

# FROM ANNADATA TO FARMPRENEUR

Playbook for Reforming Indian Agriculture



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# From Annadata to Farmpreneur:

## Playbook for Reforming Indian Agriculture

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## Executive Summary

Government and society in India have historically viewed farming merely as a means of achieving food security for the country. Farmers are considered *annadatas*, instead of legitimate entrepreneurs engaged in the business of agriculture. The liberalisation of 1991 did not touch the agriculture sector. The infamous license, permit and quota raj continues to hamper farmers from pursuing a dignified livelihood. A multitude of schemes have been initiated to help the farmers, but not all have been successful. Instead of applying first-principles to resolving problems facing the industry, governments at central and state levels have largely pursued short term vote-winning methods.

Despite decades of policy interventions, a majority of Indian farmers have not seen their incomes rise, nor have they been able to increase farm productivity. Farmers with small or marginal holdings, who make up around two-thirds of all farmers, find themselves prey to indebtedness, a lack of choice in inputs, and underdeveloped warehousing and processing facilities. In each agricultural cycle we witness a host of farmer agitations, leading to further band-aid solutions in the form of top-up subsidies, loan waivers or new farmer assistance schemes.

Successive governments have tried to support farmers by subsidising the price of agricultural inputs and offering high support prices for the outputs. The Union and states provide a host of subsidies for seeds, fertilizers, electricity, water, farm machinery and research and development to reduce input prices. As part of the measures to increase the price of the output, Union and state governments procure food grains at minimum support prices for multiple crops. Simultaneously, policy makers walk the tightrope of protecting consumers from high prices, and providing food security through inexpensive grains to over two-thirds of the Indian population.

This playbook argues that the gamut of policy interventions have served to adversely affect farmers. So much so, that India is one of the few countries where farmers receive a negative subsidy and suffer a net loss. These policies ignore that the distress in the sector largely results from farmers having little or no control over anything in agriculture except perhaps tilling the soil. Indian agricultural policies provide a cautionary tale of messing with the market process. The government interferes with decisions at every step of the production and sale process. Policies tell farmers what to grow, how to grow it, how much to invest, how much to store, when, where and who to sell to, and how much to sell for. Pulled together, the policy framework has destroyed the signalling role played by prices, and no one is better off for it.

The Finance Minister, in her first budget speech in July 2019, expanded the scope of ease of doing business to include rural enterprises. She also opined that “ease of doing business and ease of living both should apply to farmers too.” Unfortunately, the political and social discourse in India still does not see the farmer as an entrepreneur who takes risks, analyses the market and engages in the production, marketing and selling of agricultural produce.

Against this background, the playbook:

- imagines agriculture as an enterprise, and casts agriculturists as “farmpreneurs”;
- distils key learnings from richer studies and reports; and
- outlines the full-spectrum of reforms needed in the sector.

Much of the policy approach has been hostage to the myth of the “first transaction”, a notion as archaic as it is dangerous. The playbook’s approach has been to side step this notion, and to treat the sector as any other. Farmers are not isolated actors, but entrepreneurs who engage in the market process, absorbing cues from prices and the actions of their competitors and buyers, making business decisions on what seeds to use and arbitrage potential in storing for later sale. This playbook lists eight distinct reforms needed in the agriculture sector so our farmpreneurs may be free to make and sell. These reforms cut across myopic land regulations, the regressive input subsidy and control regime, and the fetters on spot, futures and credit markets. The playbook largely focusses on bad policies that need repeal or revision, less so on things the government needs to do more of.

## 1. Introduction: A Sector in Crisis

India is the second-largest producer of farm goods in the world. It is one of the top producers of wheat, rice, pulses, sugarcane and cotton; the highest producer of milk, and the second-highest producer of fruits and vegetables (Deshpande 2017). In 2019-20, India was expected to produce over 725 million tonnes of produce including 292 million tonnes of food grains (PIB 2020c).

However, all is not well in the sector. Agricultural growth has been volatile over the last fifteen years, from 5.8 per cent in 2005-06 to 0.4 per cent in 2009-10 and -0.2 per cent in 2014-15 (Deshpande 2017). In 2018, the GDP deflator for agriculture turned negative for the first time in many years (Ghosh 2018). In other words, farmers are earning less than what they were earning before. In 2016, 59% of the country's total workforce was directly or indirectly dependent on agriculture, but the sector only contributed 23% of GDP (Food and Agricultural Organisation 2019). Besides, agricultural production is resource intensive, cereal centric and regionally biased. The resource intensive ways of Indian agriculture have raised sustainability concerns, including stress on water resources, desertification and land degradation in the country (Food and Agricultural Organisation 2019).

### Indian farmers are too many, too poor, and debt trapped

Indian agriculture is in crisis, and has been for a while. One of every three Indian farmers is below the poverty line<sup>1</sup>. About 85% of farmers hold less than two hectares of land (PIB 2019b). A majority of Indian farmers struggle to scale-up their operations and increase their income. Per the National Institute of Rural Development, the agriculture sector in India can support the livelihoods of only 140 million people (Srikant 2017). There are about 145 million landless labourers who are not even covered under the definition of a farmer in most states. They do not receive support from the government and survive on seasonal employment on farms.

In 2013, the National Sample Survey Office estimated the average monthly income of a farmer household at a mere Rs. 6,426. Of this, Rs 6,223 was for monthly consumption. In 2018, National Bank for Agriculture and Rural Bank Development (NABARD) estimated an income of Rs 8,931 for an average agricultural household in 2015-16. At the same time, the average debt per agricultural household was Rs. 1,07,083. Falling rural consumption also substantiates this story of low incomes and indebtedness. Media reports in 2019 citing an unreleased survey by the National Statistical Office state that spending in rural India went down by 8.8 per cent in real terms between July 2017 and June 2018.

Niti Aayog estimated it took 22 years (1993 to 2015) for farmers' income to double (Dalwai 2017). As debt rises, so do the costs of operating a farm, perpetuating the cycle. This debt trap can cripple smaller farms. In other words, the average Indian farmer is desperately poor and increasingly indebted.

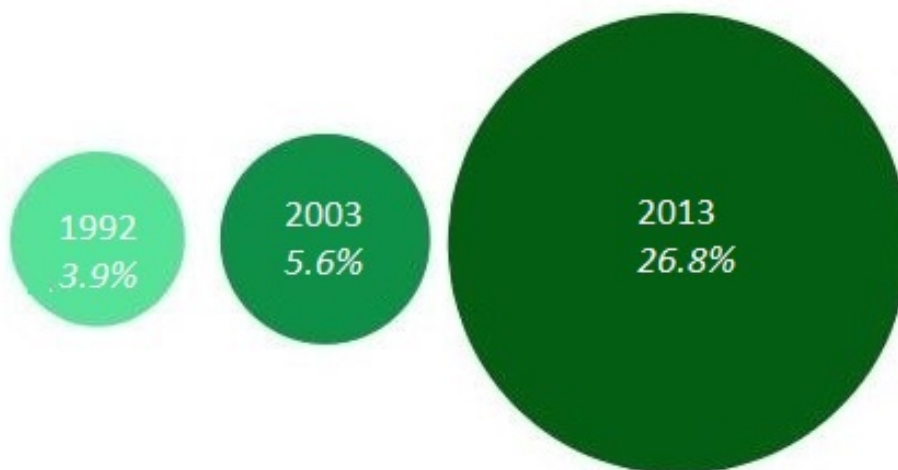


Figure 1: Mean Debt to Asset Ratio Among Farmer Households (%)  
Adapted from: NSS 1992, 2003, 2013

1. Rs 328 per person per month for the rural areas and Rs 454 for the urban areas

## Productivity and market returns are low, input costs are high, market returns are absent

Farms in India yield less produce per hectare than competitor economies. The green revolution of the 1960s helped solve the early productivity issues that plagued Indian agriculture. This trend has not continued. The agricultural value added per worker rose from \$769 in 1991 to only \$1,621 in 2017. This is a 110.7% increase in 26 years. In the same time frame, the global increase was 151%, from \$1,411 to \$3,542 (The World Bank 2020). Take for example India's yield rates for rice and wheat—tonnes produced per hectare. In the case of rice, productivity is approximately half of China and a third of the United States (Deshpande 2017). In 2019, India's yield per hectare for wheat was 3.2 tonnes and for rice was 2.6 tonnes compared to the EU's 5.5 tonnes and 4.0 tonnes (OECD 2020).

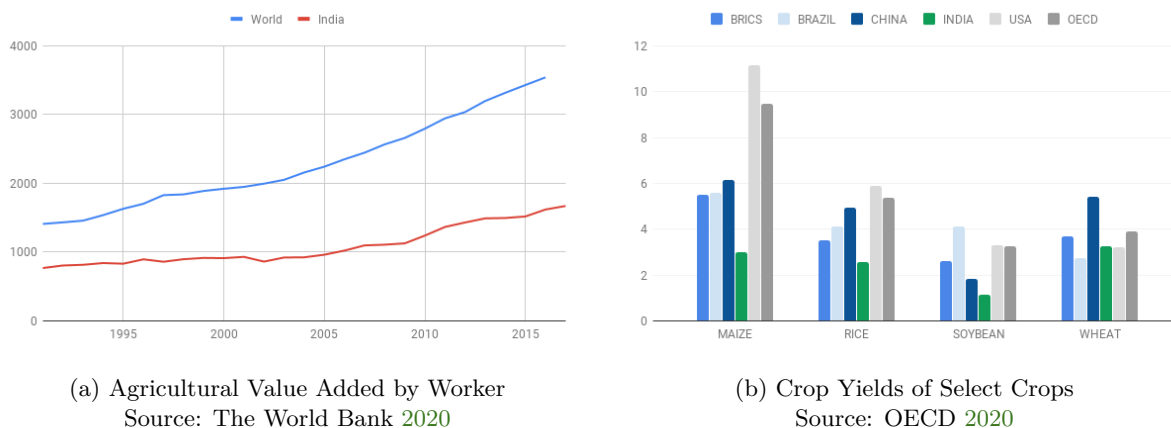


Figure 2: Productivity Indicators for Indian Agriculture

The average farm size in India, 1.08ha, makes it unprofitable for most farmers to invest in mechanisation (Ministry of Agriculture & Farmers Welfare 2019a). Indian farmers also face relatively high and increasing input costs. The Dalwai Committee (2017) report found that while the value farmers could extract per hectare went up, the increase in input costs went up more, at least until 2010. As seen in figure 3a, the total cost of cultivation (Rs per quintal), has increased sharply from 2006 to 2017 in West Bengal, Uttar Pradesh, Punjab, Orissa and Andhra Pradesh (MoAFW 2015).

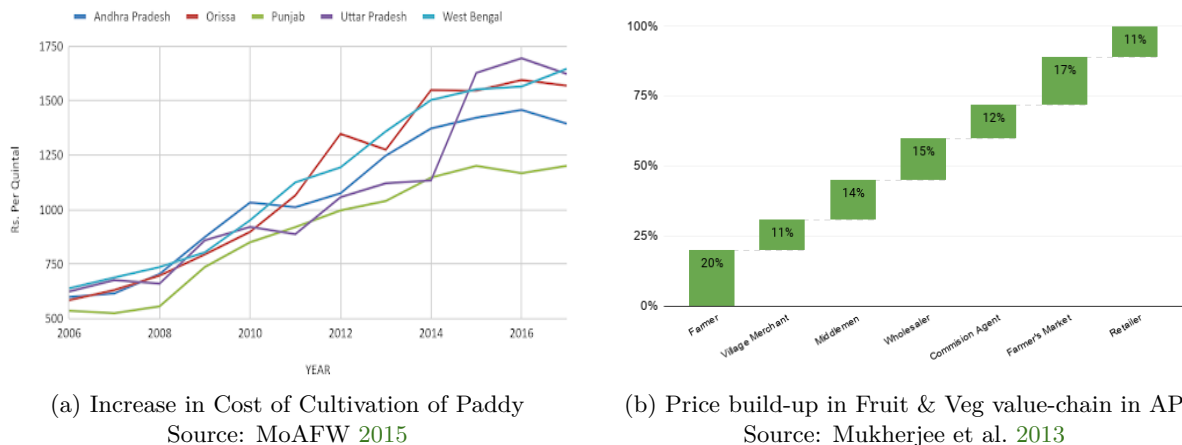


Figure 3: Cost and Returns Indicators for Indian Agriculture

An RBI (2019) survey of agricultural mandis across 16 states finds that farmers receive 28 to 78 percent of the final retail price across 14 food items. While 62% of farmers believe they were able to cover costs of production, the proportion drops for perishable items. There are costs at all levels. Farmers pay mandi and packing charges, traders pay for shop, labor, transportation and storage and retailers pay taxes, rent, and labor costs.

## Government is everywhere, governance is nowhere

The formulation and implementation of agricultural policies in India involves several ministries, departments, boards and institutions at both the Union and the State levels (Arora 2013). The Constitution lists agriculture and related subjects under the purview of the state governments. While Government of India's Ministry of Agriculture and Farmers' Welfare (MAFW) remains the primary driver of national agriculture policy, at least 12 other ministries at the central level hold responsibilities for aspects of agriculture and food policy (OECD 2018). Government of India provides policy direction while the implementation and administration of these policies and guidelines are under the purview of the state governments. The allocation of funds for policy implementation is largely done by the central government. In addition, over 15 separate central and state public sector enterprises, special interest marketing federations and commodity boards are part of the decision chain.

Government of India and state governments use missions, *yojanas* and schemes to control capital, credit, inputs, price, technology, market access, and domestic and international trade in agriculture. These programs are executive policy measures without the backing of legislation. These executive policy measures allow the ruling governments to retain full control over agriculture and allow political interests to supersede farmer interests and consumer interests.

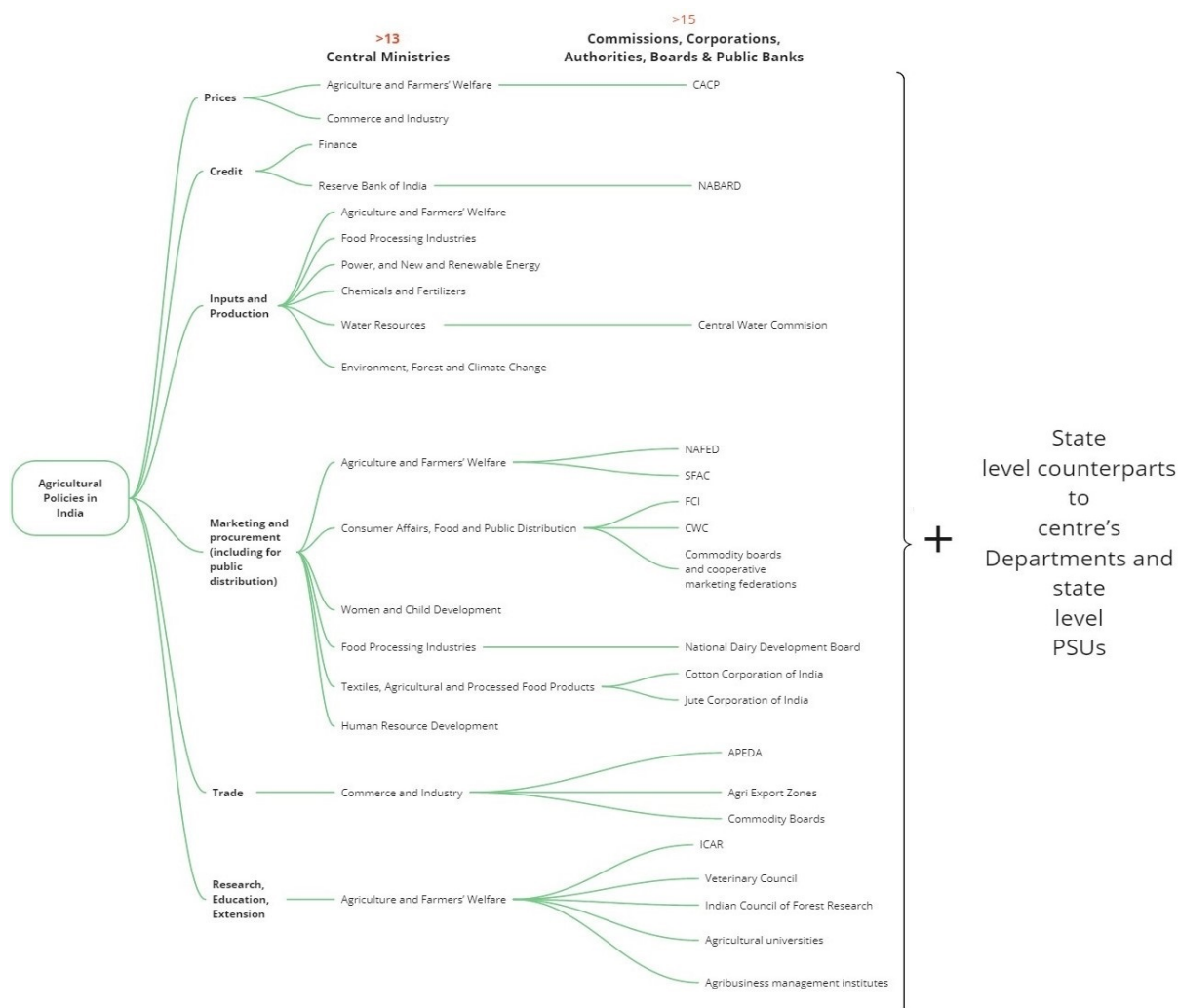


Figure 4: Agricultural Policies and Ministries involved<sup>2</sup>  
Source: OECD 2018 and Arora 2013

2. ICAR= Indian Council of Agricultural Research, APEDA = Agricultural and Processed Food Products Export Development Authority, CWC = Central Warehousing Corporation, FCI = Food Corporation of India, SFAC = Small Farmers' Agri-Business Consortium, NAFED = National Agricultural Cooperative Marketing Federation of India, NABARD = National Bank for Agriculture & Rural Development, CACP = Commission for Agricultural Costs & Prices.



## 2. Diagnosis: A cautionary tale of messing with markets

Farmers in India are not treated as economic actors. They are not allowed to participate in markets the way producers and sellers of other goods do. Every aspect of the production, distribution and sale process faces some form of controls. Farmers are held hostage to the concept of “first transaction” where the first sale of produce by the farmer can only be sold in government mandis.

This is a policy hangover from a time where food security was a serious concern and farmer exploitation was commonplace. After independence, the Indian government continued with measures put in place during World War 2. The controls consisted of the movement from open market sale of crops to rationing in almost all the states (Amritanshu 2017). Post-independence policy tilted in favour of keeping food prices low and check inflation (Lipton 1975). Government responses to check price rise in agriculture and food commodities have included export bans, price setting, and restrictions on transportation, storage, and inter-state movement of farm produce.



Figure 5: Agricultural Policy Objectives in India  
Source: OECD 2018, p.153

### Interference with what to grow, and what risk to take

By 1965, the government had established the Food Corporation of India (FCI) and the Commission for Agricultural Costs and Prices (CACP). The Commission determined the prices of major agricultural commodities which would be purchased by the Food Corporation of India and would be redistributed by the public distribution system. The Union and state governments procure large quantities of wheat, rice, and a few other commodities. FCI and various state civil supply corporations are responsible for the procurement of grains. The procured grains are used as buffer stock and for the public distribution system wherein the government sells wheat and rice to the poor at subsidised prices.

The Central government dictates the prices on the recommendations of CACP. Individual states are also allowed to add a bonus to the MSP, something most states do on a regular basis. Per the terms of reference of the Commission in 2009, MSPs were to be decided based on demand and supply, cost of production, domestic and international price trends, inter-crop price parity, terms of trade between agriculture and non-agriculture, a minimum of 50 per cent as the margin over the cost of production and likely implications on buyers. Politics, of course, plays an instrumental role in determining the MSPs. Governments generally announce an increase in the MSPs before the elections (Bhardwaj and Jadhav 2018).

The centre and states procure these grains from farmers, through the Decentralised Procurement Scheme or the Central Procurement Scheme. Farmers are guaranteed a Minimum Support Price for this grain, and are incentivised to grow them. This MSP is far higher than the price paid by those covered under the National Food Security Act. The MSP of paddy, for instance, was just over Rs 18.15 per kg for 2019-2020 (MoAFW 2020b). This paddy needs to be milled and converted to rice before it is sold through the PDS at Rs 2 per kg.

The artificially determined price and guaranteed offer of purchase by the government at MSP distorts sowing decisions, resulting in over production of select resource intensive and cereal centric crops. Besides this, crop-directed subsidies also interfere with the functioning of markets. For example, the government often offers export and interest subsidies to sugarcane farmers.

## Interference with what inputs to use and how much

India also subsidises sowing inputs including fertilizers, electricity, water, seeds, machinery, insurance, and credit. These subsidies, combined with the setting of minimum support prices for some commodities, means that price discovery on the spot market is almost impossible. Cost cutting as a business concept becomes near irrelevant. The distortion of sowing decisions also has also spun off other unintended consequences. Input subsidies mask the real costs of production and have distorted crop choices and farming patterns. While subsidies help cushion farmers' income, they do not resolve the structural issues of low agricultural productivity and small landholdings. The challenges of excess labour cannot be solved with agrarian input subsidies (Ramaswami 2019).

The agriculture industry accounts for approximately 20% of all electricity consumption (MOSPI 2018). Many states provide electricity free of cost to farmers and a vast majority of agricultural connections are not metered. The decision to provide free or low-cost electricity has, unsurprisingly, affected farmer behaviour. Much of the electricity is used to pump groundwater, which accounts for over 60% of irrigation (MOSPI 2017). FAO estimates that India is the largest user of groundwater in the world, using 251 billion cubic meters, over double what China uses. Separately, Economic Survey (2016) estimates that around 40% of all the urea sold domestically, ends up smuggled for sale to farmers in Bangladesh and Nepal. This has created shortages in urea and rationing, and over half the farmers buy urea at prices that are higher than the retail price in the black market.

## Interference with how much to store, and when, where and who to sell to

The Essential Commodities Act, 1955 was enacted in the aftermath of World War II, partition and food shortages, to protect consumers from exploitation by “unscrupulous” traders (Chikermane 2018). The Act enables the government to impose limits on stocks of goods considered essential, and to restrict their physical movement (The Telegraph 2019). The Act empowers the government to control the production, transportation, supply, distribution, and pricing of commodities deemed “essential”. The Act severely limits private investment in agriculture and the establishment of agro-based industries. As the government may declare a commodity essential at any time and pass multiple orders for its control, entrepreneurs consider it too risky to invest in storage, processing and transportation facilities.

This apart, for many years, most states in India had a government-regulated monopoly for the first point of sale for agricultural commodities through agriculture marketing laws. The laws that established mandis are generally referred to as APMC (Agricultural Produce Marketing Committee) Acts. In these regulated mandis, farmers were forced to sell their produce at less than market prices. These practices impeded price realisation for farmers or creation of a national market for commodities. For instance, in 2010 the gap between the average wholesale price and the average retail price of onions was 132% in Bangalore (Kumar 2016). A FICCI report found that in Andhra Pradesh only 20% of the consumer price in the fruits and vegetables market is passed on to the farmer (Mukherjee et al. 2013).

Besides domestic market constraints, the government continues to impose export bans and open up imports at short notice, largely to check prices of politically sensitive crops (onions, potatoes, pulses, etc). The Economic Survey (2014) noted:

*Generally an ad hoc trade policy has been followed for agricultural commodities, more often as a knee-jerk reaction to the domestic price situation, which puts the domestic as well as international market under great uncertainty, and the farmer, being at the bottom of the pyramid, is severely impacted. It also leads to erosion of confidence in India being a trustworthy supplier in the international market. A stable and long-term trade policy with respect to agricultural products is essential for increasing productivity.*

Finally, the agriculture futures market, which theoretically should serve as a medium of information on price movement has not served farmers as well as hoped. The futures market for agriculture in India, much like the rest of agriculture, is plagued by regulatory burdens. The regulatory framework around the futures market is not only cumbersome but also unpredictable, particularly for commodities that are considered essential (Gulati, Chatterjee, and Hussain 2017).

### 3. Reform: Dismantling the License-Control-Subsidy Raj

The 1991 deregulation of the economy focused on the industrial sector; even in the decades hence, agricultural policy has shied away from liberalising cultivation, processing and sale of agricultural commodities. Irrespective of droughts or floods, price rise or crash, debt burden or farmers' suicide, government control over agriculture has more or less remained unrelenting (Mitra 2018). Farmers continue to struggle and survive the deeply controlled regulatory environment. They continue to face controls which are unimaginable in any other sector of the economy.

In the following section, we look at eight areas—land, domestic spot markets, future markets, price interventions, input subsidies, credit markets, international trade, and technology in seeds—where government intervention is either unsuccessful or absent. In each we outline the specific regulations that constrain agriculture as an enterprise and present key recommendations.

#### 1 Lift restrictions on Land Ownership, Sale, Tenancy and Use

The prime capital asset of a farmer—land—is heavily regulated in India. A combination of laws, enacted at the state level, restrict the sale, purchase, use, and lease of land. Introduced in the early years of the formation of the republic, these encumbrances aimed to: 1) protect the farmers from exploitation, especially by the zamindars or landlords, and 2) increase efficiency and equity in the agrarian economy (NITI Aayog 2016). However, the restrictions have not achieved the desired results. In the following paragraphs, we briefly discuss these laws and their impact. The section also highlights the shortcomings in maintenance of agricultural land records and how it affects the land market.

**There are restrictions on how much land can be owned by an individual or a family.**

In the 1950s and 60s, state governments across India introduced laws restricting the size of agricultural land that can be owned by an individual or a family (Pal, Roy Chowdhury, and Saher 2019). The ceilings vary across states based on factors such as the kind of crop sown (cash or food), soil fertility (dry or wet), and the size of family. For example, the ceiling in Andhra Pradesh ranges from 10 acres to 54 acres. In Rajasthan, the ceiling is 18 acres for land holdings that can grow two crops a year but can go up to 175 acres for holdings that fall in desert areas.

**These have resulted in land fragmentation and reduced income potential.**

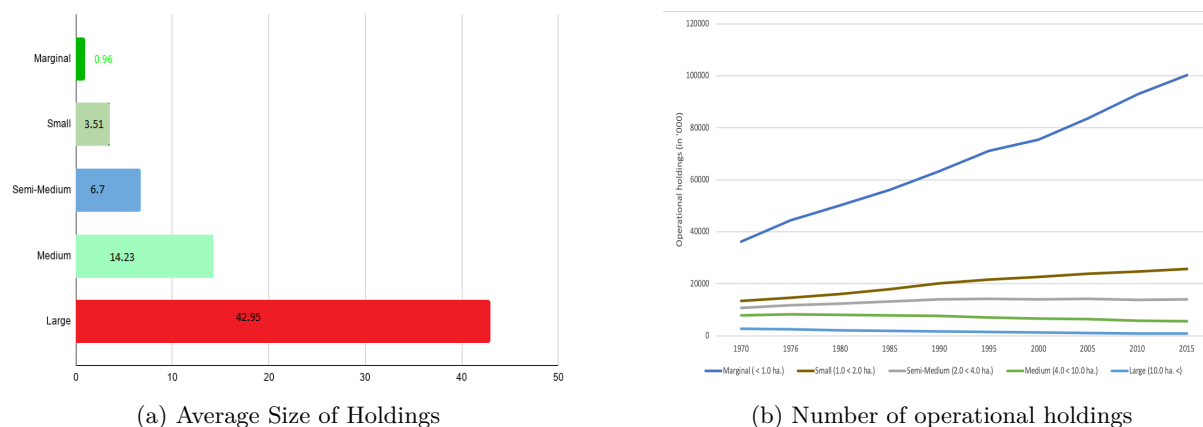


Figure 6: Cost and Returns Indicators for Indian Agriculture  
Source: MoAFW 2019a

As a result of these caps on land size, agricultural land in India is highly fragmented and dominated by small & marginal holdings. In 2015-16, the average size of holding was 1.08 hectare/2.7 acres with Kerala at the bottom of the ladder at 0.18 hectare/0.5 acres and Nagaland at the top 5.06 hectare/12.5 acres (PIB 2019b). Compare this with the average holding size of 67 hectares in Latin America, 27 hectares in Europe and 121 hectares in North America. Besides, the average holding size has steadily reduced since the 1970s. The Agricultural Survey of 2015-16 revealed a decline of .07 hectare/.17 acres between 2010-11 and 2015-16 (MoAFW 2019a).

While a small holding in itself may not hold back productivity, when combined with market controls, inefficient supply chains, and poor R&D investment, land ceiling laws that keep the land size artificially small have had a negative effect on productivity (Ghatak and Roy 2007). Several researchers have documented the negative impact of extant land ceiling laws on agricultural productivity and farmer income. Pal, Sahar and Chowdhury (2019) find that land fragmentation increases the transactions cost of acquiring land and consequently reduces the pace of capital investment and industrialisation. In addition, the extremely small land holdings do not generate sufficient income for the farm owners in India (IDFC Foundation 2013).

### **There are restrictions on the sale, purchase, and renting of agricultural land.**

Selling of farmland is subject to several restrictions in India. While the state laws differ in details, they typically limit who can buy land (Indian resident, individual or company, agriculturist, tribe members) and the accepted mode of transfer (gift vs. sale) (Hanstad, Neilsen, and Brown 2004). Even the definition of an agriculturist is restrictive in many states. For example, the Himachal Pradesh Tenancy and Land Reforms Act, 1972 defines an “agriculturist” as a landowner who cultivates land personally. Besides these conditions, there are also process related restrictions with some states such as Maharashtra requiring government approval before sale of agricultural land (Hassan 2016).

Regulations on leasing of agricultural land—introduced with the intent to protect poor tenants from exploitation by land owners—either ban or restrict tenancy in most states. Regulation is of four types (Hanstad, Neilsen, and Brown 2004). First, some states like Kerala and Jammu and Kashmir have a blanket ban on agricultural tenancy. Second, states such as Himachal Pradesh and Uttar Pradesh ban tenancy but exclude some population segments like widows and minors from this ban. A third category is states like West Bengal and Gujarat that have not banned tenancy but have laws that grant owner-like rights to tenants. Finally, a few states have adopted a mix of regulations: some to limit tenancy and others to modify the nature of tenancy by imposing rent ceilings.

### **These restrictions depress the price of agricultural land, affecting the ability to exit or draw investments.**

Such limitations trap landowners. First, prohibitions on the sale of farm land assume that all land transactions are exploitative in nature and are likely to work against the landowner; this assumption ignores the agnostic nature of market transactions. Second, restrictions on purchase and sale of land leads to depression of land price; land that cannot be sold with ease is of lower value than the land that can be. Third, it ties the owner to its land, even those who seek an exit, making it difficult for one to liquidate their asset or to diversify income sources (Hanstad, Neilsen, and Brown 2004). Finally, the absence of a rental market for agricultural land render tenants without legal protection and limit investment into farms. In 2016, just over 10% of agricultural land was under tenancy in India, ranging from 0.15% in Jammu Kashmir and 30% in Andhra Pradesh. While 4% of farmers have benefited from “owner or owner-like rights”, others are either left without access to land or access informally, exacerbating exploitation, and inability to secure institutional credit or state support (NITI Aayog 2016).

### **Besides land use restrictions do not allow farmers to make the most of their lands.**

Most states restrict the use of agricultural land only to agricultural purposes. For example, Section 42 of the Maharashtra Land Revenue Code, 1966 declares “no land used for agriculture shall be used for any non-agricultural purposes.” Conversion of land for other uses is allowed but with a complicated regime that requires multiple approvals. Farmers cannot use their land for starting a business; they must do farming, even if better alternatives are available.

### **Finally, the land market in India suffers from poorly maintained land records.**

One needs multiple documents to establish ownership. These documents are not available easily as the records are not digital, incomplete and held manually. Record-keeping involves different departments and interdepartmental communication is poor. While the government has undertaken surveys to update land records, the efforts haven’t culminated; a partial digitised dataset without accurate and latest information is unreliable and doesn’t serve the purpose (Mishra and Suhag 2017).

The absence of land records has wide-ranging implications: it slows property sales and consequently infrastructural development; land disputes have clogged the judiciary with more than half of all

pending cases relating to land; and it hinders credit growth as land without clear titles cannot be used as mortgage (Mishra and Suhag 2017).

### **Reform to lift the many restrictions is underway but at a sluggish pace.**

Since agriculture is a state subject, states will need to take the lead on relaxing or removing these restrictions. In 2016, researchers at NITI Aayog devised an Agricultural Marketing and Farmer Friendly Reforms Index with land leasing reforms as one component (Chand and Singh 2016). According to the report, 21 States had bans on land leasing, and 10 states allowed leasing partially.

Restrictions on the right to property of farmers are hard to overcome, particularly as most of these have been placed under Schedule IX of the Constitution. Schedule IX was designed as a constitutional device with which the legislature could take away the right to property of a certain group of people without judicial review. In the absence of judicial review, the change must come from state legislatures, but states have been reluctant to admit the import of these reforms.

### **Some states have initiated reforms to relax land ceiling laws (Outlook India 2011).**

- Eg. Maharashtra amended section 63 and 63-1A of Maharashtra Tenancy and Agricultural Lands Act 1948, which eased the restrictions on buying and selling of land with the aim of boosting industrialisation (Dave and Motta 2017). The state also amended the Maharashtra Agriculture Lands (Ceiling on Holding) Act, 1961, lifting all restrictions on holding more than 54 acres of land in 2019 (Suryawanshi 2019).
- Eg. Uttarakhand. Similar provisions have been made in Uttarakhand's Land Ceiling Act, 2003, which previously allowed people to buy only up to 250 sq. meters of agricultural land. The ceiling was increased to 12.5 acres through an Amendment passed in 2011
- Eg. Karnataka amended the section 63 of the Karnataka Land Reforms Act, 1961 and doubled the amount of land an individual and a family can hold. It also amended section 80 to allow sale of agricultural land to non-agriculturists.

The research on how these reforms have impacted farmers is scant. As land ceilings are lifted, farmers on the margin may become landless and are likely to exit the agricultural market to find employment elsewhere. In that case, other sectors must be sufficiently buoyant to absorb the additional labor force.

### **Restrictions on the sale of agricultural land only to agriculturists must be removed, and the government must redouble efforts to identify and protect property titles.**

Inability to liquidate the prime asset traps families in low-productivity activities. A survey of 18 states and over 5000 respondents reveals that only 5% farmers sold their land in the preceding 5 years. Over 60% of farmers said they would move out of agriculture if better income opportunities were available in the city (CSDS-Lokniti 2018). States must let go of the restrictions on the use of land. If farmers want to quit farming and use the land for another purpose, perhaps establishing small enterprises, they must be allowed to do so.

In March 2016, NITI Aayog proposed a Model Land Leasing Act (NITI Aayog 2016). The proposed act suggests legalisation of tenancy. It allows for conditions of lease to be defined mutually by the tenants and landlords. However, state governments have shown limited interest; as of 2018, three states had shown interest (The Hindu Business Line 2018). At the time of writing this report, Uttarakhand appears to have finalised a policy that will allow any institution, company, firm or self-help group, to lease upto 30 acres of agricultural land for 30 years (Outlook India 2011).

An alternative to adoption of the Model Land Leasing Act is to lift restrictions on leasing and allow laws such as the Transfer of Property Act, 1882 and the Indian Contract Act, 1872 to govern agricultural land.

A functional land market cannot be established as long as buyers and sellers do not have conclusive records of ownership protected by the legal system. State governments need to prioritise completion of record digitisation, including information on transfer of ownership, to ensure that records reflect timely and accurate information on land ownership.

## 2 Liberalise Domestic Spot Commodity Markets

**Historically, in most states, farmers were not permitted to sell products outside of government run mandis.**

The sale of agricultural commodities in India was, until very recently, heavily regulated through the APMC Acts. Enacted by most state governments in the 1950s and 60s, the Act created a government monopoly over farm produce and hindered price discovery. The concentration of the power to purchase with the commissioning agents and traders resulted in cartelisation and collaborative pricing (NABARD 2018b).

Mandi committees became a source of political power resisting any attempts at reform. On this issue, the Economic Survey of India, 2014-15 points:

*There is a perception that the positions in the market committee (at the state level) and the market board – which supervises the market committee – are occupied by the politically influential. They enjoy a cosy relationship with the licensed commission agents who wield power by exercising monopoly power within the notified area, at times by forming cartels. The resistance to reforming APMCs is perceived to be emanating from these factors.*

**While Mandi charges increased the transaction costs on the sale of farm produce significantly, the quality of services was not up to par.**

Mandi committees imposed multiple fees and charges on different stakeholders. Buyers paid a market fee, and the commissioning agents—mediating between buyers and farmers—paid a licensing fee. All service providers, including the warehousing agents and loading agents, also paid a fee. Besides these, there were other costs such as the commission charged by commissioning agents. The commission charge in particular is high as it is not calculated on the profit but the sales revenue. The combination of these rates (taxes/interest charges/levies) imposed costs ranging from 3% in West Bengal to 19.5% in Andhra Pradesh as estimated in the Economic Survey 2015.

Despite charging fees, agricultural mandis lack modern amenities and have been criticised for their poor infrastructure. For example, in most mandis, weighing is manual and facilities to store and refrigerate food are limited or absent. Farmers have to wait in long queues for extended periods of time to receive payment. Consequently, post-harvest losses are mounting. The losses in the agriculture, horticulture and livestock sector went up from Rs. 62,875 crore during 2005-06 to Rs. 91,787 crore during 2012-13 (NABARD 2018b).

**For long, many argued for removal of the restrictions imposed by APMC to improve market density and access for farmers.**

Evidence suggests that access to more sales channels benefits farmers. An RBI Bulletin also estimated that a majority of farmers and traders perceived de-notification of products from APMCs, which allowed farmers to sell outside these mandis, as a positive move (Bhoi et al. 2019).

There is a fear that lifting of these restrictions on the sale of farm products will lead to price volatility in absence of mediation by the commission agents, especially in the short run when new channels haven't developed. For example, there is some evidence of price crash in Mumbai immediately after vegetables were delisted (Jha 2016). In contrast, a study of vegetable prices in Delhi between 1 June and 26 September 2014 shows that delisting of vegetables worked in farmers' favour by increasing their share in the final price (Bhat et al. 2015). However, the period of study is too short to draw any conclusive evidence.

**The Union Government has made some attempts at reform. But uptake from states has been limited.**

The Union government, aware of the issues with the APMCs, had proposed a model APMC Act in 2003. Despite a decade of pursuing, most state governments did not implement these reforms. The reforms introduced were “patchy, sporadic and cosmetic” (MoAFW 2017). In 2017, the central government, once again introduced the Model Agricultural Produce and Livestock Marketing (Promotion and Facilitation) Act (or, APLM) with the following highlights:

1. **Deregulation of fruits and vegetables:** limit enforcement of rules to government mandis;
2. **Private markets/mandi:** allow establishment of private market yards/wholesale market yards;
3. **Single trading license:** introduce a single license in the entire State/ UT;
4. **Single point levy of market fees** and prohibition on a second charge in any form;
5. **Warehouses deemed as markets:** allow the government to notify any warehouse/silos/cold storage or other such place with infrastructure and facilities, as a market;
6. **Direct marketing:** allow the issuance of direct marketing licenses, allowing direct purchase of produce by processors/exporters/bulk buyers outside government or private market yards; and
7. **Electronic trading:** enable traders to register, auction, bill, book, negotiate, and exchange information electronically across one national market.

We tracked the adoption of the reforms suggested by the the Model APLM Act. As Table 1 indicates, there have been piecemeal reforms: some state have allowed private market yards to operate, some have facilitated single licensing for all trading activities within the regulated markets, and others have put a single-point levy of market fees.

However, a few challenges remain.

1. While the Model APML Act 2017 allowed private markets, it continued a tradition of licensing. If adopted as is by states, the Director may, according to Section 10, issue licenses for private yards subject to “reasonable conditions” and a fee. There are also licenses to be issued for e-trading, direct marketing, and wholesale markets.
2. Even where adopted, legislative reform was not followed by action on the ground. For example, while UP and Gujarat allow for issuance of unified trading licenses, less than 1% of licenses in the state are unified (Mishra 2019).
3. In some places, permissive reforms were blunted by additional conditions. Maharashtra allowed private markets to function but attached conditions : minimum of 10 acres land; license fee of Rs. 50,000; bank guarantee of Rs. 20 lakh and infrastructure investment of at least Rs. 2 crore (NABARD 2018b).

### **The Farmers’ Produce Trade and Commerce (Promotion and Facilitation) Ordinance, 2020 is a ray of hope.**

In the wake of Covid-19, centre and states began to relax conditions for sale of farm produce. On June 5, 2020, the Central government, through an ordinance, allowed individuals, with a PAN card, or cooperatives to buy directly from farmers. This frees up intra- and inter-state trade, reduces complexity and is likely to foster development of natural markets. While the ordinance is a welcome move, it remains to be seen if Parliament will enact it into law. There is resistance and fear among all: farmers, traders, commission agents. In addition to freeing private trade, the government may have to work to undo the deeply entrenched web of political relations between stakeholders.

Success hinges on states’ ability to reform institutions, incentivise agents, and advance infrastructure. Karnataka has been at the forefront of agricultural reform. Research on the state highlights that there are three parts to successful reform (Aggarwal, Jain, and Narayanan 2016): legislative reform to enable and encourage e-trading, incentivising agents to adapt to changes, and developing physical and financial payments infrastructure.

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2. In districts with municipal corporations

Table 1: Status of Deregulation as of May 2020

	Deregulation of Fruits and Vegetables	Private Mandis	Single Trading License	Single Point Levy of Market Fee	Warehouses as Deemed Markets	Direct Marketing	E-Trading
AR	✓	✓	✓	✓	✓	✓	✓
AP	✓	✓	✓	✓	✓	✓	✓
AS	✓	✓	NA	NA	✗	✓	NA
CG	✓	NA	✓	✓	✗	✓	✓
GA	✗	✓	✓	✓	✓	✓	✓
GJ	✓	✓	✓	✓	✓	✓	✓
HR	✓	✗	✓	✗	✗	NA	✓
HP	✓	✓	✓	✓	✗	✓	✓
JH	✓	✓	✓	✓	✓	✓	✓
KA	✓	✓	✗	✓	✓	✓	✓
MP	✓	✓	✓	✓	✓	✓	✓
MH	✓	✓	✓	✓	✗	✓	✓
ML	✓	✗	NA	NA	✗	NA	NA
MZ	✗	✓	✓	✓	✗	✓	✓
NL	✓	✓	✓	✓	✗	✓	✓
OR	✓	✓	✓	✓	✓	✓	NA
PB	✓	✓	✓	✓	✗	✓	NA
RJ	✓	✓	✓	✓	✗	✓	✓
SK	✗	✓	✓	✓	✗	✓	✓
TN	✗	✗	✓	✓	✗	NA	NA
TS	✗	✓	✓	✓	✓	✓	✓
TR	✗	✓	NA	NA	✗	✓	NA
UP	✗	✓	✓	✓	✗	NA	✓
UK	✗	✓	✗	✓	✗	✓	✓
WB	✓	✓	✓	✓	✗	NA	✗
CH	✗	✓	NA	✓	✗	NA	NA
DL	✓	✗	✗	✓	✗	NA	NA
J&K	✗	✗	NA	✓	✗	✓	NA
PY	NA	NA	NA	NA	NA	NA	NA



### 3 Encourage Commodity Futures Markets

A futures market is essential to the liberalisation of agriculture. Currently, the government intervenes at every step of the supply chain, including production, pricing, procurement, marketing, storage, and distribution. The attempts to adjust the market manually to stabilise prices have not been successful. In a recent study, Burman et al, argue that government intervention in domestic and international markets has led to price volatility—as opposed to the intended objective of price stabilisation (2018). Instead, the intended objectives may be better met with the futures market. It can perform many functions. For example, it helps farmers to base sowing decisions, not on past prices but the future price. It allows them to lock-in a price for their product and also enables arbitrageurs to maintain “optimal” stocks by buying today and selling tomorrow and vice versa (Financial Express 1998).



Figure 7: Upswings and downswings in WPI food inflation  
Adapted from: Ministry of Commerce and Industry 2020

#### **Futures market helps buyers and sellers manage risk.**

The agricultural sector is susceptible to price volatility. Demand and supply are inelastic, i.e., even if there is a drop in the demand or price, it takes farmers at least a few months to adjust to these changes. Futures markets can help buyers and sellers alleviate these risks to an extent. For example, a farmer growing rice can control the chances of a bad monsoon that could hurt his harvest by fixing the price several months in advance. A company manufacturing coffee drinks can also protect against the risk of a price rise by purchasing coffee months in advance of delivery.

Currently, farmers’ share in the overall agri-futures trading in India is negligible (Chatterjee, Gulati, and Hussain 2018). The National Commodity and Derivative Exchange (NCDEX)—the largest agri-commodity exchange in the country—has struggled to get farmers to trade in futures markets for an array of reasons. The small landholdings and lack of trust and training in such markets hinders participation from the farmers’ side.

#### **Many distrust the futures market and underestimate its role in price discovery.**

Some worry that it may lead to non-transparent pricing, spot market volatility and a rise in spot prices (consequently, inflation). Regardless of these challenges, Velmurugan and Irshad VK find that futures markets are advantageous for disseminating information, enabling price discovery and risk management; this contributes to development of the underlying commodity market (Palaniappan Shanmugam and Irshad VK 2017).

Separately, a study by Agarwal and Thomas (2014) finds that these markets have a positive impact on price discovery, i.e., the futures prices relate positively with spot market prices. However, the markets did not provide a cushion against price volatility. For the futures market to do so effectively, there needs to be a regulatory environment that encourages and supports arbitration (Aggarwal, Jain, and Thomas 2014).

### **Arbitrary interference in the market has stifled the potential of these markets.**

A 2017 paper by ICRIER argued that one of the reasons for the poor performance of the agricultural futures market is the lack of a stable policy environment. Frequent and unpredictable changes in stocking rules, sudden suspensions of goods from the market and high margins for the trade of “sensitive” commodities have dissuaded would-be speculators from participating. For products like potatoes, the margin was as high as 100% in August 2014 (Gulati, Chatterjee, and Hussain 2017). Policymakers seem to be unwilling to relinquish control over these sensitive goods, as a result of which the price information from the futures market is misleading at best. Gulati et al. found that, since 2013, trading was suspended at least 15 times.

Agarwal and Thomas also highlight the various regulatory bottlenecks created by intervention by the central government, state governments and financial sector regulators (2014). Together they “micromanage” the market deterring trust of organisations in the market. Besides, there are also problems relating to the settlement. To quote from the paper, “uncertainty of settlement in the form of quantity and quality of commodities delivered at exchange-registered warehouses or about the warehouse receipts issued, create uncertainty in the link between the futures and spot price”.

### **Farmer Producer Organisations have an essential role to play.**

Where farmers find themselves unable to participate in the futures market directly, Farmer-Producer organisations (FPOs) or any such aggregators can play a role. While there have been attempts to increase their participation, so far, their participation has been low. Between April 2016 and May 2018, only 0.004% of all futures transactions on NCDEX were routed through FPOs. Of the 80 FPOs that traded on the market, 80% only traded once (Chatterjee, Raghunathan, and Gulati 2019). The low participation is due to the strong ties between farmers and intermediaries, lack of FPO capacity, and absence of infrastructure. Besides these, there are KYC norms, high membership fee and margin charges that act as deterrents to entry (Dey, Gandhi, and Debnath 2019).

### **The Indian government needs to move away from a welfare state approach and focus on developing a sound regulatory framework.**

A reliable futures market will encourage farmers to rely on the futures market for price discovery rather than the state prescribed MSP. As Agarwal and Thomas point out, the government should halt all bans imposed by federal and state agencies, focus on designing a regulatory framework that fosters consumer protection and reduces the possibility of abuse (Aggarwal, Jain, and Thomas 2014). It is also critical to put an end to market-distorting activities such as state procurement, restrictions on private storage, and use of import-export controls. If necessary, the international market can be used for the purchase of insufficient commodities or distribution in case of excesses.

### **There are lessons for India to learn from China.**

India and China are similar in terms of their dominance of small and marginal farmers, which gives us an opportunity to analyse and compare their approach. The futures market in 2016 traded over 1.6 billion contracts around the world. China accounted for a majority of those contracts, 69%, India, on the other hand, accounted for only 2% of the market.

One of the aspects that differentiates it from India’s futures market is that state trading enterprises, like the China National Cereals, Oils and Foodstuffs Corporation (COFCO), are also part of the futures market. In addition, all agri-contracts in China are delivery based, which reduces volatility. These policies play a role in instilling confidence, and reducing regulator incentive to have arbitrary rule changes (Gulati, Chatterjee, and Hussain 2017).

Since 2005, China has launched schemes and campaigns such as “thousand villages and tens of thousands of farmers” to encourage farmers to join the futures market (The Hindu Business Line 2019). Drawing from China’s experience, ICRIER highlights that the state may play an important role in supporting farmer participation through farmer training and education (Chatterjee, Gulati, and Hussain 2018). A higher participation in the commodity market is likely to reduce the number of commodities covered under the MSP scheme. In India, in particular, awareness to revise cultural notions that equate trading in futures as gambling and training farmers on the fundamentals of a futures market is essential to increase direct farmer participation.

## 4 Lift Barriers to International Trade

In the 1950s, India was a food deficit country and had limited foreign exchange capital to import food products. Food security became a priority. In the mid 1960s the experience with US PL 480 aid strengthened India's resolve to become self-sufficient. In the decades that followed, India imposed several restrictions on domestic trade and restricted the use of foreign exchange to import of agricultural inputs. Even high-demand commodities such as edible oil were not imported.

The Economic Survey 2019-20 highlights the governments' mercantilist approach to free trade, i.e., an overriding concern with trade deficit and self sufficiency. Such an approach goes against the principles of basic trade theory where the emphasis is not on trade deficit but on the advantages that accrue from an efficient allocation of resources arising from free trade. The frequent interference in international trade through export and import controls and the prioritisation of domestic consumption needs over free trade hinders the development of stable trade relations.

The 2019 Trade Barrier Index ranks a total of 86 countries on their use of trade barriers. India is at the bottom of the Index, with a poor record of using tariff restrictions. Where the median score across 86 countries for tariffs is 5.17 (with a standard deviation of 1.83), Non-Tariff Measures 1.87, Services Restrictions 4.38, and Facilitation is 4.57, India's scores are 6.01, 8.11, 3.61, 7.17, and 5.16 respectively. The report tags India as 'the worst offender of trade liberalism' (2019). The United States Department of Agriculture argues that *in the quest for self-sufficiency for many basic food commodities, India's trade policy has focused on export controls and a highly restrictive import regime...Such protectionist policies keep India's per capita agricultural imports artificially low.*

### Generous use of import controls and frequent change in import policies.

India's tariff rates on agricultural products are among the highest in the world ranging from 100-300 per cent. with an average WTO-bound rate of 113.5 percent, and average applied rates of 32.8 per cent. Using the large difference between bound and applied rates, the government makes frequent changes to import tariffs structure to cushion domestic producers.

For example, in 2017 India raised import duties from zero percent to 60 percent on chickpeas, 50 percent on peas, 40 percent on large chickpeas, and 30 percent on lentils. Further, in the 2018 budget, the Union government increased tariffs on 52 separate line items, including fruit juices (from 30 percent to 35 percent), and edible vegetable oils (from 20 percent to 35 percent) (USITA 2020).

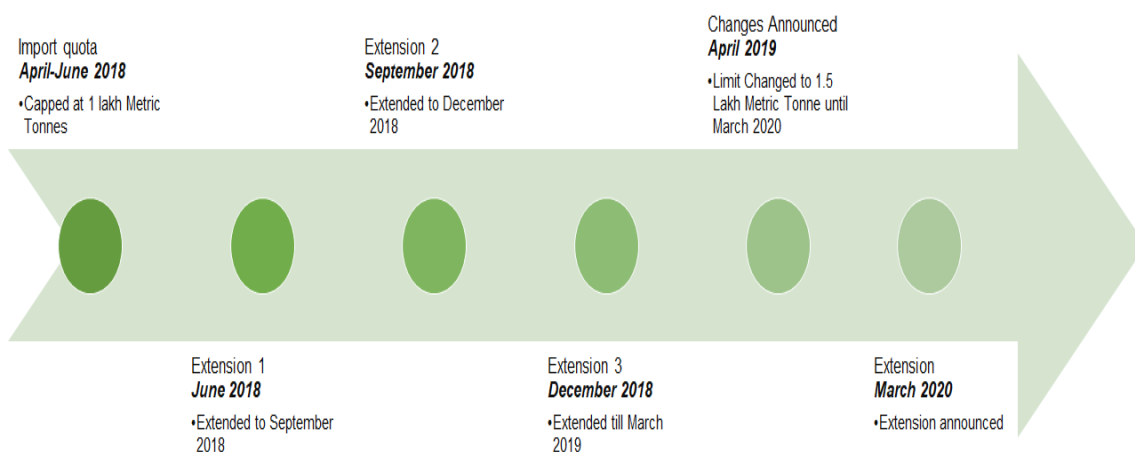


Figure 8: Import Quotas for Yellow Peas  
Source: MoCI Notifications

### Despite high production, India remains a small contributor to global agricultural trade.

Even though India is one of the largest producers of agriculture for a number of commodities, exports account for only 2% of global agriculture trade. Almost all of India's agricultural exports are low value-added goods. Most of the export basket is raw and semi-processed commodities. Only 15% of India's exported commodities, by value, is value-added or high value goods (MoCI 2019).

There are several reasons for this: large domestic consumption, quality of products not matching exporting countries' requirements, and an unstable trade policy. The small land holdings and the absence of post harvest infrastructure inhibit farmers from meeting the global sanitary and phytosanitary standards.

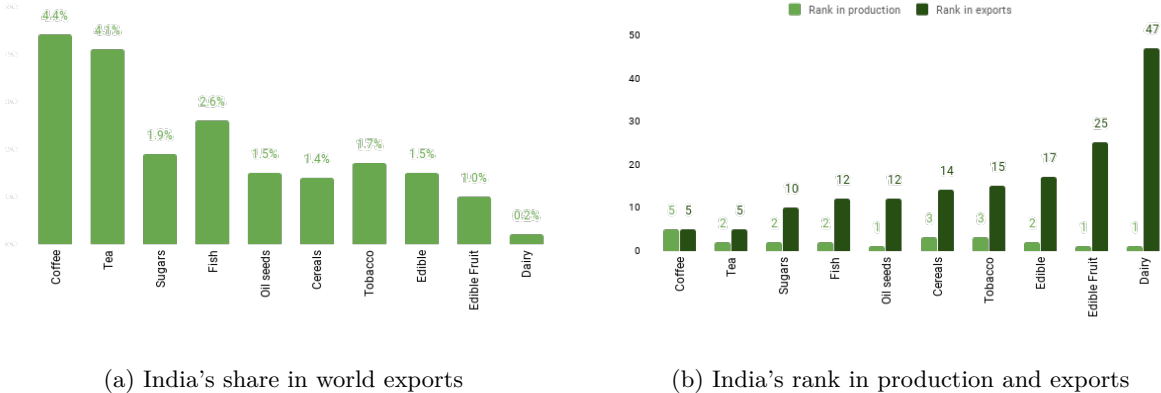


Figure 9: India's Export Situation  
Source: Dalwai 2017

**Ad-hoc and protectionist policy shrinks India's contribution to global trade.**

Protectionist trade policies, and the nature of the exports, are the key reasons for the low contribution to international trade. India has often and arbitrarily resorted to different ways to restrict exports through quotas, duties, bans, and minimum export price.

As of June 2017, export of several products remained prohibited. This includes peas, lentils, moong, urad, broad beans, pigeon peas, and vegetable oils such as soybean, ground nut, crude, palm, and sunflower oil among others. Table 2 highlights the trends in export bans between 2004-05 to 2013-14. The authors found the 15 studied commodities were in a non-tradable zone (indicated by X) 17% of the time.

A deep consumer bias and fears of food shortage drive India's export policy. Criticising this, the latest Agriculture Export Policy highlights how the government utilises "trade policy as an instrument to attain short term goals of taming inflation". The policy also notes how such practices need constant manual adjustment and create tension and uncertainty in the market.

**The new Agriculture Export Policy envisages a stable trade regime.**

There are indications that at least the export environment may be changing. In 2018, the government adopted the Agriculture Export Policy hoping to double the value of agriculture exports to USD 60 billion (4.3 lakh crore) by 2022 and then to USD 100 billion. Acknowledging that a "clear and predictable export policy" has been a long-standing demand from the sector, the revised policy commits to minimising ad-hoc regulatory changes and action only after scrutiny by a high-level committee. The policy aims to do three things: increase investment in infrastructure to assist exports - by focusing on ports and critical road and rail infrastructure; empowers state departments to identify the various bottlenecks to exports; and reform the APMC act.

**However, primary agricultural products will continue to be subjected to restrictions.**

While the policy removes processed and organic products from the ambit of export restrictions, it still leaves out many commodities, especially "primary agricultural products." India's three largest export commodities are rice, marine products, and meat. These three categories alone make up over half of the Indian exports.

Table 2: Trade status of select commodities, 2004-05 to 2013-14

	Cotton	Sugar-refined	Buffalo meat	SMP	Onion	Banana	Alphonso	Potato	Wheat	Rice	Maize	Gram	Soy-bean	GN	R&M
2004-05	✓	M	✓	✓	✓	✓	M	✓	✗	✓	✗	✗	✗	✓	✓
2005-06	✓	M	✓	✓	✓	✓	✓	✓	✗	✓	✗	✗	✗	✓	✓
2006-07	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✗	✓	✓
2007-08	✓	M	✓	✓	✓	✓	M	✗	✗	✓	✓	✓	✓	✓	✓
2008-09	✗	M	✓	✗	✓	✓	M	✓	✓	✓	✗	✓	✗	✓	✓
2009-10	✓	M	✓	M	✓	✓	✓	✓	✗	✓	✗	✓	M	✓	✓
2010-11	✓	✗	✓	M	✓	✓	M	✓	M	✓	✓	✓	✓	✓	✓
2011-12	✓	✓	✓	M	✓	✓	✗	✓	✓	✓	✓	✓	✗	✓	✓
2012-13	✓	M	✓	M	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗	✓
2013-14	✓	M	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	M	✓	✓

✓ = exportable ✗ = non-tradable M = import-competing (price of imported goods is lower than domestic price)

GN = Groundnut, R&M = Rapeseed and Mustard seed, and SMP = Skimmed Milk Powder.

Source: Saini and Kozicka 2014

## 5 End Price Fixing and Rationalise Government Procurement

The Indian government's policy on pricing of agricultural commodities has two contrary objectives: ensuring remunerative prices for producers while guarding against inflation. To achieve this, the government of India through the Food Corporation of India (FCI) procures food grains from farmers at MSPs, distributes food grains to vulnerable sections of the population and maintains a buffer.

The FCI was established in 1965 to provide back-up in times of shortage. However, it has now transformed into the largest buyer and hoarder of the food supply in India. Essentially, an example of how a “calamity-oriented policy” got turned into an “instrument of delivering equitable development” if the government's laws and actions do not keep up with times (Saini and Kozicka 2014).

### **The government, through the Food Corporation of India, procures crops at MSP.**

The Commission of Agricultural Costs and Prices, established in 1965, advises on the prices of 23 crops, including seven kinds of cereal, five pulses, seven oilseeds, and four commercial crops. The Commission arrives at an amount through an analysis of demand and supply, production costs, price trends in the national and international market, inter-crop price parity, and impact on consumers. To this end, the Commission interviews state governments and some national organisations in addition to state visits to understand farmers' point of view. The Cabinet Committee on Economic Affairs (CCEA) takes the final call on the support price. The Commission's terms of reference are wide-ranging. They include objectives ranging from “need to provide an incentive to the producer for adopting improved technology and for developing a production pattern” to “rational utilisation of land, water and other production resources.”

FCI is responsible for the procurement of crops at MSP. The system is not uniform across states; it is less active in eastern regions. There is also variation in the goods purchased—the government only acts as a buyer-of-last resort for commodities like wheat, rice and cotton (OECD 2018).

### **Minimum Support Price distorts the market by skewing production based on government procurement and not market demand.**

The pricing system, introduced in the post-independence era, is a part of a larger package to drive agricultural production and tackle food supply shortage (Chand 2018). However, it has now outlived its utility and is contributing to many economic inefficiencies.

First, it artificially alters supply. The government's think tank, Niti Aayog, highlights how the procurement practices have distorted cropping patterns with farmers choosing to sow grains based not on demand and supply but state procurement. According to government's own estimates, for grains like rice and wheat, Government of India purchases 40-50% of the market surplus, making it the single largest procurer of these grains. The proportion of market surplus obtained goes up to 80-90% in some states like Punjab and Haryana. This has led to excessive sowing of rice, wheat and sugarcane and has shifted farmers away from sowing pulses and coarse grains. The government's behaviour has created a monopoly, crowding out private sales.

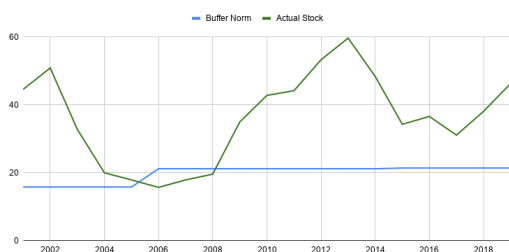


Figure 10: Buffer norm vs. actual stock of rice and wheat, in MT, 2001-19  
Source: Gulati and Saini 2015

Second, it leads to price distortions. The MSP has not worked as a minimum price but instead has become the maximum price farmers receive

Finally, the system of procurement and distribution is expensive, with FCI's procurement costs going up to 25-30% of the price paid to farmers. Similarly, distribution costs are between 20-25% of the farmgate prices (Chand 2018). For example, Economic Survey 2019 estimates that in 2015-16, FCI incurred a staggering Rs 730 per quintal to offer an MSP of Rs. 1467.

The government is a massive hoarder of grains. The stocks have consistently exceeded official norms. These trends have crowded out private investment, in effect nationalising the food market in India (Saini and Kozicka 2014). The persistently high buffer stocks have

contributed to the fiscal deficit. On June 1 2020, the FCI had accumulated grain stocks of 97 million metric tonnes(mmt). Of this, at least 50 mmt is "excess stock". This could raise Rs 1,00,000 crore and assist with reducing the fiscal deficit (Gulati 2020). Ashok Gulati writes that while selling these excess stocks at current market rates would "not recover its full economic cost, as they are much higher than the prevailing market prices," however, maintaining these stocks mean the FCI incurs "unnecessary interest costs of about Rs 8,000-10,000 crore per annum" (Gulati 2020).

### **The distribution through fair price shops is inefficient and ineffective.**

The operation of the fair price shops system is riddled with several inefficiencies. In the states with the highest proportion of poor, leakage is higher, and consumption needs are met mainly through the open market. Saini and Kozicka (Saini and Kozicka 2014, p.32) note that "Of the states with more than 30 percent of the population below the poverty line, less than 20 per cent of total consumption was met through PDS."

### **The Essential Commodities Act has discouraged private investment in warehousing.**

The Essential Commodities Act 1955 allows the government to control the production and distribution of select goods, including food items such as oils, pulses and grains. The Act empowers the state to impose upper limits on stock-holding and price of notified goods (Bhayani and Jha 2014). While the number of commodities has gone down considerably, the government has powers to notify any product under the Act when it deems necessary (Food and Agricultural Organisation 2005). The Economic Survey 2019-20 argues that "The frequent and unpredictable imposition of blanket stock limits on commodities under the Essential Commodities Act (ECA) neither brings down prices nor reduces price volatility. However, such intervention does enable opportunities for rent-seeking and harassment. For instance, imposition of stock limits on dal in 2006-Q3, sugar in 2009- Q1 and onions in September 2019 spiked up the volatility of the wholesale and retail prices instead of smoothening them".

Such wide-ranging powers to impose stock limits, often used arbitrarily, dissuade private players from investing in storage and warehousing. Several organisations, including Niti Aayog and Food and Agriculture Organisation of the United Nations, have suggested removing agricultural commodities from the purview of the Act (Sharma 2017). The deregulation will promote private investment, increase market efficiency and reduce post-harvest losses (Food and Agricultural Organisation 2005).

### **If support is deemed necessary, the government must adopt less distortionary measures.**

Surveys show that farmers view procurement at MSP as beneficial and would like the support to be continued (Bhoi et al. 2019). If farmer support is deemed necessary, farmers relief should be such that it does not affect cropping patterns. For instance, in 2017, Niti Aayog proposed limiting procurement to select crops. For the rest, farmers are to be supported based on a "Price Deficiency Payment System" to make up the difference between MSP and market price, transferred directly to their bank accounts (2017).

### **Learnings from China—from "minimum support price procurement program" to "producer compensation system".**

In the last decade, at a time of high international prices, China introduced the "minimum support price procurement programme" to incentivize the production of commodities such as rice, wheat, corn and soybean. However, the rise in the support price led to—for the first time in China's history—a reversal of domestic prices vis-a-vis international rates. The price of domestically produced grains (corn, in specific) surpassed that of the imported grains. Fuelled by the high support prices, farmers increased the sales of corn to the government as it became more profitable. As a result, the government's stock of corn grew by 400% from 40 mt in 2007 to 200 mt in 2016, making it unsustainable for the government to continue the procurement. In 2016, the state adopted a policy of direct payments, i.e., the "producer compensation system." Within a year, distortions were reversed: domestic prices became lower than the import prices; imports fell, and local production of corn reduced. Given the situation in India, with the FCI's stock consistently exceeding the norms, adopting a similar policy may work better (Chand 2018).

## 6 Move from Inputs Subsidies to Direct Transfers

The government of India subsidises a whole range of inputs—fertilizers, electricity, and water, seeds and bank credit—to promote agricultural production. Multiple factors drive government action, including political interests. In writing, however, two contradictory objectives permeate: to support farmers but also to provide affordable food for consumption.

**Fertilizers, electricity and water are the key subsidised inputs.**

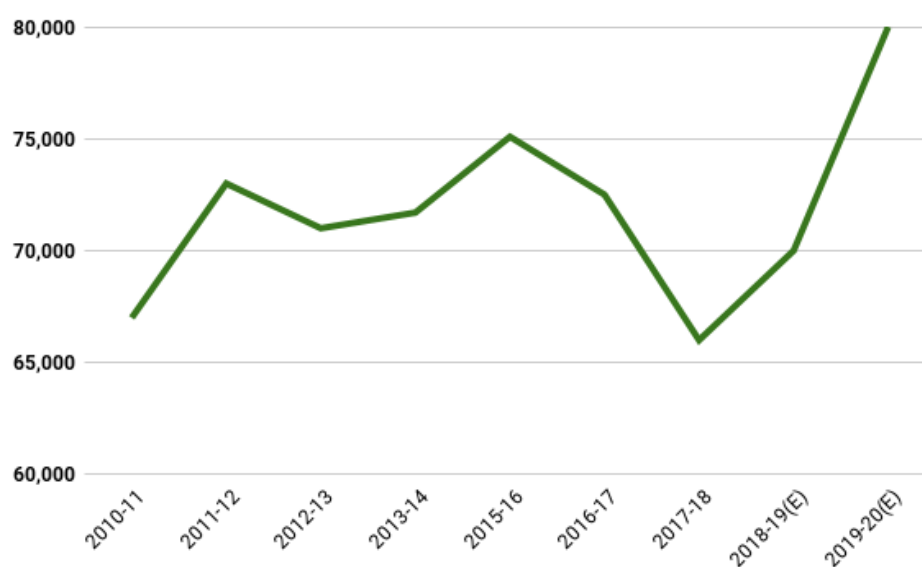


Figure 11: Central Subsidy on Fertilizers in Crores

Adapted from: Gulati and Banerjee 2015 and Ministry of Chemicals and Fertilizers 2020

The government, through subsidies to urea manufacturers, allows farmers access to fertilizers at a low cost. Electricity, on the other hand, is supplied directly to farmers at an amount lower than production cost. Similar to power, water is also provided at a discounted price. While the farmers increasingly rely on groundwater, the government continues to invest in infrastructure such as canals and dams to provide surface water. Besides these three, the government also offers seeds, pesticides, diesel and irrigation machinery at a discount.

**The subsidisation of inputs has imposed high budgetary costs.**

Latest estimates of India's expenditure on subsidising inputs, including credit, show that the spend reached Rs 235.5 billion. Fertilizer subsidies, on the rise in recent years, account for almost one-third of this expenditure (Ramaswami 2019). Power accounts for over 38%. Calculations by the Finance Commission of India highlight that these subsidies account for 20% of farmer income.

In 2007, India's expenditure on subsidies as a proportion of agricultural output was 9.6%—higher than Brazil, Russia, and China (Grossman and Carlson 2011). Research on economy-wide analysis of input subsidies in Indian agriculture, dating as early as 1995, argued that subsidies have outlived their aim and have become unsustainable (Sharma and Gulati 1995).

**Rich farmers are subsidised when they should not be.**

Several researchers (Sant and Dixit 1996, Howes and Murgai 2003, Monari and Mostefai 2001) have highlighted how the availability of uniform subsidies to both rich and poor farmers is counterproductive. The direct (inputs, fertilizers, credit, insurance) and indirect subsidies (price support) are accessible to all and regressive in nature, benefitting the wealthier farmers more than the poor. Loan waivers and subsidisation of farm equipment such as farm pumps have also been criticised on similar grounds.



### **The net effect of price support and budgetary payments is negative.**

At face value, the government has offered generous subsidies to farmers. However, the restrictions on exports, price distortions, and crop choice distortions may have offset any gains to farmers. In 2001, a Task Force on Agriculture headed by Sharad Joshi found that farmers were provided with a negative subsidy of Rs. 3,00,000 crore from 1980 to 2000 due to various government interventions and limits on access to international markets. (Joshi 2015). The research claimed that the figure of Rs. 3,00,000 crore was underestimated as it included only the difference between the domestic and international prices of farm produce and did not account for the financial consequences of a lot of government interventions in the functioning of the agriculture markets.

A 2018 study by the Organisation for Economic Cooperation and Development found that while in most countries the support to agriculture producers is positive, in India it is the opposite as the government often sets the support prices for the crops below the international prices resulting in an overall negative subsidy to farmers (OECD 2018). The OECD study considered the price for 19 major crops for multiple years and discovered that farmers were negatively subsidised for all of them. Expressed as a share of gross farm receipts, the support to farmers averaged -3.5 per cent in 2000-02 and -6.2 per cent in 2014-16 (OECD 2018). The net negative effect is a combination of budgetary payments, composed primarily of input subsidies, and market support price.

An *Economist* article (The Economist 2018) also points out how although India spends around \$30bn a year on direct aid to agriculture, it deprives farmers of \$40bn. The difference is explained by the gap in international and domestic prices for crops. Besides, in trying to achieve the twin objectives of affordable food for its population and income for its farmers, the country ends up transferring 25% of farm incomes to consumers.

### **Several reports suggest that direct transfers to farmers will resolve some of the challenges created by current transfer mechanisms.**

Direct Benefit Transfer (DBT) is a policy intervention that could be more effective than the current subsidy regime. DBTs are more cost-effective, with less leakage and fewer middlemen (Bathla, Joshi, Kumar, et al. 2020). Transfer of fertilizer subsidy directly to farmers' bank accounts has likely reduced overuse of fertilizers and stopped divergence of urea illegally to other sectors. However, success in this is conditional on the quality of land records and status of aadhaar connectivity (Ramaswami 2019).

Ashok Gulati argues “[t]he provision of free electricity and the (over)exploitation of groundwater are inextricably interlinked and together shape crop choice” (Gulati, Kapur, and Bouton 2019, p.38). One reform that he suggests would reduce the depletion of ground water is ending free electricity and moving to cash transfer programmes. This is likely to curb leakages and reduce rural income inequality, since larger farmers currently obtain a much larger fraction of current subsidies (Gulati, Kapur, and Bouton 2019).

### **Telangana's Rythu Bandhu Scheme**

The Rythu Bandhu scheme is a cash transfer scheme for farmers in Telangana that started in 2018. The government of Telangana offers Rs 10,000 per ha per season, to all farmers (Chatterjee, Gulati, and Hussain 2018). It was predicted to be more inclusive and have better reach. A 2020 survey of recipients of the scheme showed that 66% of farmers preferred cash transfers over direct input subsidies (Ramesh 2020). Amongst farmers with marginal land holdings this preference was stronger, with 85% preferring cash transfers. Farmers likely preferred cash transfers because it could serve immediate agricultural needs and that the seeds and fertilizers provided by the government via inputs subsidies were of poor quality. With cash transfers, farmers are free to choose what seeds and fertilizers they buy (Ramesh 2020).

## 7 Restrain the Urge to Interfere in Credit Markets

Per NAFIS 2016, most agricultural households reported facing Crop or Livestock related distress events in the preceding year. Farmers use institutional and informal credit sources to tide through such distress events. The Indian government intervenes in the credit market primarily by subsidising interest rates and waiving agricultural debts.

### **Short-term loans dominate outstanding agricultural credit.**

Insufficient income and savings to purchase inputs at the start of the season push farmers to rely on credit. Short term loans—spanning 6-12 months—dominate agriculture-related outstanding loans. Farmers utilise these for cultivation expenditure as opposed to investing in fixed capital. The loans are subsidised through direct transfers to lending institutes, encouraging them to increase lending to farmers. The rise in short-term credit is fuelled by interest subvention schemes (RBI 2019b).

### **Interest rate discounts work against small and marginal farmers.**

The Reserve Bank of India mandates that at least 40% of net bank credit be directed towards Priority Sector Lending (Reserve Bank of India 2018), of which 18% is to be directed towards farm credit, agriculture infrastructure and ancillary activities. The government subsidises this credit to some extent; generally, the support amounts to about 2% lower interest rates. There is an additional 3% discount in case of prompt repayment, reducing the interest rate to 4% (2019).

Despite the efforts of the government to provide credit to farmers, a significant number of small and marginal farmers are not able to get any loan from institutional sources.

When the government intervenes in the agricultural credit market by fixing interest rate ceilings or by subsidising interest rates, it restrains farmers who are willing to pay a higher price for obtaining credit from formal institutes. Research by the Reserve Bank of India finds that 40% of those who borrowed from a formal institute felt constrained (Rajeev and Vani 2019). The liquidity crunch limits farmers, especially small and marginal, from investing in augmenting production capacity. This is evident in how farmers with very small land (size less than 0.01 hectare) obtained 76% of the loan from non-formal sources (Rajeev and Vani 2019).

At an all-India level, 26% of agricultural loans come from non-institutional sources. Among the institutional sources, most of the loans go to well off farmers and not to those who need credit. 83% of large farmers relied on institutional loans as opposed to only 60% of marginal farmers (Rajeev and Vani 2019). In the absence of land records and tenancy contracts, jewel loans are growing at a fast pace as formal institutes are wary of lending to small and marginal farmers.

### **The practice of waiving debt boosts defaults and avoidance of lending.**

In recent years, India has seen a re-emergence of a culture of waiving debt around election time, a phenomenon that had receded in the 1990s. The proponents of this practice argue that farmers often face “debt overhang” where any additional income, borrowed or earned, is invested in repayment of debt. A clearing of such outstanding loans relieves farmers from this trap. Several researchers have looked carefully to examine if this hypothesis holds out.

In 2008, the government offered one of the most massive debt waiver programme—accounting for 1% of the GDP, 8% of tax revenue—to 40 million households. Farmers holding land smaller than 2 hectares received full relief and those with more than 2 hectares received partial relief. This difference allowed researchers to have a counterfactual. The expectation was that the clearing of debt would induce and enable farmers to borrow from formal institutes and increase productive investment. However, even a significant stimulus such as this had no impact on agricultural productivity or investment (Kanz 2016). The share of informal borrowing increased; more among those who received full relief. Worse, those that received complete assistance were less bothered about the reputational effects of default, confirming that it is difficult to “write off loans without also writing off a culture of prudent borrowing and repayment”.

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2. About 54% households reported to have faced crop failure due to rainfall irregularities at least once in the given reference period, 28% faced problems caused due to pest infestation, etc., and a sizeable 18% and 10% respectively faced problems due to fluctuations in the market price of crops and loss of livestock due to flood and diseases, etc.

The harmful effects of the 2008 credit continued to surface in the years that followed. The proportion of new debts in districts with higher exposure to the scheme reduced and defaults among those with a good credit history increased. Besides, the bailout had no impact on economic activity (Giné and Kanz 2017). Similarly, a 2010 ordinance by the government of Andhra Pradesh banning loan recovery practices led to an increase in defaults and a drop in credit availability to farmers.

In addition, institutional credit is sustainable only if lenders are able to profile borrowers, forecast repayment and recoup lending costs. The subsidised credit and loan waiver programme precludes all three. Over the years, bankers have naturally shied away from lending to small and marginal farmers. To solve this problem, government has applied yet another bandaid solution. Since 2015, banks are mandated to earmark 8% of their lending portfolio to small farmers.

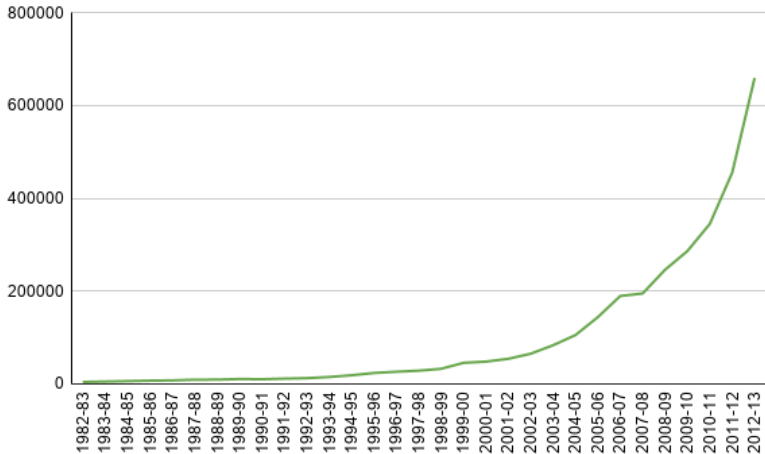


Figure 12: Total Institutional Credit for Agriculture and Allied Activities in Crores  
Adapted from: Reserve Bank of India 2019a

**Debt relief should be used sparingly.**

Mukherjee, Subramanian, and Tantri (2018) find that distressed farmers—those who filed for and received an insurance claim—in the 2008 bailout were less likely to default on loans after the program compared to non-distressed farmers (2018). The authors argue that debt relief only helps distressed farmers, for example, those affected by exogenous shocks. Otherwise, it fuels strategic defaulting, negatively impacting the credit market. The Economic Survey of India 2019-20 suggests that “a waiver can at best be an emergency medicine to be given in rare cases after a thorough diagnosis and identification of illness and not a staple diet” .

Given that interest rate subsidies mainly benefit farmers with abundant land, the interest subvention scheme should be replaced with direct benefit transfers. Instead of offering a ubiquitous discount to all farmers. This will allow the government to target subsidies to select farmers (The Indian Express 2019). Besides these, digitisation of land records is critical to ensure farmers can access credit easily.

## 8 Establish Single-Window Platform for Regulating Testing, Sale and Use of Agri-technology

The back and forth on the issuance of permissions to test and use technology in agriculture and the lack of interdepartmental coordination asks for an assessment of the regulatory framework that governs such decisions. In this section, we highlight two examples of such inconsistencies: first, the debates around the use of genetically modified seeds and second, the recent order that proposed to ban the application of 27 pesticides.

### **The use of GM seeds in India is riddled with controversy.**

Genetic modification of seeds introduces desirable traits like resistance to chemicals, pests, or environmental conditions. The modification is not done by cross-fertilisation but by introducing desirable genes in seed DNA. Some have protested in favour of using GM technology, and others against it. For instance, in 2016, Sarson Satyagraha—a civil disobedience movement against the cultivation of GM mustard—was organised in West Bengal (Sehgal 2019). Separately, farmers in states like Maharashtra and Gujarat have protested by planting GM seeds despite knowledge of its legal implications.

### **Farmers across the country have cultivated unapproved GM crops.**

Illegal GM (Ht) cotton is grown in states like Maharashtra, Telangana, Andhra Pradesh and Gujarat. In response to a Lok Sabha question, in 2019, the government reported probing of 67 cases by the police and confiscation of illegal cotton seeds worth over Rs. 102 lakh across the states mentioned above (Sehgal 2019). Supporters of GM are eager to experiment for two reasons: first, to bridge the technological gap between Indian and global crop production, and second, because it helps farmers reduce their overall cost of producing crops (Bera 2019).

Activists against GM cultivation argue that the widespread use of GM seeds, before legalisation, makes it difficult to enforce a ban, which, in turn, eventually paves the way for its regulatory approval (Bera 2019). For example, in Gujarat, in 2010, the Genetic Engineering Appraisal Committee (GEAC), the statutory body under the Ministry of Environment, Forest and Climate Change (MoEF&CC) responsible for approval of GM seeds, had ordered the government to burn illegally cultivated Bt cotton. However, the government refused to comply as the application had already spread widely.

### **Political influences are also at play in issuing approvals.**

Every GM variety has different uses and effects and has to undergo scrutiny and tests. The regulatory decisions have been influenced strongly by political considerations and not by scientific findings. The minister often overrides GEAC's resolutions; in 2010, GEAC gave clearance to the cultivation of Bt Brinjal, but the then environment minister placed an "indefinite moratorium" as there were protests throughout the state/country. Similarly, the approval of the commercial cultivation of GM mustard was withdrawn (Bera 2019). Another instance is how GEAC had recently introduced the requirement for the states to attain a No Objection Certificate (NOC) to conduct free trials since agriculture is a state subject and it would give the states a certain level of independence. Even after GEAC's approval, states have declined to issue NOCs. Such conflicts between GEAC and states hinder the building of a smooth regulatory framework for the advancement of technology (Shukla et al. 2018).

### **Government's indecisiveness affects farmers and technology developers.**

Many GM technologies are in the final stages of development, and scientists are looking to the government for a policy change and increased commercialisation. While several government institutes like GEAC, IGMORIS (Indian GMO Research Information System) and Biosafety House are working towards ensuring biosafety for a better regulatory framework, their policies overlap leading to confusion and chaos. The approval for the transgenic mustard for instance has come to a standstill. DHM-11 got clearance from GEAC in 2017, but the then environment minister sent it back to GEAC for reconsideration. GEAC ordered the developer to undertake more field tests, an activity inhibited by states reluctance to grant NOCs for field trials (Bera 2019).

### **Similar indecisiveness surrounds the government's stand on the use of pesticides.**

In May 2020, MoAFW issued a draft order proposing a ban on 27 pesticides. The ban, if implemented, will impose restrictions on the import, manufacture, sale, transportation, distribution and use of

these insecticides (MoAFW 2020a). The sudden move received strong reactions from all stakeholders including farmers, industry, and even the Ministry of Chemicals & Fertilizers (MCF). In a letter to MoAFW, MCF Secretary, argued that the listed pesticides comprised 40% of India's domestic pesticide industry. He pointed that all the pesticides listed therein were registered with the Central Insecticide Board and Registration Committee (CIB&RC) and met its requirements (The Indian Express 2020).

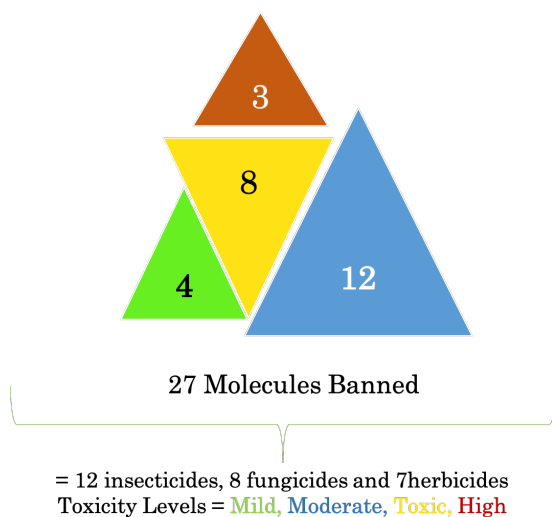


Figure 13: 2020 Ban on Fertiliser Molecules

Many have criticised the order for the quality of evidence it used and the absence of rule of law. The ban is based on the recommendations of the 2013 Anupam Verma Committee. The report of the committee is not available publicly. There have been no stakeholder consultations in arriving at the decision. Besides, the Ministry first allowed 45 days for comments and then extended it to three months (Pandey 2020). Again, on 6 July, the Ministry proposed to ban the use of Glyphosate based on recommendations from the Government of Kerala. This time the Ministry allowed for 30 days for comments, eventually extending it to 60 days. The ban has received similar backlash from stakeholders.

As an implication of the ban on manufacture, sale and distribution of the pesticides, the order would have also put a stop to the export of these pesticides. However, following representation from the pesticide industry, in a webinar, the Agricultural Minister Narendra Singh Tomar mentioned that the Ministry will allow exports of these pesticides on a case by case basis (LiveMint 2020).

Such arbitrary decision making remains a challenge in the regulation of agri-technology. Sudden bans have a negative impact on those who have already invested in a particular commodity, disincentivise private players, and also impact the users adversely. Media articles report how in absence of alternatives for some of the banned pesticides, in spite of the order confidently saying there are alternatives—their sales have spiked.

### A single window system may resolve some of the woes.

For a clear regulatory framework, it is necessary to have a single platform, whereby all private and public companies can register, access regulatory information and get approvals. These approvals should be based on evidence and must not be revoked suddenly, by any authority, without sufficient reason, or without following due procedure.

The Biotechnology Regulatory Authority of India Bill, 2013 envisages establishment of such an independent authority—the Biotechnology Regulatory Authority of India (BRAI)—for the regulation of organisms and products of modern biotechnology. The Bill was introduced in 2013 and referred to the standing committee. The Bill is likely to be reintroduced with revision—however, there is no clarity on the timeline. Once established, it will be able to create a single window for matters concerning research, transportation, import, containment, environmental release, manufacture and use of all such products (Shukla et al. 2018). The independent authority may not be limited to regulation of biotechnology but can overlook all agri-technology including the use of pesticides.

In other areas of regulatory law, where India has been slow to establish a clear regulatory framework, India has been comfortable relying on evidence from well respected regulatory bodies from other countries. For instance, the New Drugs & Clinical Trial Rules 2019 does this in the case of drug approvals. India offers waivers for local clinical trials if the drug has received approval from a regulatory body in an approved country (MoHFW 2019). There is no reason why such a policy could not be opted for in the case of biotech.

## 4. Conclusion: From Annadata to Farmpreneur

The spread of Covid-19 threatened to upend the agricultural supply chain in India. The monopoly of state mandis and the absence of other sales channels created a vacuum that made agrarian reforms not only necessary but urgent. Within the first two weeks of May 2020, we saw three states—Madhya Pradesh, Gujarat, and Uttar Pradesh—allow farmers to sell outside of APMC mandis (Haq 2020).

The Central government also used the crisis as an opportunity to introduce overdue reforms targeted at correcting long term issues. Government of India passed three landmark ordinances. These three relate to reforming governance in agriculture.

1. The government amended the 65-year-old ECA 1955. The Essential Commodities (Amendment) Ordinance, 2020 does away with the government's power to impose stock limits on farm products unless faced with “extraordinary” circumstances like war, famine, calamity or an extraordinary price rise. Processors or value chain providers are exempted from this limit. Many have raised concerns over the definition of “extraordinary” price rise—100% increase in retail price of horticultural produce; and 50% increase in the retail price of non-perishable agricultural food items. In our view, the government should take it one step further and in the next sitting of Parliament repeal the Essential Commodities Act. An Act born of a scarcity mindset has no place as we navigate the road to prosperity and plenty.
2. The Farmers' Produce Trade and Commerce (Promotion and Facilitation Ordinance), 2020, makes a sensible attempt to break the myth of the “first transaction” by the farmer. It allows individuals holding a PAN card and cooperatives to buy directly from the farmer, opening up intra and interstate commerce.
3. The Farmers (Empowerment and Protection) Agreement on Price Assurance and Farm Services Ordinance, 2020 allows farmers to enter into contracts with companies for at least one season and a maximum of five years, extendable for crops where the production cycle is longer than five years. The ordinance allows the parties to set mutually agreed terms and conditions, including price. However, it is silent on whether the price can be lower than MSP. The title of the Act though still betrays partiality to protectionism and paternalism. There is no assurance for price in a market economy. Prices are discovered by millions of buyers and sellers engaging in repeated games. In so far as the government is a large buyer, they should be willing to engage in the same game and procure grains at market prices. In some seasons, this will result in savings for the exchequer, in some seasons the sellers will reap a bonanza.

Although these changes to agricultural storage and marketing laws are desirable, we are yet to see how these play out on the ground. It has been 13 years since Bihar repealed the APMC act, but the density of markets remains low. There are contrasting views on this subject. Ashok Gulati (former chairman of the Commission for Agricultural Costs and Prices) opines that, “The private sector will come forward and will fight over it” (Gill 2020). In contrast, an NCAER paper argues for the government to introduce tax concessions and take measures to promote and strengthen Farmer Producer Organisations (FPOs) (Kannan and Pohit 2019).

While we correct fractures in the agricultural economy, it is also equally important to enable exit from agriculture and create profitable opportunities outside of it. Former RBI Governor Raghuram Rajan, and the ex-deputy chairman of Niti Aayog Arvind Panagariya, have repeatedly argued that the best reform is to move farmers out of agriculture to provide a cheaper labour force for the industry. No doubt the industrial outlook needs to be promising to absorb the labour force shifting out of agriculture. However, it is foolhardy to wait for the secondary and tertiary sectors to create jobs as a pre-condition to reforming the primary sector.

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