Pani" (implemented by the Ministry of Jal Shakti) and watershed management (under the Ministry of Rural Development), etc.

Second, based on these facts, we present some ideas on how to reform agricultural policy more broadly in a manner that restores the spirit inherent in the Constitution, assigning agriculture as a state subject: namely the states rather than the union should have both more agency and commensurate accountability for the agricultural sector and its farmers.[1] While our vision is new and radical, it is originalist in the sense that it seeks to go back to the key principles in the Constitution and those underlying a rational allocation of responsibilities in a federal system. To this end, we suggest several principles that should guide policy changes going forward.

For historical reasons, going back to the perennial shortage of food and cereals, agricultural droughts of the mid-1960s, the subsequent foreign exchange crisis and the geopolitical implications for India, the union government acquired a lead role in shaping the fate of Indian agriculture. This role included the adoption of green revolution technologies, their dissemination through research and extension services, the push to greater use of inputs such as new seed varieties and especially fertilisers that were essential for enhanced yields of the new seeds. Over time, the union government further incentivised the production of major cereal crops—wheat and rice—through increased assured procurement by the government at predetermined minimum support prices (MSPs). The need for procurement grew after the passage of the National Food Security Act (NFSA), 2013 meant to strengthen the food safety net for nearly two-thirds of the country's population.

Several researchers and papers have contributed to estimating various agricultural subsidies. For example, aggregate estimates for a broad set of subsidies are provided in Ramaswami (2019) or Mullen et al (2005). Chatterjee and Kapur (2017) had highlighted interstate disparities in public procurement and Gupta et al (2021) provide a recent update on the current state of public procurement. Gulati and Narayanan (2000) show how much of the fertiliser subsidy is captured by the fertiliser industry and the electricity subsidy by non-agricultural consumers. Papers like Gulati et al (2018) also present important ideas to reform and redesign existing subsidies. In addition, Gulati (1989) presents a statewise analysis of input subsidies like fertiliser, electricity, and credit.

Our goal in this paper is different from this body of work. While the aggregate picture on subsidies is well known, we disaggregate three key subsidies provided by the union government to the state level and provide the most recent estimates for the same. Most importantly, the focus of the paper is to highlight the severe inequities in the subsidies farmers receive from the union government across states and how these might be addressed.

Itemising Subsidies and Transfers

The post-independence history of agriculture policies is too rich and complex to discuss here.[2] Instead, we want to quantify the extent of union government budgetary subsidisation of agriculture and its differential benefits across the states. This has parallels with the discussions of horizontal equity in fiscal federalism that successive finance commissions have grappled with. Here, we quantify the horizontal equity dimension in agricultural subsidies and transfers.

The union governments budgetary help for agriculture/farmers arises in five major ways by: (i) guaranteeing minimum prices and procurement can act like a production subsidy if prices exceed some benchmark "market" price (output subsidy); (ii) carrying stocks, mostly of wheat and rice, well in excess of the official buffer requirements, and paying the resulting interest charges (stock subsidy); (iii) paying for the states' taxes and fees levied on agricultural output (fiscal subsidy); (iv) providing subsidies for the use of different fertilisers, urea, di-ammonium phosphate (DAP) and muriate of potash (MOP) (fertiliser subsidy); and (v) effecting direct cash transfers to agricultural households under the PM-KISAN scheme started in 2019–20 (direct income benefit).

Before we present our estimates for the statewise benefits, we clarify some issues and elaborate on some underlying assumptions and calculations. First, our estimates approximate the union governments annual budgetary help in the post-goods and services tax (GST), pre-COVID-19 years, that is, 2018–20. We provide the precise details regarding each programme, subsidy, data sources, estimation, and assumptions in the appendix.

We recognise that the recent surge in the global prices of food and fertilisers in the aftermath of the Russian invasion of Ukraine is likely to alter these numbers considerably. If higher global prices pass through into Indian markets will, on the one hand, reduce the output subsidy because the government can both dispose of excess stocks and will not have to procure as much (beyond the requirements of the NFSA and buffer stock) in the near future. On the other, they will increase the fertiliser subsidy. Our estimates should be interpreted as being indicative of normal times rather than of the current unusual situation. If the new normal turns out to be different, these estimates will have to be modified accordingly.

Second, of the four subsidies, while the output and fertiliser subsidies benefit farmers, they do not get its full benefits. For instance, only a part of the fertiliser subsidy is captured by the fertiliser industry. On the other hand, the fiscal subsidy goes directly to the state government coffers not to farmers. The food buffer stock subsidy is an explicit cost to the union government and the counterpart benefit is indirectly captured in the output subsidy because it is that which leads to overproduction and overprocurement.

Third, even within those policies to benefit farmers, there is a hierarchy. On the one hand is the PM-KISAN scheme that directly adds to farmers' income with limited "leakages" along the way. Next are the fertiliser and output subsidies which benefit farmers indirectly via input prices and output, respectively. The magnitude of that benefit will depend on costs and the supply curve. The fertiliser subsidy suffers from several leakages. Some of the subsidy goes to inefficient domestic producers rather than to farmers themselves. And because urea is much more heavily subsidised than other fertilisers, it is more prone to cross-border smuggling or diversion for non-agricultural uses.

Fourth, the relative incidence of the fertiliser subsidy is correlated with consumption of fertilisers, which in turn relates to agricultural production in each state. The other three subsidies arise not because of *production* but because the union government *procures* the output and pays the MSP. If there is no procurement, there is no output or fiscal or stock subsidy. In the case of fertiliser, there is a subsidy even without procurement.

Fifth, the output subsidy is not easy to estimate. Essentially, we want to measure the benefit to farmers from guaranteed minimum prices and procurement relative to what would have been the case in the absence of these arrangements. In principle, estimating this would require an elaborate model that simulates demand and supply, equilibrium prices and quantities with and without MSP-cum-procurement. This modelling would also have to incorporate the significant benefits that arise from farmers being protected from the price and quantity volatility and uncertainty. All this poses considerably analytical and estimation challenges.

Instead, we adopt a parsimonious approach to measure the benefits. We do so in two ways. First, we estimate the benefit as the difference between the MSP price and a price that prevails in markets where procurement is limited (less than 40% of total output). In the case of rice, we take the average of prices in states other than Punjab, Haryana, Telangana, Uttarakhand, Andhra Pradesh (AP), Odisha, and Chhattisgarh, which together account for about two-thirds of all procurement.[3] In the case of wheat, we take the average of prices in states other than Punjab, Haryana, and Madhya Pradesh (MP), which together account for about 85% of procurement. The benefit is the difference in these prices times the quantity procured from each state.

In an alternative estimate, we calculate the benefit to farmers as a cost to the government. If the government has to procure amounts greater than the minimum buffer stock, it will end up paying an actual fiscal cost depending on how much of this excess it can dispose of and at what price (over and above the requirements of the public distribution system [PDS]). Since we cannot predict the latter, we do the calculations assuming that the government can dispose of only 50% at something close to the cost of procurement with the remaining 50% lost due to waste and other factors.

Sixth, there is a stock subsidy. In recent years, the output subsidy manifests as production in considerable excess of the minimum buffer stock. We measure this "stock subsidy" as the annual interest costs that the government has to pay to carry this excess stock. Note that this is distinct from the output subsidy discussed above, which is about the prospects of disposing off the excess stock after the year in which it is held.[4]

Finally, we estimate the fiscal subsidy which is less well known and needs explanation. When the union government procures wheat and rice (or pays state governments for their procurement), it pays a price that is the MSP plus all the taxes and fees that the state government levies on agricultural products. For decades, these market fees have varied by an order of magnitude across states. In the late 1970s, the fees were 3% in Haryana and Punjab, 1% in Uttar Pradesh (UP) and West Bengal and just 0.25% in Odisha. Currently, Punjab levies a tax of 6% (market fee 3%, rural development cess 3%), while in Haryana, its 4% (market fee 2%, rural development cess 2%) and considerably lower in other states. In addition to the taxes, there are also other charges like administrative fees, interest costs, *arthiya* commission that raise the total tax and fees in Punjab and Haryana to about 12% and 9%, respectively, of the MSP.

In effect, the union government (the national taxpayer) is paying the states' taxes. The state governments are passing on state taxes beyond consumers in their jurisdiction. The greater the taxes levied by state governments, and the more the procurement from those states, the greater the fiscal subsidy they receive from the union government.

Subsidies and Transfer: Aggregate and Statewise

With these clarifications, we turn to the estimates that we compute for the last "normal," pre-pandemic year, namely 2019–20. Our numbers are estimates and not exact values and the details on the assumptions and the estimation procedure are provided in the appendix. Table 1 shows the aggregate amounts for each of these five subsidies. Together, they amounted to between ₹1.7 and ₹1.9 lakh crore in 2019–20. Of this, the fertiliser subsidy accounts for about ₹75,000 crore, followed by PM-KISAN (₹60,000 crore). The output subsidy is somewhere between ₹14,000 crore (a lower bound, based on market prices of limited procurement states) and ₹30,000 crore (upper bound, assuming the subsidy equal to the wastage of excess procured grains). The transfer to state government exchequers (the fiscal subsidy) from the union government amounts to about ₹13,000 crore.

These union government subsidies and transfers result in an annual benefit of about ₹18,000–₹20,000 per agricultural household, or a monthly transfer of ₹1,500–₹1,800 per month per agricultural household. These precise numbers will depend on estimates of the number of agricultural households in the country. Our baseline estimates are based on the National Sample Survey estimate of about 93 million agricultural households in India in 2019, but we recognise that there is considerable uncertainty on the total number of agricultural households, depending on classification, definitions, and the data source.[5]

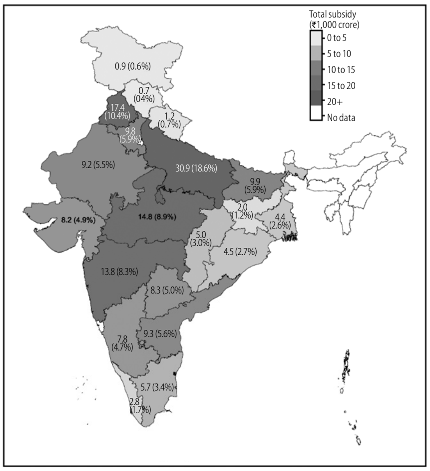
These aggregates obscure enormous and egregious disparities between small and big farmers and between farmers today and farmers tomorrow (because of environmental effects). For example, larger farmers use more fertilisers and receive more fertiliser subsidies on the one hand and sell more to the government and hence gain the accompanying benefits, on the other. Similarly, under the PM-KISAN, only farmers with titles receive benefits, excluding tenant farmers and landless labourers. Since only a small fraction of owner cultivator farmers are female and Scheduled Castes (SCs) and Scheduled Tribes (STs) are over-represented among landless labourers, they gain little

Table 1: Aggregate Subsidies and Transfers in Agriculture, 2019–20

	Output Subsidy	Waste of Excess Stocks @50%	Procurement-related Taxes and Fees	Interest Cost on Excess Stocks	PM-KISAN (Direct Cash Transfer)	Fertiliser Subsidy	Total Subsidy (1)	Total Subsidy (2)
	A	B	C	D	E	F	A+C+D+E+F	C+B+D+E+F
Total subsidy (in ₹1,000 crore)	13.8	32.4	13.3	4.4	61.9	75.8	169	188
Share in total subsidy (1)	8%		8%	3%	37%	45%	100%	
Share in total subsidy (2)		17%	7%	2%	33%	40%		100%
Subsidy per agricultural hosuehold (₹)	1,482	3,480	1,429	473	6,649	8,142	18,175	20,173

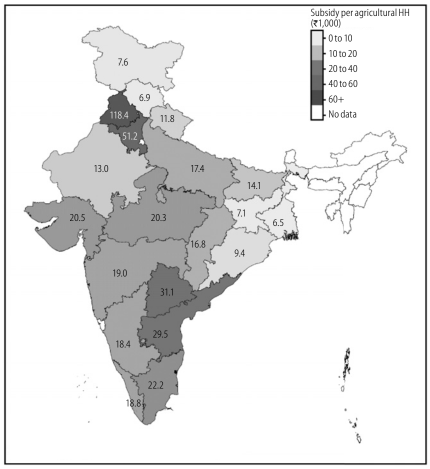
The estimates are not exact for 2019–20 but approximate a typical post-GST, pre-COVID-19 year like 2019-20. Further details can be found in the appendix.
Source: Computed by the authors.

Figure 1a: Agricultural Subsidies Received by States (₹1,000 crore)



Total subsidy: State share in national subsidy outlay is mentioned in parentheses.
Source: Computed by the authors.

Figure 1b: Agricultural Subsidies Received by States (₹1,000 per agricultural household)



Subsidy per agricultural household.
Source: Computed by the authors.

from the programme. Important as these inequalities are, we do not explore them here as our focus is on the disparities/inequities across states.

In absolute rupee terms, UP is the largest beneficiary (18%–20% of the total) followed by Punjab (10%–12%), MP (8%–10%), Maharashtra, AP, and Telangana. UP is the largest beneficiary despite not being a state from which the largest amounts of procurement takes place simply because it is the largest consumer of fertilisers, especially urea, and gets the largest transfers under PM-KISAN (one-fifth of all farming households in India are in UP). Punjab's high benefits (and those of MP and Haryana) stem from procurement from these states being high. That is also true of Telangana and AP where rice procurement is high. Among the large states, Tamil Nadu and especially West Bengal are not sizeable beneficiaries.

Moving from absolute amounts to benefits normalised by the number of agricultural households in a state changes the picture significantly. Now, Punjab dwarfs other states. The average agricultural household in Punjab gets between ₹1.2 lakh and ₹1.5 lakh per year, about 10 times the national average of ₹18,000–₹20,000 per household. This is followed by Haryana whose benefits per household are between ₹50,000 and ₹65,000, also well above the national average. These two states account for a large share of total spending but only account for between 1.5% and 2% of the total agricultural households in India. On a per agricultural household basis, UP is not a particularly large beneficiary, but this likely hides large variations between eastern and western UP. The two northern states are followed by Telangana and AP, where the average agricultural household receives about ₹30,000–₹36,000 annually.

In contrast, farmers in the eastern states—Jharkhand, Odisha, West Bengal, and Bihar—get a fraction of the union subsidies received by those in north-west India. The disfavouring of the east is as striking as the bias towards the northern states. In part, this is due to the tiny size of many farms in this part of the country, with little surplus to sell. But in part, it is also self-inflicted. Lower transfers also stem from smaller amounts of procurement. It is true that the centre does not procure much from these states. But as the experience of MP shows there is nothing preventing states from procuring crop from their farmers, which the union government is committed to finance. Another cause for self-infliction is political. For example, West Bengal refused to receive funds from PM-KISAN from its inception (February 2018) until April 2021, which would have doubled the union government subsidies to its farmers.[6]

These massive regional inequalities are also a pointer on why the most vocal farmers' protests occurred among richer farmers in north-west India and not among their poorer counterparts in eastern India. The latter do not receive much so they are not apprehensive about losing much either.

Vision for Agriculture

Our findings above show that there are large inequities across states resulting from the union government spending on agriculture. There were sound reasons for the initial set of policies that have led to the current situation. In effect, in the aftermath of the food crisis in the mid-1960s, the union government on behalf of the country created a social contract under which the north-western states—especially Punjab and Haryana—ended up being the breadbasket of India. This contract entailed government support for these states in return for the boost in production that the country benefited from. Over time, the benefits of this contract extended to other states in varying degrees.

But more than half a century later, events have overtaken that contract. India faces a permanent glut in the production of cereals, especially wheat and rice. And while for these crops India has been running massive excess stocks, a large section of the population remains nutrient-deficient. Moreover, that contract has become expensive in multiple ways—financial, environmental, and structural. It also created a network of powerful interests vested in maintaining the status quo. The social contract needs revision.[7] And, as the figures show, social contract has become deeply inequitable across the states.

One can view the subsidies calculated above from a fiscal perspective or as an agricultural intervention and assess how equitable they are. Figure 2a (p 43) views the subsidies as fiscal transfers and hence plots the resulting transfer in per capita terms against a state's per capita gross domestic product (GDP). As a fiscal transfer, poorer states should be receiving more than richer ones. In fact, the figure shows that the correlation is strong but in exactly the opposite direction. Richer states (Punjab, Haryana, Telangana, Gujarat, Karnataka, Maharashtra, and Tamil Nadu) are much bigger beneficiaries compared to the

Figure 2a: Fiscal Transfers and State per Capita GDP

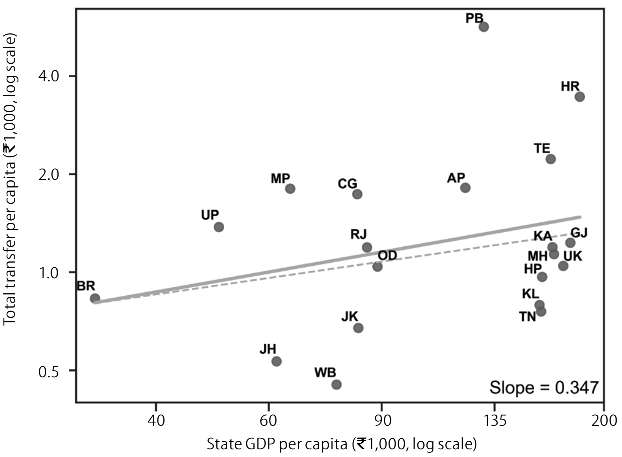
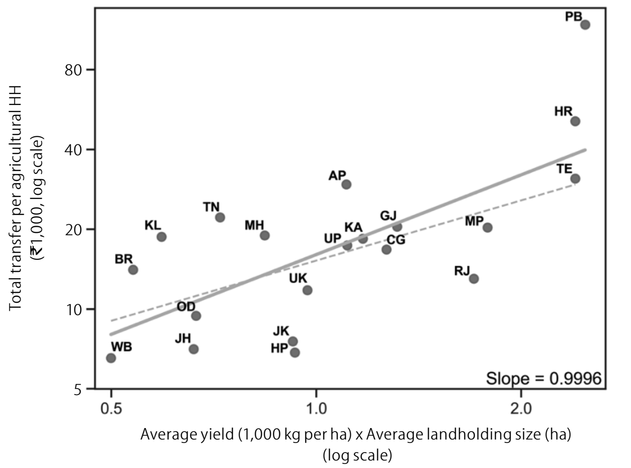


Figure 2b: Subsidies and Agricultural Income (per agricultural household)



The dotted line represents the line of best fit without Punjab to illustrate that the positive relationship is not just driven by Punjab.
Source: Computed by the authors.

poorer states. As a fiscal intervention, agricultural subsidies are grossly inequitable.

Figure 2b views these transfers and subsidies as agricultural interventions. The question then is whether these are correlated with agricultural household incomes. We cannot use the latter directly because they will include the transfers themselves. So, we use a relatively exogenous proxy measure of such incomes, which is the average yield across foodgrains in a state times the average landholding size per household. Again, we find a strikingly inequitable correlation. Agricultural subsidies and transfers go to states that have richer agricultural households.

One concern here may be that yields are higher because of the fertiliser subsidies. Hence, we plot Figure 2b but use transfers without fertiliser subsidies on the y-axis. The correlation then is even greater (Appendix Figure A1 [p 47]). Thus, it is evident that with regard to agriculture and farmers, the union government's subsidies and transfers clearly violate horizontal equity.

This is particularly important because the country has well-tried and robust mechanisms for transferring fiscal resources to, and among states, which explicitly incorporate equity criteria. The finance commission has consistently been making transfers across states that are weighted towards addressing interstate inequalities. Many of the criteria used to make transfers such as population and per capita GDP reflect this effort. Moreover, the awards of finance commissions have been always accepted as a reasonable political compromise. It is therefore redundant and, as the evidence shows, counterproductive, to have complex multiple instruments in multiple sectors for transferring resources from the centre to the states.

Reforms going forward must outline a vision for the end-goal based on important principles of the Constitution and federal structure. Hence, consistent with the constitutional designation of agriculture as a state subject and the implication that that agency and accountability for agriculture and farmers must be restored to the states, we enunciate several principles that should undergird any new vision for agriculture.

Principles Underlying the Vision

States should have the freedom but also the responsibility to discharge their constitutional obligations on agriculture: The states will have the freedom and responsibility to institute whatever mechanisms they consider necessary and desirable (politically and financially) to incentivise or protect farmers in their states. They could undertake procurement, deficiency payments, crop insurance or any combination thereof. But it would be up to them. The union government would not finance state government initiatives towards their farmers. This would distinguish clearly the current system from what we envisage for the future. State government accountability cannot be built if they have no skin in the game in terms of financing.[8]

The states cannot inflict externalities on other states via their agricultural policies: In a federal system, the flip side of the freedom to address agriculture within its borders must come with an obligation on states not to impose costs on others.

The most salient example relates to aquifers.[9] A number of state government policies but especially the power and water subsidies encourage overuse of water, depleting aquifers, which affect water resources in general (a national resource) and specifically availability in neighbouring states (Bhagole and Khedgikar 2021). In principle, the union should have the right to take corrective action against such negative externalities imposed by states. In practice, action will have to be context-specific.

The union government's 'donts' on agriculture involve not distorting agriculture and production: An implication of the first principle—and of the evidence we have provided—is that the union should in general not be providing subsidies and transfers to farmers, including via MSP-cum-procurement, especially since they also distort agricultural markets across the country and they result in unjustifiably inequitable transfers.

The union government may want to continue providing the consumer subsidy for the poor—via the NFSA—for which the union has assumed statutory responsibility.[10] There are sound equity and ethical principles—for example, no citizen of the country should go without a minimum level of nutrition—that might justify the union's continued intervention. Our focus here is on the production side.

It must, however, be kept in mind that the NFSA does affect production in a more fundamental way by shaping decisions of what, where and how much is produced. The fact that the government is a large buyer for the PDS and that the NFSA favours wheat and rice has led to overproduction of wheat and rice, especially in the north-west, and depressed producer prices and incomes of wheat- and rice-growing farmers in other areas such as Bihar. It also disincentivises growing higher quality wheat and rice, evident in the considerably lower price Indian wheat and rice exports command in world markets.

Analytically, the NFSA appears to be a consumption subsidy (which in principle should not distort production decisions) but in practice because the government is such a large buyer of particular commodities it demonstrably has. How the NFSA should be redesigned is beyond the scope of this paper. But, going forward, it must be neutral between crops, by emphasising nutrition rather than favouring rice and wheat; and it must allow states themselves to make decisions about how best to promote nutrition as Odisha is doing with its emphasis on millets. In the longer run, the aim should be to restrict the role of the union government to *finance* better nutrition without distorting agriculture and production choices.

Similarly, the union government must avoid policies that negatively affect farmers. And if it does, it should compensate farmers accordingly. When the union chooses to put in a fertiliser policy that is cost-based, it artificially inflates the cost of fertilisers. This is a subsidy to industry in the name of farmers. Similarly, when it institutes export bans or imports crops when the price of an agriculture commodity goes up, it penalises farmers in favour of consumers. It certainly has an obligation to rein in inflation. But it should do so directly through the PDS than controls that impose costs on farmers.

The centre's dos include providing broad-based national public goods (research and development, insurance, and risk-taking): If these are a number of injunctions against union government intervention, there is also a positive agenda for the union. It needs to do much more to provide the broader public goods (whose benefits flow across borders) to support Indian agriculture and the country's farmers. This is especially the case with research, given the low yields in Indian agriculture and the looming threat posed by climate change, which puts a particular urgency to develop new seed varieties. It should also do more to strengthen phytosanitary standards, which are essential to improve the acceptance of India's agriculture exports.

The union government must have mechanisms to respond to the shocks that affect farmers across the country. While there are mechanisms in places to help states that face local shocks like floods and droughts, there can be other shocks that are not addressed. For example, without a fertiliser subsidy, if a war results in an increase in fertiliser prices that is passed on to retail prices, it would inflict large costs on farmers. In such extreme and rare situations, the union government should step in and provide insurance.

The risks to Indian agriculture, farmers and food security from climate change are being underplayed with so much of the focus on short-term seasonal issues like procurement and MSP. The current heatwave that adversely affected the wheat harvest may well be a harbinger of how climate change could become an existential threat in a few decades. The union government needs to put in much greater effort to coordinate and finance a national response to address this immense challenge.

Even if the centre gets out of procurement from farmers, it will continue to have an important role in maintaining buffer stocks, acting in its role as provider of national insurance.

Consistent with the Constitution, the union and the states cannot undermine India's one market: Neither the union nor can the states impose restrictions that impede the free flow of agricultural goods within the country. For example, the union cannot impose stocking requirements or restrictions on the movement of foodstuffs by invoking the essential commodities act, unless it is done with full concurrence of the state(s) concerned.

Discussion

The interesting possibility we envisage is that different states will try different mechanisms and this could lead to experimentation and learning for the country as a whole. The example of MP is instructive. Since the mid-2000s, it took the initiative to implement an effective MSP system (of course, financed by the union government) based on decentralised procurement. The political success of Shivraj Singh Chouhan owed in part to booming agriculture in MP. Similarly, it implemented a deficiency payments scheme, which was mostly a failure, but offered lessons for future iterations and for all other states.

Odisha has experimented with procuring millets, thus promoting its cultivation and then introducing it in the PDS for improving nutrition. States have also experimented with direct benefit transfers, exemplified by Odisha's Kalia scheme, which is different from the original Rythu Bandhu scheme of Telangana. These examples are exactly the kind of state-based agency, political accountability and innovation that India needs in agriculture.

A big question relates to PM-KISAN. The broader issue here is why landed farmers should be favoured as a target for receiving cash transfers. Why exclude cultivators or landless labourers (or for that matter goat herders)? Yes, the latter have the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), but they have to work hard for it, whereas landed farmers get the money no matter what. Equally, why not artisans and small enterprise owners who have been subject to so many shocks recently (demonetisation, GST, and COVID-19)? There is no PM-Mazdoor for construction workers. Do they work less hard or face less risk? Are all these payments to farmers, while justifiably individually collectively impeding the fundamentally necessary structural transformation in the economy by encouraging households to remain in agriculture?

Ideally, we would see PM-KISAN folded into a universal basic income scheme that would take the form of a monthly cash transfer to all but a certain group of relatively well-off households at the top (identified as taxpayers, those with certain assets). The idea here would be to exclude out the rich rather than target the relatively poor. Ideally, this quasi-universal basic income (QUBI) would be implemented by the centre and the states coming together with each contributing a certain sum.[11] Critically, such a shift would not differentiate by occupation, as all the schemes for farmers are currently doing. A marginal farmer currently knows that even though his plot is fundamentally uneconomical, they at least are guaranteed some benefits qua farmer, meagre as they are. But if they leave farming, what do they have?[12]

Given that protecting farmers against *national* shocks should continue to be the centre's responsibility, a number of ideas could be considered. The record of crop insurance and other similar schemes is spotty (at best) not just in India but around the world. The state capacity and implementation challenges are huge. However, India can build upon the experience of PM-KISAN. One idea would be that the transfers under PM-KISAN be adjusted for large and rare aggregate shocks.

The definition of "large," "aggregate" and "rare shocks" would have to be elaborated and agreed. If the shocks are small, farmers would be covered by the basic transfer under PM-KISAN so the need for a top-up would be reduced. If the shocks are not national, state governments would take responsibility. And the shocks covered would be those that occur via plenty and paucity; that is, shocks would include both droughts and output shortfalls, and depressed overall prices from, say, declines in global prices. Such a calibrated, countercyclical response could be an imaginative way forward to provide insurance to farmers building on existing success.

Our proposals have been made in the context of agricultural surplus. Would they remain valid if an era of plenty comes to an end and is replaced by one of stagnant production and rising agricultural prices? As of this writing, the outlook for agricultural production for the next year has turned pessimistic for two different reasons: the Russian invasion of Ukraine and the heatwave.

We need to distinguish the two when analysing the validity of our proposals. The Russian invasion of Ukraine has led to a rise in world prices of wheat output as well as of a key agricultural input, namely fertilisers. The first development constitutes a positive demand shock for farmers. Farm output and agricultural incomes will rise, although these will be tempered by the increase in fertiliser prices and the degree to which the union government cushions the increase through higher fertiliser subsidies. By the same token, food consumers will be adversely affected. However, since the government is committed to supplying the PDS, consumers will be insulated from the rise of global food prices at the cost, of course, of an increase in the consumer subsidy. There is no escaping that. The government will have difficulty procuring wheat for the PDS because market prices will exceed the MSP and farmers will find it profitable to sell to the market. This just means that the government will have to procure at higher market prices. In this scenario, production is not the problem; procurement might be but that just means having to pay farmers a higher price.

In contrast, the heatwave or climate change in general is a domestic supply shock that will adversely affect both output and procurement. While the consumer can be protected by the government paying higher prices to procure for the PDS, farm incomes will likely fall.

In the medium run, if climate change and depleting water tables lead to stresses on production, will our proposal of shifting farmer-related incentives to the states undermine aggregate food production and availability? As we have emphasised, climate change is going to be a shock that affects India as a whole, which enhances the role of the union government in taking mitigating action: developing better, drought-resistant seeds, investing in research and development, preventing depletion of aquifers, etc.

The remaining question is whether the union government's withdrawal from MSP-cum-procurement might undermine long-run production incentives. Our response to this legitimate concern is threefold. First, states will have the ability to continue incentivising agriculture—our proposal pushes them to take their constitutional obligations on agriculture more seriously. Second, it must be remembered that under the status quo, the union government's incentivisation of production occurs in two ways, via the guaranteed MSP and via procurement for the PDS. Under our proposal, while the former will be eliminated, the latter will continue. Consequently, farmers will continue to have confidence that a substantial part of their output will still be bought by the union government, even if indirectly from state government procurement agencies or from the market. Third, in the context of climate change and possible scarcity, the buffer-stocking norms may well have to be revised upwards, which the union government will continue to have responsibility for. That too will provide incentives for farmers.

Political Feasibility

We are under no illusion about the political feasibility of our vision in the short run. In our vision, the union government would need to disengage from MSP-cum-procurement and from providing various subsidies. All over the world, withdrawing entitlements is fiendishly difficult and that is true for India too. Indian politics has increasingly become susceptible to the attribution stakes—politicians wanting credit for what they do and showing that benefits flow from their actions. The flip side is that politicians will not want to be visibly seen as eliminating or reducing benefits that are currently being given. The failure of several previous attempts at reducing the fertiliser subsidy is testament to this problem as is the unwillingness of any state government to even contemplate the removal of power subsidy for agriculture.

Even the manner in which PM-KISAN came about—as the union government's response to direct transfer schemes in agriculture by Telangana and Odisha—reflected the fear that credit for helping farmers would be appropriated by state governments. Further, the refusal of the West Bengal government to take advantage of PM-KISAN also revealed the anxiety that the union government would take credit for helping farmers. The attribution stakes are caught in this ever-expanding cycle.

The state governments too have mixed motives and incentives. On the one hand, they chafe under the union government's intervention in agriculture but also benefit from not having to incur the costs of providing benefits to farmers and from not having to face the consequences of some of their own actions. The recent row between Telangana and the union government on the procurement of parboiled rice reflects these mixed incentives.

Agriculture is stuck in a bad status quo but one that is a sort of political equilibrium between the union and the states. Breaking that equilibrium will not be easy. It will require another big dose of cooperative federalism with the centre and states coming together to redo the social contract with transitional assistance for the states as subsidies and transfers are gradually withdrawn. In the current political context, prospects for cooperative federalism do not appear bright.

By the same token, the status quo is not sustainable either. Apart from the economic, environmental and social costs, the status quo is marked by mutual recrimination and continual bickering between the union and the states.

In fact, cooperative federalism not only offers the only way of getting out of the current equilibrium, but also potentially offers scope for incentivising the states to get out of bad policies such as the power subsidy. For example, as in the GST, the union government could provide transitional assistance to cushion the states losing some of the current benefits. But more could be achieved. Some of the transitional assistance could be conditioned on the states eliminating some of their worst policies on agriculture.

Conclusions

Despite farming being a state subject in the Constitution, the union government provides subsidies and transfers amounting to about 1%–1.2% of GDP to the states and their farmers. This is done via five major policy interventions that act in different ways. In absolute rupee terms, UP and Punjab are the major beneficiaries. However, normalised by the number of agricultural households, Punjab and Haryana dwarf the other states in benefits received, while the poorer eastern states receive the least.

These estimates are for 2019–20. We suspect that in the past, the interstate disparities that we have documented were probably even more acute because in recent years, MP, Chhattisgarh, Odisha, Telangana, and AP have benefited from procurement. And in the past, direct benefit transfers, which are more widely spread, did not exist. Indeed, at least when it comes to landowning farming households, PM-KISAN is the most equitable policy instrument.

Given these inequities and consistent with restoring the original vision of the Constitution to have the states in charge of agriculture, we propose a number of principles to underpin this vision: (i) the states will have the freedom and responsibility to discharge their constitutional obligations on agriculture; (ii) the states cannot inflict externalities on other states via their agricultural policies; (iii) the union government's "donts" on agriculture would involve not distorting agriculture and production; (iv) the union's dos would include providing broad-based national public goods (research and development, insurance, risk-taking); and (v) consistent with the Constitution, the union and the states cannot undermine India's national market.

Far from being an abdication of farmer interests by the government, our proposed changes would retain the role but shift the onus from union to state governments congruent with subsidiarity. The union government has major responsibilities on broader public goods affecting farmers' welfare, whether research on new seeds or natural resource management as climate change looms or providing insurance against large, common shocks. The states need to experiment on the mechanisms for reforming agriculture. But they also need to put their money where their mouth is. West Bengal's recent budget saw capital outlays on agriculture between the budget estimates and revised estimates stages drastically cut from ₹6,183 crore to ₹1,744 crore, and illustrates the forked tongue with which states have treated agriculture.

One consequence of our proposal relates to India's obligations under the World Trade Organization (WTO). If the states rather than the union grant output subsidies, a grey area opens up because, strictly speaking, WTO obligations are binding on the union. If under a country's internal constitutional arrangements, the states take actions, the union can invoke those arrangements to qualify its obligations. The WTO jurisprudence on these issues is complex. We are simply raising this as something that will arise from our proposals, which will have to be further explored.

A concluding thought relates to Punjab. It has been one of those rare and tragic examples of agricultural success not facilitating broader structural transformation, in part because of the large subsidies from the union that have tended to entrench the inefficient status quo. One could say Punjab has been afflicted by a kind of aid curse. Removing this debilitating aid could be a galvanising impetus to Punjab undertaking long-overdue reforms of its agriculture, especially since it now has a new government with a fresh outlook on policy.

India's farmers face difficult and complex challenges and addressing them requires the combined efforts of both the federal and subnational governments, an aspiration expressed repeatedly.

The National Commission on Agriculture in 1976 noted that

> The Center–State relations in the matter of agriculture development should be based on consultations, consensus, cooperation and complementarity to foster the discipline of national agriculture development, expand the area of mutual commitment and collaboration and ensure harmonious growth through both national and local initiative. (p 85)

In 2018, more than four decades later, Arun Jaitley, the first minister of finance in the Narendra Modi government, echoed that sentiment:

> Recalling the … Goods and Services Tax (GST) as a good example of co-operative federalism, the Minister (Jaitley) said that an even better instance which would benefit the nation even more would be cooperative federalism in the agricultural sector. He said that cooperation between Centre and states in the federal model would lead to an optimum utilization of Central and state finances deployed towards agriculture.[13]

NOTES

1 The most comprehensive recent official report on reforms in the agriculture sector writ large was the 14-volume report of the "Committee on Doubling on Farmer's Income" chaired by Ashok Dalwai and presented in 2018. More recently, the report of the committee appointed by the Supreme Court in 2021 and headed by Ashok Gulati contains suggestions for reforms in agriculture markets.

2 For a recent summary, see Vandana Menon, Raghav Bikhchandani and Humra Laeeq, "Hungry India, a Nawabi US President, 'Mexican blood': The Real Story of Green Revolution," *Print*, 19 February 2022.

3 https://pib.gov.in/PressReleasePage.aspx?PRID=1740689.

4 The "interest cost" and "wastage" do result in transfers to the states because they are a consequence of procurement from a given state.

5 According to Damodaran and Agarwal, the range varies from 40 million to 150 million (https://indianexpress.com/article/opinion/columns/revealing-indias-actual-farmer-population-7550159/).

6 http://164.100.24.220/loksabhaquestions/annex/178/AU1059.pdf.

7 The long-term impact of the Russian invasion of Ukraine remains to be seen and could potentially affect some of the suggestions below, but, we suspect, not in a major way.

8 Bharat Ramaswami (2020) also makes a suggestion in this spirit: https://indianexpress.com/article/opinion/columns/farmers-protest-farm-laws-msp-modi-govt-7098639/.

9 River water issues are more complicated, having been the subject of intense politicisation and judicial adjudication ever since independence, and are hence not addressed here. For a recent discussion, see Modak and Ghosh (2021) https://www.orfonline.org/research/federalism-and-inter-state-river-water-governance-in-india/.

10 Although beyond the scope of this paper, we believe a re-evaluation of the consumer subsidy is overdue. An important change should be to move toward a broad-based nutrition subsidy replacing the current fixation on wheat and rice which has had perverse effects not just on nutrition but also on reducing crop diversity and negative ecological consequences.

11 Some preliminary ideas are discussed in Felman et al (2019): https://drive.google.com/file/d/1v6-Pu_q64wpenehdSxJVZ7TSDn8RI-JfW/view.

12 https://www.fsa.usda.gov/programs-and-services/market-facilitation-program/index.

13 https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1538478.

14 https://dfpd.gov.in/1sGbO2W68mUlunCgKmpnLF5WHm/4-principlesofprocurementandamendments.pdf.

REFERENCES

Bhagole, S and S Khedgikar (2021): "Run on the Reservoir: Evidence on Administrative Competition for Groundwater in India," Working Paper.

Chatterjee, S and D Kapur (2017): "Six Puzzles in Indian Agriculture," *India Policy Forum 2016*, Vol 17, p 13.

Gulati, A (1989): "Input Subsidies in Indian Agriculture: A Statewise Analysis," *Economic & Political Weekly*, A57–A65.

Gulati, A, T Chatterjee and S Hussain (2018): "Supporting Indian Farmers: Price Support or Direct Income/Investment Support?"

Gulati, A and S Narayanan (2000): "Demystifying Fertiliser and Power Subsidies in India," *Economic & Political Weekly*, pp 784–94.

Gupta, P, R Khera and S Narayanan (2021): "Minimum Support Prices in India: Distilling the Facts."

GOI (1976): Report of the National Commission on Agriculture.

Mullen, K, D Orden and A Gulati (2005): *Agricultural Policies in India: Producer Support Estimates 1985–2002* (No. 596-2016-40011).

Ramaswami, B (2019): Agricultural Subsidies – Study Prepared for XV Finance Commission.

Appendix

In this appendix, we outline the data sources and the estimation of various subsidies.

(i) Output subsidy based on prices in non-procurement states: Statewise data on procurement is obtained from the Food Corporation of India. Statewise farmgate market prices are from Ministry of Agriculture and Farmers' Welfare. We compute the subsidy as $(MSP-P^*) \times Procurement$, where P^* is the average farmgate price in the non-procurement states. The subsidy is computed for two crop years 2018–19 and 2019–20 and then averaged.

(ii) Output subsidy based on excess stock loss: Data on excess stocks of rice and wheat was obtained from the Department of Food and Public Distribution. The subsidy is computed as a total loss of 50% of the excess stock (that is, 50% of $MSP \times Excess\ Stock$). This number was calculated for three years 2018, 2019, and 2020 and then averaged.

(iii) Tax and fees levied on procurement: The taxes and fees levied on procurement by various states was computed using provisional cost sheets available at https://dfpd.gov.in/provisional-cost-sheets.htm. Taxes include *mandi* taxes and other taxes that states levy like the rural development tax. Fees include charges by the state like arthiya commission, interest costs, administrative fees, etc.

For wheat for all states except Uttarakhand, we were able to obtain this for the crop year 2017–18 or the 2018 rabi marketing season. For rice, cost sheets from 2017–18 were available for Punjab, Haryana, Telangana, Odisha, UP, Chhattisgarh, MP, West Bengal, Bihar, and Maharashtra cost sheets were available for 2017–18. For other states, numbers were estimated using the most recent cost sheet available.

In particular, Uttarakhand wheat taxes were estimated using the paddy cost sheet for 2015–16. For rice, taxes in AP, Kerala, Jharkhand, and Tamil Nadu were estimated using 2016–17 cost sheets and for Uttarakhand using the 2015–16 cost sheet. Rajasthan had zero rice procurement.

In order to approximate taxes using previous cost sheets, we excluded VAT rates since they were not applicable in the 2017–18 once GST was implemented. For any other tax or fee, we calculated that tax as a percent of the MSP in the year when we had the cost sheet and applied that rate to the 2017–18 MSP to estimate the tax in 2017–18.

The only exception is the commission to societies. From 2013, Government of India started compensating states for commission to society not as a fixed percentage of the MSP but at ₹31.25 per quintal of grain procured.[14] So we follow the same principle in our estimation.

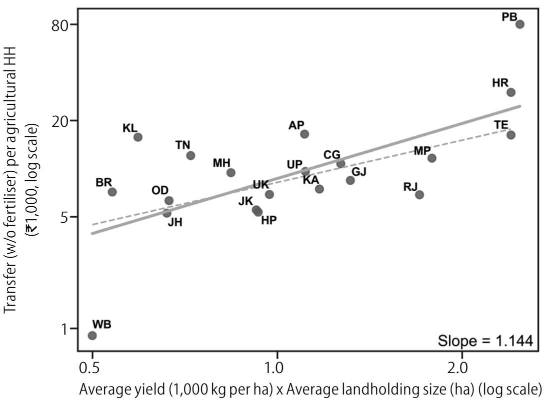
(iv) Interest cost: The study used the G-SEC 10-year bond rate equal to 6.73% (an average between 13 February 2017 and 13 February 2022). The interest cost is equal to the interest cost on the value of the surplus stock at the state level. Since surplus stock data is only available at the national level, we distributed it across states in the proportion of procurement at the state level. This is an approximation. If a state procures more but also uses more for its PDS, it would contribute less of an excess stock than our estimates. The interest cost was calculated for 2018, 2019, and 2020 and then averaged.

(v) Fertiliser subsidy: The total fertiliser subsidy for urea and the NBS scheme was obtained from the budget for 2018–19 and 2019–20. We distributed this across states in proportion to actual consumption of urea, DAP, MOP, and complex fertilisers. The final subsidy value is an average over the two years.

(vi) PM-KISAN: This is the actual statewise disbursement of funds for financial year 2020–21. The number for farmers receiving the transfers in each four-month period was obtained from pmkisan.gov.in and multiplied by ₹2,000 for each instalment.

Figure A1: Subsidies and Agricultural Income

(per agricultural household)



The dotted line represents the line of best fit without Punjab to illustrate that the positive relationship is not just driven by Punjab.

Appendix Table: Detailed Statewise Scheme-wise Subsidies

State	(MSP-P*) x Q	Procurement-related Taxes and Fees	Interest Cost on Excess Stocks	Loss 50% Waste of Excess Stocks	Urea Subisdy	NBS Subsidy	PM-KISAN	Agri HH	GCA	Total Fertiliser Subsidy	Total Central Exp 1 (Output Subsidy)	Total Central Exp 2 (Waste of Excess Stock)	Total per Agri HH 1	Total per Agri HH 2
A	B	C	D	F	G	H	I	J	L	M	B+C+D+I+M	F+C+D+I+M		
	Crore	Crore	Crore	Crore	Crore	Crore	Crore	₹00	₹000 ha	Crore	Crore	Crore	₹/HH	₹/HH
Punjab	3,740	5,661	1,195	8,880	4,643	949	1,177	14,671	7,872	5,593	17,366	22,506	1,18,372	1,53,405
Haryana	1,828	2,142	606	4,500	3,278	753	1,152	19,062	6,510	4,031	9,758	12,431	51,192	65,212
Telangana	1,169	604	333	2,477	2,243	1,698	2,213	26,557	4,893	3,941	8,261	9,569	31,107	36,033
Andhra Pradesh	954	1,153	239	1,777	2,160	1,957	2,863	31,587	7,532	4,117	9,327	10,150	29,528	32,133
Odisha	853	512	216	1,606	861	643	1,458	48,153	4,803	1,504	4,543	5,296	9,434	10,999
Uttar Pradesh	1,128	1,131	402	2,990	10,578	3,230	14,431	1,77,583	26,203	13,808	30,900	32,762	17,400	18,449
Chhattisgarh	834	445	206	1,527	1,203	601	1,724	29,851	5,640	1,804	5,011	5,705	16,787	19,110
Madhya Pradesh	1,725	965	667	4,954	4,314	1,986	5,115	72,738	23,714	6,301	14,772	18,001	20,308	24,748
West Bengal	352	169	84	627	2,023	1,746	0	66,890	9,881	3,769	4,373	4,649	6,538	6,951
Bihar	212	115	81	600	3,442	1,417	4,601	70,123	7,572	4,859	9,868	10,256	14,073	14,626
Maharashtra	162	26	46	342	3,564	3,377	6,658	72,941	23,467	6,940	13,833	14,014	18,965	19,212
Tamil Nadu	324	114	99	739	1,403	1,204	2,584	25,825	6,074	2,608	5,728	6,143	22,182	23,788
Uttarakhand	111	18	32	241	395	84	519	9,844	1,083	480	1,160	1,290	11,780	13,103
Kerala	87	91	22	162	167	272	2,111	14,667	2,628	439	2,750	2,825	18,752	19,262
Jharkhand	39	24	13	94	364	140	1,404	28,080	1,812	503	1,983	2,038	7,063	7,260
Rajasthan	258	150	106	790	3,356	975	4,320	70,378	25,014	4,331	9,166	9,698	13,025	13,780
Karnataka	9	0	4	26	2,172	2,488	3,159	42,501	12,009	4,659	7,831	7,848	18,425	18,465
Gujarat	9	3	7	49	3,462	1,372	3,380	40,239	11,522	4,834	8,232	8,272	20,458	20,557
Jammu and Kashmir	2	0	1	5	176	79	691	12,557	1,159	256	949	952	7,556	7,582
Himachal Pradesh	0.3	0	0	3	109	46	549	10,280	933	155	705	707	6,859	6,882
Sum of above	13,795	13,323	4,359	32,390	49,913	25,017	60,110	8,84,527	1,90,321	74,931	1,66,518	1,85,112	18,826	20,928
All India	13,795	13,323	4,370	32,473	50,635	25,230	61,926	9,30,935	1,97,054	75,865	1,69,278	1,87,956	18,184	20,190