International Journal of Law and Society
2023; 6(1): 31-38
http://www.sciencepublishinggroup.com/j/ijls
doi: 10.11648/j.ijls.20230601.15
ISSN: 2640-1894 (Print); ISSN: 2640-1908 (Online)

The Economic Impact of COVID-19 in India and the Effect of Agricultural Farm Laws on Farm Sector Resilience

Sarthak Khanna[1, *], Shalu Darshan[2], Michael G. Tyshenko[3]

[1]Business School, University of Hong Kong, Pokfulam, Hong Kong

[2]R. Samuel McLaughlin Centre, University of Ottawa, Ottawa, Canada

[3]Risk Sciences International, Ottawa, Canada

Email address:

anusar26@connect.hku.hk (Sarthak Khanna)

[*]Corresponding author

To cite this article:

Sarthak Khanna, Shalu Darshan, Michael G. Tyshenko. The Economic Impact of COVID-19 in India and the Effect of Agricultural Farm Laws on Farm Sector Resilience. *International Journal of Law and Society*. Vol. 6, No. 1, 2023, pp. 31-38. doi: 10.11648/j.ijls.20230601.15

Received: November 9, 2022; **Accepted**: December 6, 2022; **Published**: January 13, 2023

Abstract: COVID-19 was recognized as a pandemic in early 2020 which resulted in lockdowns, social distancing and border closures to both goods and people globally. The impacts to the agriculture sector and farmers included instability in markets and farm prices, disruption of supply chains, and impacts to farmers including migrant worker's health and livelihood. The World Bank considers India to be a lower-middle-income country (LMIC) and disruption of agriculture has profound implications. In India a majority of the population is engaged in the agricultural sector and two-thirds of its household expenditures are for food. Each year the Government of India announces procurement (support) prices for the main agricultural commodities with purchase operations organized through public agencies. Prices, supply chains and farm labour are intricately linked to both income and consumption of farmed crops and vulnerable to disruptions from COVID-19 impacts. We review the situation in India regarding COVID-19's impacts on farmers, migrant workers and the agricultural sector. And also review the government response and impacts of three introduced farm laws designed to reduce COVID-19 impacts to the agricultural sector. The inter-relationships between farmers, government procurement policy, and agricultural laws are explored. The new farm laws implemented with good intentions resulted in widespread farmer protests, lawsuits, mistrust of government, and greatly affected farmer resilience with unexpected results.

Keywords: India, COVID-19, Resilience, Farm Law, Agriculture

1. Introduction

The first cases of COVID-19 in India were reported on January 30, 2020 among three Indian medical students who had returned from Wuhan, China, the epicenter of the pandemic [1]. As COVID-19 cases escalated into the hundreds, lockdowns were announced for the entire country on March 25 2020 and were in place nationwide until May 30 2020. The lockdown confined people to their homes for all but essential activities. It resulted in a mass exodus of people as all non-essential businesses were shut down and individuals returned home.

The lockdown was catastrophic for India's agricultural sector. There are 120 million small farmer holders who contribute more than 40% of the country's grain production, and over half of its fruits, vegetables, oilseeds and other crops [2]. The lockdowns affected migrant farm workers who earn their salary hundreds or sometimes thousands of miles away from home and live a hand-to-mouth existence [3].

A farmer survey conducted in May 2020 of the impact of the COVID-19 pandemic on agricultural production, livelihoods, and food security in India found that the lockdown primarily impacted farmers' ability to harvest, transport, and sell their crops or livestock products which resulted in decreased daily farmer wages. When surveyed 11% of farmers reported they were unable to harvest their crops citing the lockdown as one of the main reasons [4]. The lockdown limited access to the fertilisers, pesticides and seeds important for the pre-harvest period. And after harvest, taking their produce to the market was nearly impossible with limited transport options, road closures and restrictions on interstate travel that impeded the movement of produce across the country and limited the number of points of sale. It resulted in extreme wastage of perishable commodities (vegetables and fruit). Farmers who spent on transportation were left with reduced income to purchase seeds and fertilisers for the following growing season. Thus, the pandemic and lockdown induced a suite of secondary effects on food security, food supply chains and reduced agricultural food production which resulted in food shortages, rations and government public distribution schemes [5].

The COVID-19 pandemic led to a 2.5% contraction of the agriculture sector in the first quarter of 2020 reflected in growth limited to 3.4%, as compared to a 5.9% increase in the previous, non-pandemic quarter [6]. The pandemic impacted the supply chains that caused price fluctuations for some food crops and increased the supply of farm labour beyond the absorptive capacity as more than 45% of the migrant labour employed in various other sectors headed home during the first wave of COVID-19 [7].

The Ministry of Agriculture and Farmers Welfare responded quickly under the PM-KISAN Yojana program (first established in 2018) to provide a direct cash transfer of 6,000 rupees to small farmers with land holdings of less than 2 hectares. Even though Indian food prices remained mostly consistent for consumers during the pandemic (barring minor fluctuations in vegetable prices) the food grain and food price market underwent extreme volatility with farmers bearing the costs and losing profits [6].

India has used a procurement system to stabilize food grain prices under its Disaster Management Act since 2005 to help protect small farmers from natural disaster events such as monsoons, droughts, and crop loss from adverse weather events by buying crop grains at guaranteed minimum prices [8].

The government also responded with three major Farm Laws to address the impacts of the pandemic on the agriculture sector: 1) The Farmers' Produce Trade and Commerce (Promotion and Facilitation) Act, 2020; 2) The Farmers (Empowerment and Protection) Agreement on Price Assurance and Farm Services Act, 2020; and 3) The Essential Commodities (Amendment) Act, 2020.

We review the three introduced Farm Laws and discuss their advantages and disadvantages for management of COVID-19 impacts to the agriculture sector in India.

2. Methods

Published literature was identified using a search of multiple online journals and publishing platforms such as PubMed, JSTOR, Elsevier and SAGE using the keywords: "India, COVID-19, and agriculture". Similarly, a grey literature search was conducted to identify articles using Google Scholar searching for keywords, "India, COVID-19, and agriculture" or "India, COVID-19 and farm". Further, data was collected from publically available reports published by the India Ministry of Agriculture and Famer Welfare, India Department of Commerce, and the Food Corporation of India.

3. Results and Discussion

The contribution of the three Acts to agricultural resilience during COVID-19 is reviewed. The advantages and disadvantages of the introduced farm laws are summarized.

3.1. The Farmers' Produce Trade and Commerce (Promotion and Facilitation) Act, 2020

It was aimed at "countering hindrances to the present marketing procedures in the farm sector." As per the present system, farmers need to sell their produce at the designated district Agricultural Produce Market Committee (APMC) Mandi. Post liberalisation of the Indian trade markets, agricultural reforms were sought by successive governments but could not be enacted owing to political considerations [9]. The Act aimed to ease such restrictions so as to allow for trade across mandis, intra and inter-state. Though the APMC Act was introduced in the 1960s to provide for organized farmer markets, a visible drawback was how it rendered farmers dependent on trade intermediaries or middlemen. This has led to additional problems especially during the pandemic as it lengthened the supply chains and left farmers with little to no bargaining power. Several studies point to the Minimum Support Price paradox that was created post the first COVID-19 wave, when agri-tech businesses struggled to secure contracts, thus making the MSP the Maximum Sale Price. Also the opaque price-discovery mechanisms, often through "collusive trader behaviour or hoarding" as in the case of onions that lead to farmers obtaining a fraction of the actual sale price, was insufficient for covering the costs and debt servicing [10].

Debt-servicing brings us to another important point which renders private debt extension useless as there are no takers for it; unable to service or repay such debts, farmers with non-aggregated land holdings found it hard to take up private debt during the pandemic. This is another hurdle that the APMC Amendment Act aimed to bypass. The Act intended to also minimize another impediment posed by the largely dominant Agricultural Produce Market Committee (APMC) mandis which is that of fragmented markets that prevent a single, national market front from emerging. The new Act intended to reduce the jurisdiction and oversight of the mandi (or obligation fee) to a 'market yard', thereby making the area outside this 'market yard' a 'trade area' wherein entities are free to operate without buyer licenses and the compulsion to pay a mandi [10]. The Farmers' Produce Trade and Commerce (FPTC) Act would have facilitated the setting-up of a centralised online trading platform which would have taken the shape of "price information dissemination and marketing intelligence system for farmers' produce" (see Table 1).

Table 1. *Advantages and disadvantages of the Farmers' Produce Trade and Commerce (Promotion and Facilitation) Act, 2020.*

Farm Act (Repealed)	Advantages	Disadvantages
The Farmers' Produce Trade and Commerce (Promotion and Facilitation) Act, 2020	1) Economists stress that farm-to-fork competitiveness can only be achieved when agricultural commodities have shorter and more efficient supply chains thus guaranteeing lower input prices and higher output prices. Chatterjee (2018), as cited in [10] stresses upon the impediments to a single national market caused by the stringency of APMC Acts. The removal of such barriers to trade will result in an increase in farmer prices by at least 11%, which minimizes the impact of price fluctuations such as those recorded during the pandemic. Better farm-to-fork prices will also minimize the amount of state agency procurement at the MSP and will restore MSP to its original function of a price floor. 2) Digitization of the agricultural ecosystem also offers potential to further improve farm-to-fork competitiveness. The FPTC Act, 2020 assures the setting up of an electronic trading platform and an information dissemination portal pertaining to agricultural produce. However, another direction into which these laws could foray is inviting investment for better mapping and crop-quality monitoring systems such as drones that countries like China and Thailand have increasingly used [11]. This minimizes the need for manual labour thus, minimizing the risk of viral spread during the pandemic, which has been rampant across migrant labour. It will also improve productivity, precision during crop cycle and will reduce operator exposure [11].	The threats posed by COVID-19 such as limited market access are what primarily drive the need for an interoperable single national market. These markets, if they materialize, will create digital linkages between producers and buyers. However, the Acts do not guarantee interoperability and thus, markets could remain fragmented rather than being unified [10].

3.2. The Farmers (Empowerment and Protection) Agreement on Price Assurance and Farm Services Act, 2020 (FAPA)

The Farmers Empowerment and Protection Act 2020 aimed to enable contract farming at pre-agreed or "locked-in" prices, shortening the link between farmers and firms [12]. The Act explicitly mentioned "advance price determination at the time of agreement, and in case of price being subject to variation, price guarantee for produce and price reference for any additional amount thereon." This Act provided for a framework for written agreements between farmers and sponsors, if they chose to enter into such contracts or agreements. The Act, which was introduced in June, 2020 as an ordinance, had a long history of consultation with the stakeholders. Several economists and critics alike, have pointed towards the existence of a similar law for contract farming, commonly referred to as the Model Act, 2018.

The now defunct Act, however, had some distinct features and departed from the Model Act, 2018 in the sense that while it minimized the obligations for contract farming, it explicitly excluded land leasing and sponsor-built structures on the farm land. The limited obligations, if put to use efficiently, could have led to surpluses for those entering such contracts providing a much needed respite to the agricultural sector during the pandemic. Another major distinction between the 2018 Act and the new Act was that it mandated two-thirds of the payment for such contracts be made at the time of the delivery and the remaining post the completion of due certification, but added the inspection of, "quality, grade and standards for pesticide residue, food safety standards, good farming practices and labour and social development standards." This presented a contentious point since these aspects have only been suggested and not mandated even though labour exploitation in contract farming seems to be rampant [13]. The Act seemed to be the first consolidated attempt at adopting a nation-wide standard for contract farming. Earlier attempts had been limited to state levels with individual states foraying into the contract farming space, an example of which is the Punjab Contract Farming Act, 2013 (see Table 2).

Table 2. *Advantages and disadvantages of the Farmers (Empowerment and Protection) Agreement on Price Assurance (FAPA) and Farm Services Act (FSA), 2020.*

Farm Act (Repealed)	Advantages	Disadvantages
FAPA and FSA	A study conducted by the International Institute for Sustainable Development in 2020 across six different countries and six different commodities has brought to the fore several advantages offered to Voluntary Sustainability Standards (VSS) compliant producers. While 70% of the contracts for farmers of regular cotton in India remained unfulfilled, those that were VSS compliant claimed "better connectivity despite disruptions" [14]. Similar experiences were shared by Rwandan coffee cultivators and producers of organic rice in Cambodia, who have been able to secure premium prices for VSS compliant crops. This works as a price assurance and fair-price guarantee for vulnerable producers. Voluntary sustainability standards have been advocated and pushed for by private players which will find it easier to invest once the new laws are implemented.	Marketing seasons during the pandemic have witnessed multiple price fluctuations even though they have not been huge [6]. Survey results for VSS farmers also reveal that in some cases they were unable to attract premium prices and witnessed a price drop below the government set MSP, leading to sale of produce at the prevailing minimum support price [14]. APMC prices have been used as a reference price for private contracts and if this mechanism continues to endure then the advantages offered by the 'trade area' as defined in the Acts will offer limited advantages. The fear among farmers is also that of cartelisation among private players which might lead to lower price offerings especially as there is effectively no regulatory mechanism or authority over these private players under this new legislation. Farmer mobility across regions and potential threats during adaptation to newer systems such as a loss of subsidies and government support in case farmers shift from paddy and wheat to oil seeds and groundnuts is also rampant. Mobility and consolidation of small farmers and farm units is a severely debated topic with no consensus among experts. Prominent agricultural economist Ashok Gulati claims that smaller farmers have more mobility across regions and more scope for crop diversification. Evidence suggests that their consolidation can lead to co-operatives behaving as monopolies and multinationals themselves [10].

3.3. Essential Commodities (Amendment) Act, 2020

The Essential Commodities Act attempted to remove the "arbitrariness and unpredictability in notifying stock limits" through the introduction of transparent price triggers that would be based on explicitly mentioned price rise - 100% in the horticulture produce retail price and 50% in the non-perishable agricultural foodstuffs price. India's surplus status in the production of most agricultural products has failed to materialize in the securing of better prices for farmer produce owing to the lack of investment in cold storages, warehouses and regulatory mechanisms, all of which act as hindrances to private investment.

The COVID-19 pandemic presented an opportunity to the government to attract immediate investments in the agricultural sector through agri-tech businesses which had already seen an investment jump of more than 200% in the preceding year. There have been debates around the price limits being either too high to be triggered or too low to be relevant [10] (see Table 3).

Table 3. *Advantages and disadvantages of the Essential Commodities (Amendment) Act, 2020.*

Farm Act (Repealed)	Advantages	Disadvantages
Essential Commodities (Amendment) Act, 2020	A potential advantage offered by these farm laws is the offloading of excess food grain stocks through open market operations [15]. There was a record-breaking off-take levels owing to food grain reserves at the Food Corporation of India (FCI) being linked to public distribution schemes (PDS) and the Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY) [16]. Under the National Food Security Act beneficiaries were provided with additional 5 kilograms of free grains from April to November, 2020. Despite such linkages there was a massive excess stock of food grains with the FCI which according to June, 2020 figures stood at 970 lakh tonnes, against a buffer stock requirement for PDS of 411 lakh tonnes. The economic cost of rice and wheat for 2020-21 was at Rs. 37,267 per tonne and 28,838 per tonne, respectively, which could translate into additional government revenue of Rs. 1,50,000 crores providing finance for the emergency respite schemes initiated by the government during the pandemic. The ECA Amendment, 2020 made inviting investment by the private sector easier as no stock limits, except when the conditions listed above are triggered, can be imposed. This opened up channels for open-market operations and off-loading of excess FCI stocks.	A well-entrenched myth seems to be around traditional supply chains which are associated with high levels of wastages. However, these wastages along supply channels range from 3.9% to 18% [10]. This does not discount the need for waste minimization or discredit private players; their contribution to increasing yields and bettering supply chain linkages is considerable. Yet, the evidence around these wastages decreasing significantly is limited and varies on a crop-to-crop basis. However, this does not dismiss the role that agri-tech businesses and private corporations have played, especially during the pandemic, in offering financial incentives, extension programmes and access to risk-mitigation products [11].

The introduction of the three farm laws resulted in various impacts including: procurement effects during the pandemic, impacts to wheat and rice production during the COVID-19 pandemic, and affects to the Minimum Support Price during the pandemic. The response and reaction to the farm laws is summarized.

3.4. Procurement Effects During the Pandemic

While the total procurement touched record highs, it was mostly due to extensive procurement of wheat. It can be observed that rice procurement through the government dropped despite a much higher minimum support price from the previous fiscal year. Rice procurement was concentrated in the private sector. Higher wheat procurement can be interpreted as a move by the center to allay fears of wheat producing farmers. Most protesting farmers were from wheat producing belts of Punjab and Western Uttar Pradesh. The farm laws seemed to be an attempt to disincentivize farmers of Punjab so as to make way for a transition to groundnuts and oilseeds (see Figure 1).

3.5. Wheat and Rice Production During the Pandemic

Wheat production in India showed a marginal growth rate since 2014-15. The pandemic and the introduction of the farm laws do not seem to have impacted either production or procurement in a manner that adversely impacted small farmers (see Figure 2).

3.6. Minimum Support Price During the Pandemic

Even though the procurement for wheat and rice was at an all-time high, the minimum support price was hiked only marginally in comparison to the previous year. The wheat growing belt, in the first few months of the pandemic and during the first harvest season, had experienced a severe labor shortage due to a migrant labor crisis in these states as daily wage workers struggled to reach their home states (see Figure 3).

3.7. Response and Reaction to the Farm Laws

The farm laws were passed in September 2020 and resulted in widespread protests by thousands of primarily wheat farmers from Punjab, Haryana and western Uttar Pradesh [17]. Farmers set up permanent protest sites along the Delhi-Uttar Pradesh border to raise awareness of the farmer's disagreement with the three farm laws [18] (Vasudeva, 2021). The repeal of the three farm laws was one of the key demands brought by nearly 40 farmer unions in a legal challenge [17]. The government was accused of introducing the farm laws too quickly without fulsome consultation with farmers or other agriculture stakeholder groups, and that the new farm laws were aimed at promoting corporate farming interests over small farm enterprises [19].

After 14 months of sustained farmer protests the three laws were finally repealed on December 1, 2021. The Law Ministry passed The Farm Laws Repeal Law, 2021, which negated all the farm laws passed by Parliament last year during the COVID-19 pandemic [20].

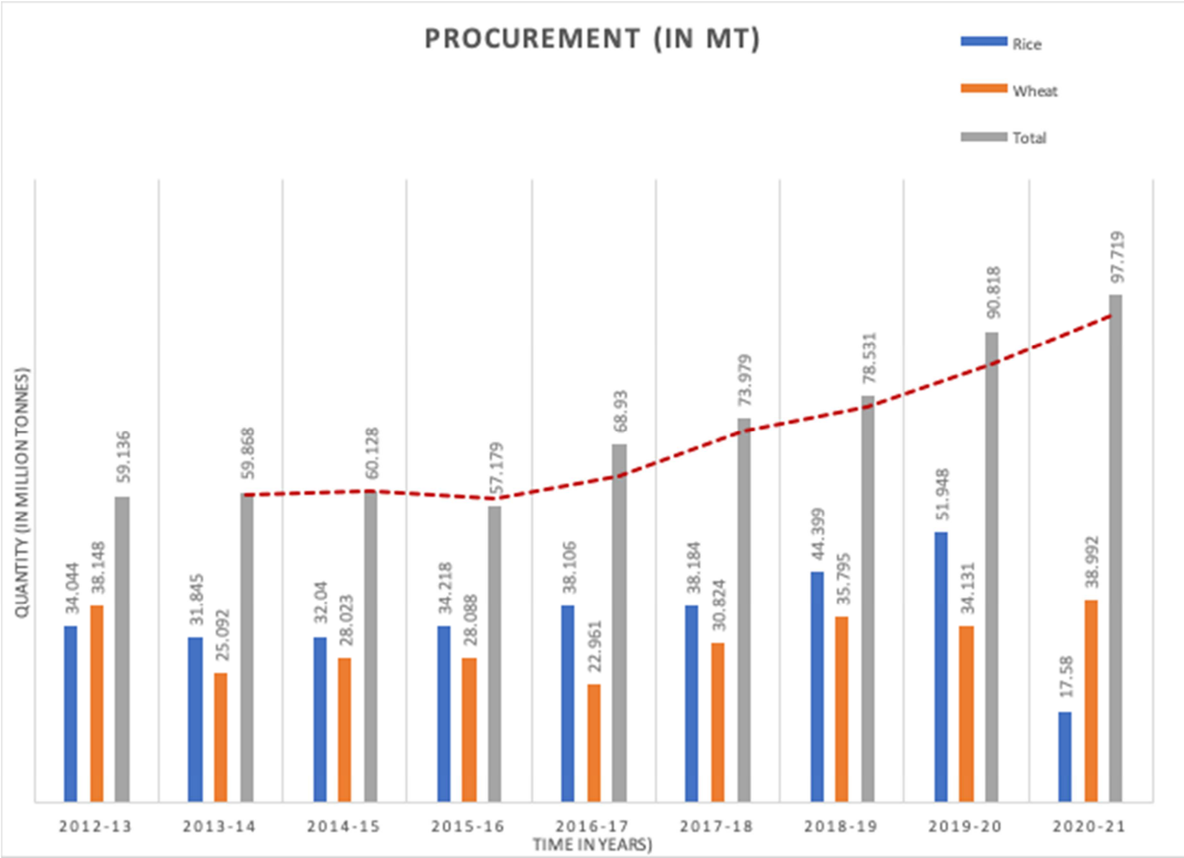

Figure 1. *Central government procurement of wheat and paddy crops from 2012 to 2021.*

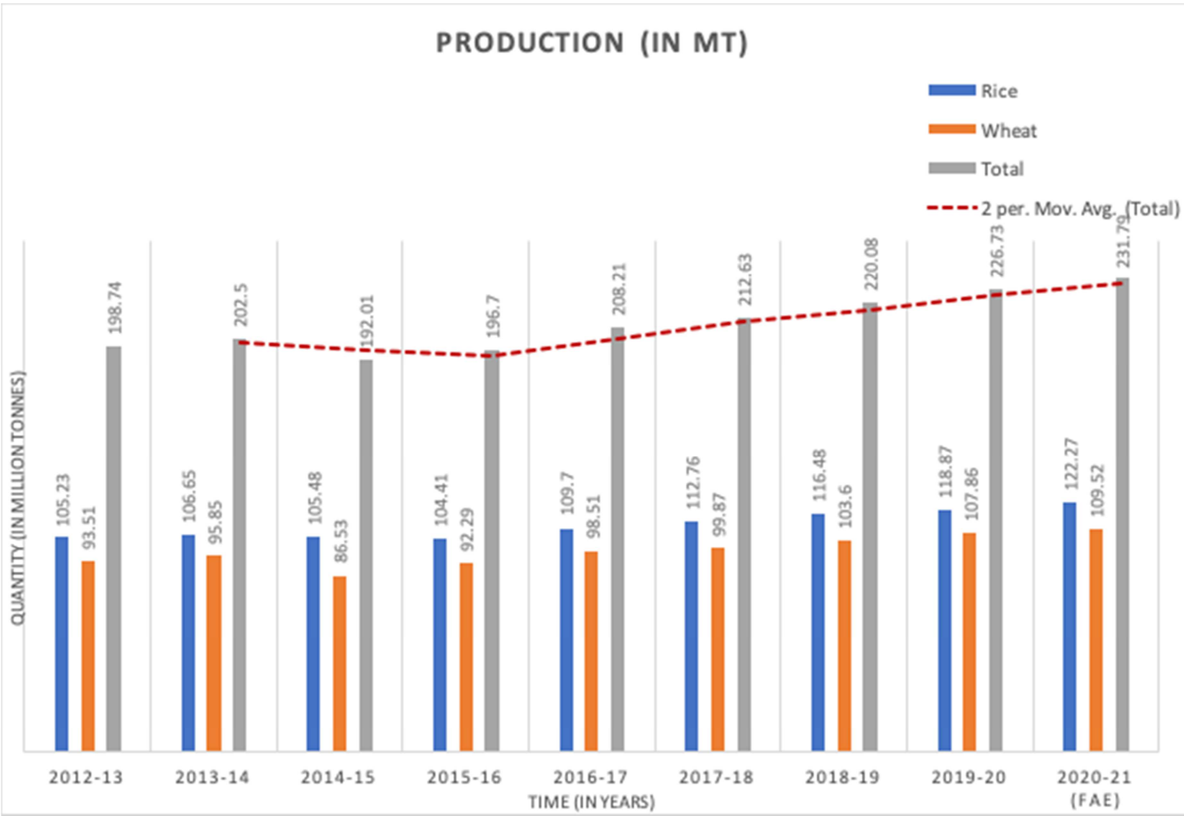

Figure 2. *National production of wheat and rice in million tonnes (MT) from 2012 to 2021.*

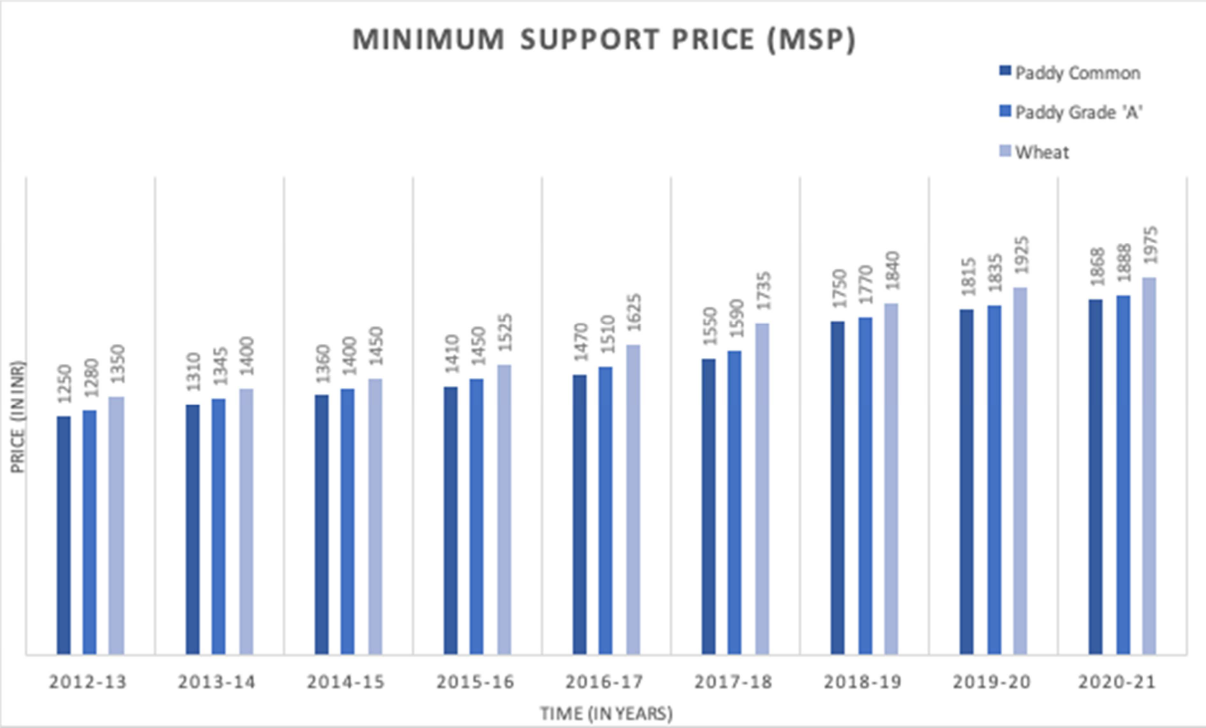

Figure 3. *Minimum support prices (MSP) in Indian Rupee (INR) for wheat and rice from 2012 to 2020.*

4. Conclusion

The COVID-19 pandemic exposed the vulnerabilities already present in the agricultural sector in India. The government introduced three new Farm Laws to help support the large number of small farmers who are essential for the food supply chain.

The agricultural workforce contributes about 18% towards the total GDP. Lockdowns and temporary business closures from COVID-19 acted as a contributing factor affecting the entire agriculture production system with estimates of the loss in total system productivity at between 9% and 21% [21].

The Government policy of procurement of food grains has broad objectives of ensuring minimum support prices (MSP) to the farmers and availability of food grains to the weaker sections at affordable prices. It ensures effective market intervention thereby keeping the prices under check and also adding to the overall food security of the country [22]. The food grain procurement for the year 2020-21 had touched record highs of 977.19 lakh tonnes (97.7 million metric tonnes), an increase of 7.6% from 2019-20 [23]. The central procurement pool expansion came at a time when the second wave of the pandemic raged across the Indian subcontinent and the economic recovery remained uncertain. Both wheat and rice between the years 2019-20 and 2020-21 show increased procurement. Wheat procurement for 2020 in that period and previous three marketing seasons was recorded as 341.33 lakh tonnes (34.1 million metric tonnes) and for rice as 519.97 lakh tonnes (51.9 million metric tonnes). This reflects an increase to 389.93 lakh tonnes (38.9 million metric tonnes) and 576.29 lakh tonnes (57.6 million metric tonnes), respectively [23]. While the procurement of wheat dipped in 2019-20, a record procurement level indicates the extension of government support to the farmers post the second wave of COVID-19. This increased procurement is seen as a fallout of the recent agitations against the Centre's farm laws. Over one third (38.5%) of the total amount of Minimum Support Price allocated towards crop procurement went to Punjab and Haryana, as farmers of these states were seen at the forefront of the agitations [16]. It should be noted that the increased procurement for wheat and rice can be attributed to state agencies, as procurement by agencies over the past few years has remained consistent, but surged in 2020-21. The procurement by the Food Corporation of India has fluctuated over the years and has dipped slightly in the year 2020-21 [24].

The Farmers' Produce Trade and Commerce (Promotion and Facilitation) Act, 2020 was perceived by the farmers as disadvantageous as it aimed to disincentivize growing of wheat and paddy, crops that are considered to be water guzzling, and instead incentivize the farmers to cultivate groundnuts and oilseeds. This transition seemed sudden and forced especially during the pandemic and thus, presented a point of contention between farmers and the government.

The Farmers (Empowerment and Protection) Agreement on Price Assurance and Farm Services Act, 2020 would have introduced a much needed relief for the farm sector through the practice of locking-in prices or fixed contract prices. This in turn would have aided the farmers in availing better prices for their produce as it would have limited the number of price fluctuations experienced.

The Essential Commodities (Amendment) Act, 2020 focused on enabling offloading of excess crop stocks in the national pool to private players. This act allowed the generation of revenue through the sale of excess stocks of food grains such as wheat. While it would have significantly reshaped the storage practices of excess crops and the implementation of public distribution schemes, the impact on small farmers seems to be negligible.

The government repealed the three farm laws returning the farming sector to the status quo [20, 25]. The government's objective through the farm laws seems to have been to provide a way for smooth transition to a private agrarian economy. It is clear now that while they may have espoused overall growth of the farm sector as their primary objective the message to the last unit of this agrarian economy, the small farmer, was not communicated with clarity, reassurance, or inclusion of the farmers in the decision-making. As a result of the repeal the farmers in states like Bihar will continue to be outcompeted by those in Punjab owing to better per acre productivity. This status quo also ensures that the government will have to look for alternatives to offload the excess stock that the Food Corporation of India accumulates leading to wastages and rotting crops. The government has weak powers to impact the farm laws in states. The states viewed the national farm laws as impinging on their jurisdiction to make and direct farm laws.

References

[1] Vaman, R. S., Valamparampil, M. J., Ramdas, A. V., Manoj, A. T., Varghese, B., & Joseph, F. (2020). A confirmed case of COVID-19 among the first three from Kerala, India. The Indian journal of medical research, 151 (5), 493–494. https://doi.org/10.4103/ijmr.IJMR_2205_20

[2] Maggo, D. (2020). Impact of COVID-19 on smallholder farmers – insights from India. World Business Council for Sustainable Development. Available at: https://www.wbcsd.org/Overview/News-Insights/WBCSD-insights/Impact-of-COVID-19-on-smallholder-farmers-in-India.

[3] The Guardian. (2020). India racked by greatest exodus since partition due to coronavirus". March 30. Available at: https://www.theguardian.com/world/2020/mar/30/india-wracked-by-greatest-exodus-since-partition-due-to-coronavirus

[4] Jaacks, L. M., Veluguri, D., Serupally, R., Roy, A., Prabhakaran, P., & Ramanjaneyulu, G. V. (2021). Impact of the COVID-19 pandemic on agricultural production, livelihoods, and food security in India: baseline results of a phone survey. Food security, 1–17. https://doi.org/10.1007/s12571-021-01164-w

[5] Murali, V. S. (2021). Commentary: India has a hidden COVID-19 crisis of food. CNA. Available at: https://www.channelnewsasia.com/commentary/india-farmers-agriculture-food-security-migration-covid-19-2003541

[6] Cariappa, A., Acharya, K., Adhav, C., Sendhil, R. & Ramasundaram, P. (2021). Impact of COVID-19 on the Indian agricultural system: A 10-point strategy for post-pandemic recovery. Outlook on Agriculture, 50 (1), pp. 26-33.

[7] Imbert C. (2020). Webinar on inter-state migration in India in the time of COVID-19. India. Available at: https://www.youtube.com/watch?v=XdVp2S4-hgQ

[8] Srivastava, S., Singh, J., Kumar, N., Singh, N. & Ahmad, N. (2020). Changing Agricultural Labour Market and its Effects on Farm Economy in India. Indian Journal of Agricultural Economics, 75 (4), pp. 469-480.

[9] Sen, A. & Ghosh, J. (2017). Indian Agriculture after Liberalisation. The Bangladesh Development Studies, 40A (1&2), pp. 53-71.

[10] Narayanan, S. (2020). The Three Farm Bills. The India Forum, (10), pp. 1-14.

[11] Narain, D. (2020). Transforming Indian Agriculture: A Policy Framework to Guide US-India Partnership. Atlantic Council, pp. 1-7.

[12] Times of India. (2020). What is farm bill 2020: Pros & cons of three farm bills the centre introduced. [online] Available at: https://timesofindia.indiatimes.com/india/what-is-farm-bill-2020-pros-cons-of-three-farm-bills-centre-introduced/articleshow/78180231.cms

[13] Chaba, A. A, & Damodaran, H. (2021). Explained: Who are arhtiyas, also part of the farmers' protest? What is their role? The Indian Express. Available at: https://indianexpress.com/article/explained/the-arhtiya-business-7098629/

[14] Elder, S. (2021). Coping with COVID-19: Certification supports farmer resilience. International Institute for Sustainable Development Policy Brief, pp. 1-8.

[15] Gulati, A. (2020). Offloading excess foodgrain stocks through open market operations will generate much-needed resources for govt. The Indian Express. Available at: https://indianexpress.com/article/opinion/columns/india-lockdown-food-stock-food-corporation-of-india-ashok-gulati-6469970/

[16] Damodaran, H. (2021). Explained: In Covid-19 pandemic, here are four food records. The Indian Express. Available at: https://indianexpress.com/article/explained/explained-covid-19-pandemic-food-grains-rice-wheat-public-distribution-system-7357653/

[17] The Hindu. (2021). Cabinet approves Farm Laws Repeal Bill. New Delhi, November 24. Available at: https://www.thehindu.com/news/national/cabinet-approves-farm-laws-repeal-bill/article37658627.ece

[18] Vasudeva V. (2021). Farm laws repeal. A feel of victory, but fields of discontent. The Hindu. November 27. Available at: https://www.thehindu.com/news/national/farm-laws-repeal-a-feel-of-victory-but-fields-of-discontent/article37710334.ece

[19] The Hindu. (2021). Repeal of farm laws: 'Victory of non-violent struggle'. November 19. Available at: https://www.thehindu.com/news/national/karnataka/repeal-of-farm-laws-victory-of-non-violent-struggle/article37573699.ece

[20] The Hindu. (2021). It's official. Three farm laws scrapped. December 2. Available at: https://www.thehindu.com/news/national/president-gives-assent-to-farm-laws-repeal-bill/article37802828.ece

[21] Balwinder-Singh, Shirsath, P. B., Jat, M. L., McDonald, A. J., Srivastava, A. K., Craufurd, P., Rana, D. S., Singh, A. K., Chaudhari, S. K., Sharma, P. C., Singh, R., Jat, H. S., Sidhu, H. S., Gerard, B., & Braun, H. (2020). Agricultural labor, COVID-19, and potential implications for food security and air quality in the breadbasket of India. Agricultural systems, 185, 102954. https://doi.org/10.1016/j.agsy.2020.102954

[22] Food Corporation of India. (2021). Procurement. Available at: https://www.fci.gov.in/procurements.php/

[23] Department of Food and Public Distribution. (2021). Production and Procurement of Foodgrains. Department of Food and Public Distribution, pp. 1-27.

[24] Food Corporation of India. (2021). Agricultural Highlights. Food Corporation of India, pp. 1-50.

[25] Business Standard. (2020). Benefits, drawbacks of the 3 farm laws at the heart of farmers' protests. Available at: https://www.business-standard.com/article/current-affairs/benefits-drawbacks-of-the-3-farm-laws-at-the-heart-of-farmers-protests-120120600592_1.html.