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**Assuring Farmers Income in the Context of New Farm Laws:
Issues and the Way Forward**

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Assuring farmers income in the context of New Farm Laws:

Issues and the way forward

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Abstract

India passed new farm laws to open up agricultural economy. On the fear of exposing to market volatility, farmers are agitating for guaranteed minimum support price. The paper analysed the farm laws by using secondary data collated from various government reports and literature. Although, MSP policy achieved its objective of providing assured prices for paddy and wheat farmers, it neglected other crops like pulses and oilseeds, resulted mass undernourishment among children and women. Under the existing MSP policy, farmers of pulses and oilseeds are exposed to market vagaries and volatility, resulted in low production, low profitability and excessive dependence on imports. The paper suggested a modified MSP policy as price insurance. Although the new farm laws will incentivize private investments in agricultural infrastructure like cold chains, warehouses, collection centres and aggregation centres, they cannot ensure stable and remunerative prices to farmers. Under the new farm laws, the role of the MSP policy should be altered in such a way that (i) Procurement of paddy and wheat to meets the needs of procurement for food security, (ii) Price Deficiency Payment Scheme (PDPS) for remaining 21 crops and (iii) Provide signal price for crops with fragmented markets.

Keywords: Farm laws; Farmers income; price insurance; price policy

JEL classification: Q11, Q13, Q13, D24

Assuring farmers income in the context of New Farm Laws: Issues and the way forward

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1. Introduction

India's rural economy has undergone significant changes during last decades where the share of agriculture in GDP has reduced significantly from 47.6 per cent in 1960-61 to 14.4 per cent in 2010-11 [1] and a little rise to 19.9 per cent 2020-21. The share of agriculture in rural income was declined from 57% to 39% but the declination of rural employment from 78% to 64% [2] is not much notable in comparison to other developing countries. The agriculture sector or farming everywhere is a risky business, especially for small-scale farmers who operate it in precarious conditions in poor countries [3]. As per the agricultural statistics, 2014, in India, 263 million people of those who depends on farming are either farmers or agricultural workers. Nearly 87 percent of farmers in India having less than two hectares of land while 69 per cent does not even possess a hectare of land [4]. These marginal and small farmers contribute 51% of agricultural output with 46% of operated land [5]. So, the farmers are considered as the major contributors to the economic growth of the nation and their concerns impact policies in the country. Economic growth and poverty are the important indicators of a country's development [6] and are also indicate the farmers well-being. The most appropriate measure of farmers' well-being is the level of farm income. The estimates of farmers' income are usually drawn by using the indicators that directly or indirectly affect agriculture and farmers' income [7]. The transition of economical changes impacted agriculture in such way that about 90 per cent of the farmers survive on such a poor income which is barely enough to meet their daily consumption need. To open up agricultural input and output markets, government of India passed three farm laws (i) The Farmers' Produce Trade and Commerce (Promotion and Facilitation) Act, (ii) The Essential Commodities (Amendment) Act and (iii) The Farmers (Empowerment and Protection) Agreement on Price Assurance and Farm Services Act. But there was no proper communication about the benefits of the laws, resulted wide spread agitation by the farmers.

Box 1: Long period of policy paralysis

- ✓ Famine situation 1943, 2nd world war, low agricultural productivity (ship to mouth)
- ✓ Almost 100% under small petty traders (small, feudal)
- ✓ Essential Commodities Act, 1940s and 1950s (stock limits)
- ✓ Restrictions on inter-state trade (Punjab- wheat price Rs.1925; Bihar- Rs.1700)
- ✓ APMC Act, Green revolution, FCI, STC of India, warehousing corporation of India - 1960s and 1970s (big government, but capabilities?)

Policy paralysis (1980s to 2020)- inspector raj/rent seeking

- ✓ High cost of intermediation (cost of intermediation up to 3/4th)
- ✓ Retailers margin (25%) or 60% of consumer price
- ✓ 46% leaking from FCI-PDS system; 30-35% grain never reach consumer
- ✓ Green revolution/White revolution- mostly central government initiative
- ✓ 1990s- economic liberalisation (industry and services-but not agriculture)

2. Objectives of the study

Given this background the paper examined the existing policy scenario in farm sector and how the new farm laws will be beneficial to farmers and also look in to alternate policies to enhance farmers incomes.

3. Methodology and data

The paper is based on secondary data collected from various government reports mainly (i) Commission for Agricultural Costs and Prices (CACP), (ii) Agricultural statistics at a glance, Ministry of Agriculture, Government of India, (iii) Crop and Season reports, AGMARKNET, Food Corporation of India (FCI) reports, NSSO Agricultural Situation in India reports and (iv) various published sources. The data gathered since last two years on cost of production, Minimum Support Price (MSP), market arrivals and Prices, Procurement and open market operations of FCI, mode of sale and sale prices, farmers income etc.

4. Results

4.1 Reasons for low farm income

The Indian population are also engaged with various income generating activities apart from agriculture and the value of output was considered as income from that activity. The income of farmers from various sources in Table 1 describes that the average monthly income of an agricultural household was Rs 8931 and in rural household it was Rs 8059 [8] and this indicate how alarming the farmers' economic condition is? The NSSO (2011-12) data reveals that the rural households with employment in agriculture as the principal occupation (or farmers) having income less than the poverty line.

Box 2: Historical legal and regulatory framework (Laws and orders)

- ✓ Agricultural Produce Marketing (Grading & Marketing), Act, 1937
- ✓ The Essential Commodities Act, 1955
- ✓ National Cooperative Development Act, 1962
- ✓ Food Corporation of India Act, 1964
- ✓ Prevention of Black Marketing & Maintenance of Supply of Essential Commodities Act, 1980
- ✓ The Bureau of Indian Standards Act 1986
- ✓ Model APMC Act (Agricultural Produce Marketing Committee) Act 2003
- ✓ Forward Contract (Regulation) Amendment Act 2006
- ✓ The (Warehousing Development and Regulation) Act, 2007
- ✓ Model Agriculture Land Leasing Act, 2016.
- ✓ Model Agricultural Produce and Livestock Marketing (promotion and facilitation) Act, 2017,
- ✓ Electronic national agriculture market (eNAM),
- ✓ Model Contract Farming Act, 2018

Table 1: Income of households from various sources

Income source	Agricultural HH	Non-Agricultural HH	All HH
Cultivation	3140	-	1494
Livestock	711	-	338
other enterprises	489	851	679
wage labour	3025	3940	3504
Govt/pvt. Service	1444	2326	1906
Other sources	122	152	138
All sources	8931	7269	8059

The reasons for declining the share of agriculture in rural household income are

- i) **Declining terms of trade:** A widely held perception shows that the trade for agriculture is considerably fluctuating over time [9], consequently agriculture is seen as a declining sector, and one which should receive less policy priority than others in efforts to promote growth [10]. Some study concluded that the low farm income is one of the reasons for rising agrarian distress and farmers abandoning farming [11].

Fig 1: Long run commodity prices (deteriorating terms of trade for farmers)

ii) Income Consumption gap: As per NSSO, 2014 the average monthly income of a farmer was Rs 6427 or Rs 77,124 annually [12]. The average household income was 32.7% above poverty line. It was reported that income was higher for medium and large farmers who are holding above 2 hectares of land. In Fig 1 the monthly income and expenditure of agricultural households are divided among ten deciles (income surrogates) of monthly per capita consumption expenditure (MPCE) considering the 1st decile as the lowest income group and 10th decile as the highest income group. The average income of 10th decile is significantly higher than the other decile groups where there was no scope of income surplus after meeting consumption needs [13]. The income gaps indicate the higher consumption level of the households than their income. It forces farmers to incur debts to meet their daily needs and the dependency on the informal credit sources due to the unnecessary of collaterals push them into a vicious cycle of indebtedness.

Fig 2: Decile wise monthly income and consumption gap (Rs.) of HHs-2012-13

iii) Indebtedness: Among all the decile groups of MPCE, the occurrence of indebtedness among agricultural households was significantly higher than non-agricultural households (Fig 2). It is surprising that the upper decile group households are relatively more indebted than lower decile households. NSSO, 2014 reported that the share of indebted farmers is 52 per cent and interestingly, the share increased with the farm size for accessing the institutional credit.

Fig 3: Incidence of indebtedness by decile class of MPCE (%) in 2015-16

The low level of farmers' income and its fluctuations in every year are the major source of agrarian distress. The distress is spreading and getting severe over time impacting almost half of the population of the country that is dependent on farming for livelihood. Persistent low farm income can cause serious adverse effect on the future of agriculture in the country [14].

iv) Poor access of the strategy "Doubling farmers' income": Although the number of farms in India has increased more than doubled from 71 million to 145 million ha in 1970-71 to 2015-16, the average farm size reduced more than halved from 2.28 ha to 1.08 ha [15]. This is due to the heavy demographic pressure that has led to

subdivision and fragmentation of land holdings [16]. Several studies pointed out that small farmers are more productive than large farmers. But despite intensive efforts put in by these farmers, the poor return to farming which is the root of agrarian crisis in India keep the farmers in poverty [17]. It was found that sometimes the household consumption of marginal farmers exceeds their net monthly income from both farming and non-farming activities. According to 2015-16 agriculture census, near about 100 million farming households need to struggle for this. It was also found that incomes grew the least for marginal farmers and growth of incomes was proportional to the size of the farm. Therefore, the strategy of doubling of farm incomes is a reality only for the largest land-owning group [15].

Fig 5: Income growth of different categories of farmers.

- v) **Low investment capability:** Due to the less asset holdings, lack of credit, burden of debt, the lower decile households i.e. the marginal and small framers are unable to invest adequate fixed capital than the upper decile households and this become a barrier to achieve a higher farm productivity. Also, as the farmers are rendered incapable of investing in capital assets, other fixed assets or even in education, it led them to a perpetually indebtedness.

Fig 6: % of rural households reporting fixed capital expenditure & average amount (2012-13)

vi) Low institutional investment: The other pertinent reason for the poor income level of the farmers is the rigidity of the current farm laws which permit only the farmers to sell in the APMC mandi. This has led to a very small private sector investment in the agriculture sector, to the tune of 2% of the GFCF in 2017-18. All of this has given rise to a vicious cycle of low prices, low incomes, increased debts and low investments which in turn lead to low-income levels.

Fig 7: Sources of GFCF in 2017-18

4.2 The Vicious cycle of low incomes

The people in the developing countries like India where smallholders contribute the major share in farming community have low per capita income. Having low income due to low production and getting low price from their farm output, the purchasing power and the capacity of savings are low. The low level of savings means deficiency of capital and to indebtedness which in turn, discourages the investment power of

the farmers. On the other side, low purchasing power reduces the demand for products that limits the market size. And the small size of market also discourages the investment. The lack of investment in a small farm leads to reduce the production and hence the amount of return (fig 8). Thus, the vicious cycle goes on like this and the farmers are continued to be oppressed by poverty.

Fig 8: Vicious cycle afflicted the small holders

4.3 Current status of MSP implementation

Though the agrarian economy of India contributing to around three-fourths of the country's GDP discussed earlier, the scarcity of food due to the low production along with the excessive demographic pressure and the critical situation of low farm income describe above pushed India to reform its agricultural policy. So, the country adopted significant policy reforms focused on achieving food grain self-sufficiency by boosting the agricultural production. These includes the introduction of the Minimum Support Price (MSP), a tool which gives guarantee to the farmers, prior to the sowing season, that a fair amount of price is fixed to their upcoming crop to encourage higher investment and production of agricultural commodities [18]. That means the MSP was announced to signal the farmer regarding the competitiveness of each crop in different regions so that they can produce the one which will fetch them a price which is greater than their cost of production.

However, the successful implementation of a scheme can be achieved only if the targeted population is aware of most of the aspects of a scheme like time of their announcements, procurement process, payment mechanism and other facilities provided by the government. In that case, the various states have devised their own mechanisms which suit the local environment for the procurements of food grains and other agriculture produces under the MSP operations.

4.4 Production and Procurement of rice and wheat

The cost of production of crops varies across different states and the below figure depicts the cost of production by states as well as all-India level in ascending order of cost with their corresponding relative shares in total production for different crops during the Kharif Marketing Season (KMS) 2020-21. The figure illustrates the percent of cost of major producing states that is covered by all India weighted cost of production in terms of relative share of production of those states various kharif crops.

Supply curve and projected cost of production for kharif paddy 2021-21

Fig 9: Supply curve and projected CoP for paddy

Among various states, Punjab had the highest share in wheat procurement as well as in marketed surplus of wheat, followed by Haryana. The findings in the graph below show that the level of market participation of kharif rice was also very high in Punjab and Telangana compared to any other states.

Fig 10: Share of major states in procurement of Kharif Rice 2020 (lakh ton)

Fig 11: Procurement of wheat 2020 (lakh tonn)

Fig 12: Share of major states in procurement of Wheat 2020 (lakh ton)

The procurement system has peculiar geographical differences with higher procurements in certain regions and of certain crops and negligible procurements in some other regions and some other crops. Also, there are several imbalances and inherent deficiencies in the MSP system due to which hardly 10% of the farmers receive the benefits under it and the rest are exposed to the market weather. Therefore, the present situation indicates the necessity of improving the marketing efficiency as well as the whole marketing system through the revised policy frameworks.

Fig 13: Average difference (%) between market price & MSP (Kharif paddy 2020)

4.5 Trends in Price

India achieved record production of pulses in 2017-18, making the country self-sufficient in pulses. and gram alone accounts for nearly 70 percent of rabi pulses output. Gram production recorded a significant increase during 2016-17 but India also imported a large quantity of yellow peas, a close substitute for gram, during that time.

Fig 14: Trends in Domestic market Price vis a vis MSP of Gram

The high production and large imports led to a drastic fall in domestic market prices during 2017-18 which were much below the MSP. But gradually the market prices showed improvement due to lower production and reduced imports (Fig 14). And finally, a significant development in the gap between MSP and market price was reported as the gap was reduced and market prices were converging towards MSP. The low market prices were mainly due to depressed prices in few states like Madhya Pradesh, Maharashtra and Rajasthan where farmers have to sell their produce immediately after harvest to meet immediate cash needs. During this period, due to large arrivals in mandi, prices generally rule below MSP [19].

Fig 15: Trends in Domestic market Price vis a vis MSP of safflower

The safflower production has severely declined from a peak of 5.2 lakh to about 22 thousand tonnes in last 3 decades. The low prices along with the low market demand, more remunerative alternative crops and low oil content compared to other oilseed crops are major reasons for decline in safflower production [19]. It is evident from the above graph that market prices of safflower seeds were much lower than MSP during last five procurement seasons from 2016 to 2020. Though market prices have improved during 2019, the gap between market prices and MSP has also increased substantially. There is also a recommendation from government to exclude the crop from MSP scheme due to low production and demand.

4.6 Current status of APMC market

The APMC tax including market fees or mandi charges, rural development fees and commissions to middlemen. But there is a clear non-uniformity in APMC taxes among the states as it is excessively high in Punjab at 8.5 per cent and lowest in Kerala at 0.07 per cent. Mandi charges are too high for almost all states even for a small volume of products. Although there are no mandi charges or rural development fees in Karnataka, agricultural products attract a 3.5 per cent commission charge which is significantly higher than any other states (fig 16).

Further, the sales outside APMC are predominantly out of any regulations which resulted in exploitation of small and marginal farmers (fig 17).

State	Market Fee/ Mandi Charges (%)	Rural Development Fee (%)	Commission/Other Charges (%)	Total
Andhra Pradesh	1.0	-	-	1%+FC*
Assam	1.0	-	-	1.0%
Chhattisgarh	2.0	-	0.2	2.2%+FC*
Haryana	2.0	2.0	2.5	6.5%
Karnataka	-	-	3.5	3.5%
Kerala	-	-	-	0.07%
Maharashtra	1.05	-	-	1.05%+FC*
Madhya Pradesh	2.0	-	0.2	2.2%+FC*
Odisha	2.0	-	-	2%+FC*
Punjab	3.0	3.0	2.5	8.5%
Telangana	1.0	-	-	1%+FC*
Uttar Pradesh	2.0	-	0.5	2.5%+FC*
West Bengal	0.5	-	-	0.5%+FC*

*Note: FC: Fixed Charges. This includes a commission to society of ₹31.25/ qtl on Common Paddy and ₹32/ qtl on Grade A paddy

Source: Food Corporation of India

Fig 16: Non-uniformity in APMC charges

Fig 17: Disposable pattern of crop sold

Above figures indicate that the APMC's mostly be used as a tax revenue source for state governments. Currently, only a small portion of the farmer's produce especially marginal farmers' is sold in the mandi's and the rest is sold in the market. In this particular line, the new farm laws are hope to legalize this practise and strengthening the outside markets.

4.7 Inter-state differences in Govt support

The paper enlightened the interstate differences in government supports such as MSP operations and fertiliser subsidy.

i) *MSP Operations:*

For smooth and effective functioning of MSP, the awareness of farmers is very necessary. A household having knowledge of MSP for at least one crop is considered as aware and the average share of such households is 28.30 per cent for Rabi crops and 23.13 per cent for kharif crops throughout the country. Even after several years of implementation, less than 25 per cent of farmers knows the actual MSP of crops they grow. The operation of MSP is limited only to few states though it was announced for the entire country. In the states like Punjab, Haryana, Chhattisgarh, Uttar Pradesh, Telangana where procurement of food grains is more active, the awareness of MSP is also high (fig 18). Analysing the data of farmers awareness regarding MSP in various states indicates that the farmers from NE states, Jharkhand etc who cultivate the neglected crops receive less support. Whereas, the farmers from the already developed states like Punjab and Haryana receive the benefits from multiple support schemes. This leads to widening of the already existing income divide between the farmers of these states.

The lack of proper networking of procurement agencies due to improper infrastructure for storage and maintenance and lack of awareness among farmers interrupt the operation of MSP. Except for crops like rice and wheat, there is very limited procurement for other crops which lead to the low level of awareness. MSP of rice and wheat is known to the majority of the farmers especially in Punjab, Haryana, Chhattisgarh, the major states from where food grains are procured for buffer stock or PDS [20].

Fig 18: State-wise Awareness of Farmers about Minimum Support Price (MSP) of Crops in Major Crop Seasons (%)

ii) *Fertilizer subsidy:*

The nature and status of agriculture among various Indian states are different due to the diverse climate and soil fertility facilitates cultivation of different crops with

varying nutrient requirements. The fertilizer consumption is also bound to vary according to several factors. Therefore, like MSP, fertilizer subsidy is another kind of support provided by government to make the chemical fertilizer available to all the farmers at affordable rates [21] to improve the food production and thus to make the food grains available to all at affordable price.

Fig 19: Fertilizer subsidy per ha of GCA (2014-15) (in Rs)

Presently, the amount of fertilizer subsidy is concentrated mostly in seven states including Uttar Pradesh, followed by Maharashtra, Karnataka, Madhya Pradesh, Andhra Pradesh, Punjab and Gujarat. These seven states together holding 57.09 per cent of the country's GCA and receives 62 per cent of the total fertilizer subsidy distributed. The share of subsidy per ha of GCA is highest in the states of Andhra Pradesh, Punjab, Telangana and Haryana, and lowest in Rajasthan (fig 19), Maharashtra, Chhattisgarh and Madhya Pradesh. Although most of the states receive subsidy almost equal to their share in GCA, Uttar Pradesh, Andhra Pradesh, Punjab, Haryana and Telangana receive greater subsidy than their share in GCA [22].

4.8 Efficiency of current procurement system of rice and wheat

(i) Procurement operations

Some studies resulted that despite the improvement of production in India through various government supports, there is widespread malnutrition and poverty among the people. In this circumstance, there is a concept of buffer stocking policy which works as an insurance approach against a reduction in supplies in times of falling production. To provide grain for several schemes, the government procures grain directly from the farmers or from the open market at MSP and hold some as buffer stock.

Fig 20: Open ended procurement operations

The current level of buffer stock of food grains, is more than double of the existing buffer stocking norm. The estimated economic cost of rice in 2020 is Rs 37,026/tonne and that of wheat is Rs 27,026/tonne. The above figure pointed out that except few years during 2005- 2007 when stock levels fall below the norm, stocks have been much higher than mandated levels in the recent years. There is about 50 MT excess stock worth about 1.5 lakh crore of which interest is about Rs.10,000 crore.

The reason for the increase in procurement is two-fold such as supply and demand. On the supply side, owing to rise the MSPs, the government has become the residual buyer of all grain produced. On the demand side, the expanding grain commitments by the government under various food-based schemes, pressurise the FCI to intensify its procurement drive. Consequently, the government ends up procuring a major share of the produce offered in the market [23].

(ii) Operations of Buffer stock

The grain management cost includes acquisition cost which cover pooled cost and procurement incidentals, and distribution cost. Combining the MSP with the cost of logistics, storage, handling and distribution, the economic costs for rice and wheat are estimated at ₹37,026 and ₹27,026 per tonne respectively (Figure below). The cost of maintaining strategic stocks or buffer carrying costs is rising now a days which attributed to increase procurement incidentals (such as storage, handling, transportation and other charges), acquisition and distribution costs. In the other side, the government has cut the reserve price of rice and wheat for offloading the buffer stock. Price of both rice and wheat in the Open Market Sale Scheme (OMSS) are came down. Price of rice in OMSS is ₹22500 per tonne against ₹27850 per tonne earlier. In the same way the reserve price of wheat has also been cut down to ₹21350 per tonne against ₹22450 per tonne earlier. These reserve price for both rice and wheat were already lower to the economic cost where the price cut increased the gap further. The reduced sale price of grains for OMSS are due to the excess of buffer stock and the shortage of storages. The poor demand of grains in the open market in the recent years is also another reason of price cut. Therefore, the increasing gap between costs and revenues has strained the finances of the FCI [24] as they loss 39.2 per cent for rice and 21 per cent for wheat in OPSS. The same thing happens for international price also.

Fig 21: Economics of buffer stock operations

After elaborating the efficiency of the procurement system, it can be said that the practice of procuring more than stipulated buffer quantities lead to certain imbalances. Therefore, there is a necessity for offloading the excess stock in the international or domestic market, which could lead to a price crash. Also, it could lead to a loss when the international market prices or the FCI reserved prices are lower than the actual economic cost of the stock which is inflated by the excess expenditure on handling, logistics, storage and distribution of the produce.

4.9 Procurement policy biased against other crops

(i) Procurement against production

India has moved from a situation of scarcity of pulses during 2015-16 and witnessed unprecedented shortage and inflation due to successive droughts. The favourable monsoon and the continued enthusiasm in farmers have boosted the production and resulted the highest ever production of pulses in the country at 25.42 MT during 2018. Despite, there is an extreme bias can be noticed among the other crops than rice and wheat such as pulses and oilseeds. The tables 2 and 3 indicate the vast difference of the share of procurement of grains against the total production.

Table 2: Production Vs Procurement of Pulses

Year	Production (MT)	Procurement (% of production)
2012	17.09	0.01
2013	18.35	0.52
2014	19.26	0.26
2015	17.15	0.17
2016	16.32	0.00
2017	23.13	0.03
2018	25.42	6.37
2019	22.07	18.94
2020	23.16	6.52

Table 3: Production Vs Procurement of Rice and wheat

Year	Rice		Wheat	
	Production (LT)	Procurement (% of production)	Production (LT)	Procurement (% of production)
2015-16	1044.08	32.77	922.88	24.88
2016-17	1096.98	34.73	985.11	31.29
2017-18	1127.58	33.86	998.7	35.84
2018-19	1164.78	38.11	1035.96	32.94
2019-20	1179.39	43.25	1071.91	36.36

Source: Food Corporation of India

As of now, the only crops that see substantial procurement by the government are rice and wheat. The government is more concerned about these grains as these represent food security. Another reason of reluctance of the government for pulse procurement is its rising MSP. The MSP of pulses is almost three times of that of wheat and rice. However, whatever the reasons, pulses along with the oilseeds have been discriminated against rice and wheat and it is economically unfeasible to increase their procurement under MSP. But at this time when the demand for pulses is soaring, there is a need to build some alternate mechanisms as pulses and oilseeds are poor man's crops.

4.10 Disposal of crops

The deficient monsoon years during 2015 and 2016 resulted in sharp fall in production of pulses in the country. The government increased the MSP for pulses and stepped-up imports to control prices and also ensure stability in prices as well as provide MSP to farmers under the Price Support Scheme (PSS).

However, the disposal of a huge volumes of procured stocks of pulses under the Open Market Sale Scheme (OMSS) by Nafed faces a significant challenge,

particularly in the depressed market conditions. Since pulses are prone to infestation during prolonged storage, so the timely disposal of stocks assumes significance. The average price recovery in the disposal of PSS stocks under OMSS by Nafed has been even less than MSP (see graphic). Therefore, the market price continues to prevail at a much lower level than MSP.

Table 4: Disposal of pulses under open market sale scheme by NAFED

	Year	MSP (Rs/quintal)	Avg rate of disposal (Rs. /quintal)	Volume of OMSS Disposal (lakh tonne)	Loss % over MSP
Tur	2019	5675	3583	4.1	36.9
	2020	4875	4014	3.9	17.7
	2021	5100	4862	7.3	4.7
Moong	2019	6975	4545	3.0	34.8
	2020	7050	5949	2.1	15.6
	2021	7196	6752	0.6	6.2
Masur	2019	4475	3566	0.9	20.3
	2020	4800	4428	0.3	7.7
Urad	2019	5600	3350	2.0	40.2
	2020	5700	4875	1.5	14.5
	2021	6000	5360	1.3	10.7

The disposal of pulses procured under the PSS by Nafed has been a challenge as the federation incurs heavy losses in the open market, and sale of stocks depresses market prices. Lack of government policy for the sale of pulses stocks like wheat and rice is a major constraint for ensuring nutritional security to a large mass of people without impacting the market prices [25].

4.11 Dripping of market price

According to the assessment of Meteorological Department though normal monsoon is a sign of relief and hope for the rural economy but the crop profitability has dropped especially in pulses and oilseeds across 9 of 15 States. And the issue not related to MSP but the procurement. The key factor of falling profitability was depressed crop prices. Further, the higher procurement of rice and wheat and infrastructure issues have restricted benefits to flow for other MSP linked crops [26]. Here it is also need to be mentioned that, though the oilseed production is rebounding recently after few years of drought, the increase in production has not brought any cheer to the farmers as prices have collapsed below the MSP levels [27].

Table 5: Sale price of various crops

Crop	Average sale price
Soybean	6-15% less than MSP
Groundnut	25-40% less than MSP

Sunflower	35% less than MSP
Mustard	15-20% less than MSP

4.12 Insufficiency in production

The following graph (Fig 22) explained that the domestic production of edible oil is significantly less than the imported quantity. India produces not even produce half of its edible oil requirements, mainly due to the rainfed conditions, high seed cost, smallholding with limited resources and low seed replacement rate that resulted low productivity.

The country is able to produce only 40% out of its current requirement of 23.5 million tonnes of edible oils at the present consumption level per year from primary and secondary sources and remaining 60% is met through import. As the oilseed production of the country has not been growing impressively there is an existence of gap between the demand and supply which has necessitated sizable quantities of imports [28].

Fig 22: Import vs domestic production of edible oil

To increase the domestic availability of edible oil and reduce import dependency, the government has proposed a National Mission on Edible Oils (NMEO) to increase production as well as the consumer awareness. The country imports around 15 million tonnes of edible oil a year, forking out Rs 70,000 crore but according to the Solvent Extractors' Association (SEA), the existing refining capacity in the country is around 30 million tonnes, of which only 45% is being utilised. Therefore, government encourage import of more crude oils, facilitating better utilisation of the refining capacity of the domestic industry.

4.12 Reformation of agricultural policy

Agriculture has remained a highly regulated sector in India where the regulatory controls are imposed by both central and state governments. After independence, India pursued a policy of food self-sufficiency in staple foods of rice and wheat. The policies were initially focused on the expansion of cultivated area, introduction of land reforms, community development, and restructuring of rural credit institutions. These included input subsidies, minimum support prices, public storage, procurement and distribution of food grains, and trade protection measures. Unlike reforms in other emerging economies of the world, a series of reforms instituted in India always left its agricultural sector relatively untouched [29].

4.13 Long period of paralysis

The Indian agriculture is plagued by countless challenges such as soil degradation, climate change, declining incomes, inflation, severe socioeconomic ripple effects, underinvestment and unproductive land. Besides, social, market and economic pressures add onto their distress [30]. Interestingly, prices of the farm commodity are simultaneously rising for the consumer but the farmer is getting a rough deal [31]. During the famine situation of 1943, when the domestically produced food was not enough to quell the hunger of the country's population, India imported more food from other countries and directly feed the people without storage. It is very surprising that the acts and regulations which were put in place during that period to tackle this 'ship to mouth' situation are still being perpetuated in this era when India is self-sufficient in food production especially staple foods. There was the existence of redundancy of several acts and legislations such as Essential Commodities Act of 1940s and 1950s for stock limits, restrictions on inter-state trade, APMC Act. Also, 1990 economic liberalisation which was for industry and service and agriculture was completely ignored, Green revolution/White revolution that were mostly central government initiative. The presence of a large number of petty traders (small and feudal) and the lack of infrastructure in the sector and high cost of intermediation constrained the access of about 30-35 per cent less food grain by the consumer. Further the leakage of about 46 per cent of food grains from FCI-PDS system clearly indicated the existence of corruption in the system. Therefore, it is clear that due to certain vested interests, several much-needed reforms were hindered from being implemented in due time.

4.14 Stagnant agricultural markets

The National Agricultural Policy of 2000 stated that private sector participation will be promoted to allow accelerated technology transfer, capital inflow and assured market for crop production. However, there has not been any significant participation by the private sector in agriculture. One of the major factors is that the long pending reform of wholesale markets, that are regulated by the APMC Act. APMC charge a very high market fee, CESS and other commissions as they are controlled and regulated by state government and having the monopsonist power to regulate the market. But instead of regulating market APMC acted as a major obstacle to private investment and force the framers the farmers to sell their produce in government-controlled marketing yards. Further, the poor post-harvest infrastructure and lack of private storage led to a high rate of high wastage (35%). In other side, the crash in harvest price and sky rocketing off-season

price feeds the local politicians. Therefore, the stagnant market situation compelled the government to reform the agriculture policy towards a new dimension.

4.15 Context of new farm laws

The several Economic Surveys have expressed concern at functioning of the APMCs and sponsoring monopolies. It has observed that ensuring market efficiency may not ensure equitability. Therefore, after so many years of agriculture policy paralysis, a reform in this direction is inevitable. Focusing in this context, these legislations were designed to be the herald of a new era of market freedom that can improve the livelihoods of the deprived farmers. The new farm laws were primarily for the benefit of small and marginal farmers who constitute about 85 per cent of the total farmers and are the biggest sufferer of the regressive APMC-regulated market regime [32]. Appraising the context of new farm laws, it has contested that for several years the central government tried to prod the state governments to adopt the model agriculture acts. However, there was very little success and hence through the new farm laws, the government seeks to rectify this and build a nationwide common market, encourage private sector participation and provide freedom and choice to the farmers. As the farmers were restricted to sell the produce to the state government licensees and the barriers were also existed in free flow of agriculture produce between various states owing to the prevalence of various APMC legislations enacted by the state government, these resulted the inefficiencies and consequent loss to the farmers [32]. The new laws provide a choice to the farmers to sell their products directly sell the product to a processing factory or the private sector. The legislations provide amendment of the State APMC Acts and the Essential Commodities Act to ensure barrier-free storage and movement of agricultural commodities and also making development of agriculture marketing infrastructure as the presence of multiple intermediaries and poor infrastructure at the mandi led to the low the price realisation by the farmers.

4.16 Implication of new farm laws

The Union government enacted two new farm laws for agriculture, and modified the Essential Commodities Act 1951 for agri-food products, in September 2020. Although some stakeholders and experts have expressed serious apprehensions about the effect of these acts on the entire agriculture sector including farmers, these three acts have been widely acclaimed as historic, path-breaking, and a long overdue for agriculture. The new acts take forward the unfinished agenda of reforms started in 1991 and the fragmented, piecemeal, and patchy reforms undertaken across states to their ultimate culmination. Some people have also expressed concern about the likely dilution of role of a small number of middlemen in agricultural marketing, ignoring the benefits to crores of farmers but there are several reasons for expecting the new acts to achieve the goal of taking Indian agriculture to new heights and ushering in the transformation of the rural economy.

(i) The Farmers' Produce Trade and Commerce (Promotion and Facilitation) Ordinance, 2020 (FPTC Act)

As the covid-19 situation threw formidable challenges to the economy that needs to be addressed through bold policy decisions having the potential of converting challenges into opportunities, the FPTC Act was enacted by the Central government. Further, when the lack of transparency and the violation of APMC regulation resulted in inadequacies of the APMC market, FPTC Act creates multiple channels for farmers to sell their produce outside the APMC mandi system in trade area and legalize the transactions. It also promotes e-commerce in agriculture as well as also give a provision to prescribe modalities for the registration of traders and trade transactions in trade areas. The best part is that it allows direct purchase from farmers field and they get the opportunity to quote the price for their produce [33]. The Act ensure the level of playing field between APMC markets and operators in trade area and encourage competition between APMCs and private traders. FPTC aims to facilitate the creation of the required ecosystem for diversification at small farms and result in compressing the value chains and eliminating excessive intermediation. In many cases farmers will be able to sell their produce directly to consumers through their groups.

(ii) The Farmers (Empowerment and Protection) Agreement on Price Assurance and Farm Services Ordinance, 2020 (APAFS)

APAFS is a simplified and an improved version of the Contract Farming Act that has already been adopted by many states. The new Act removes the various compliances in contract farming provisions in various states. It is restricted to get the assured price agreed to production and provides farm services and inputs to the farmers. The new agreement is simpler than the existing contract farming practices and many clauses have been kept in favour of farmers as their decisions made in view of the expected prices of the crops during harvesting. Dairy is the best case of example of this Act. A multinational corporate giant Nestle made a very successful partnership with dairy farmers where they provide technical guidance to the farmers and supplies inputs. They created a sophisticated supply chain at a price announced every week based on the content in the milk [33].

(iii) Essential commodities (amendment) Act, 2020

The Act has been modified for the commodities such as cereals, pulses, potato, onion, edible oilseeds and oils and aims to remove fears in private investors from excessive regulatory interference in their business operations. As per the modification central government regulate the supply of the above commodities only under extraordinary circumstances including war, famine, extraordinary price rise and natural calamities [33]. It regulates stock limit, which is 100% increase in retail price of horticulture produce or 50% increase in that of non-perishable agri-food products.

The legislation can help to drive-up large-scale investment in storage capacity, logistics and modernisation of food supply chain and reduce the food wastages, violent inter-temporal and inter-state price fluctuations and price crashes. It also registers the proper know-how such as the quantity, location of the storage facilities operated by private sectors.

4.17 Pre-requisites for implementation of Acts

For the proper implementation of these Acts the FPOs, local level institutions, farmers collectives, SHGs should be encouraged to be pro-active. Along with this, the proper registration and tracking of transactions in trade area are mostly required. In order to modernise the existing mandis and strengthen the agriculture market infrastructure in the country for effective implementation of new laws, government has also been providing financial assistance through various centrally sponsored schemes. Also, towards this aim, government has taken initiative to expand eNAM (electronic National Agriculture Market) by integrating an additional 1,000 mandis to enhance farmers' access to multiple markets and buyers across the country and also to bring transparency in trade transactions with the intent to improve price discovery mechanism [34].

In such kind of a setup, the farmers, consumers and the large corporate houses will stand to gain whereas the small-scale middlemen, commission agent, state government revenues and APMC market committees will accrue a loss.

5. Way forward

From the above discussions, the it has realized that there is a need for gradual shifting of scheme from assured price to assured income. For that purpose, this paper suggests two alternatives. First one which is the alternative to MSP operation is, shift to a Price Deficiency Payment (PDP) system, where paddy and wheat could be procured under MSP up to the necessary levels to meet the PDS demands but beyond that it must be disbanded and the remaining 21 crops should be provided PDP (fig 23). The PDP system is more efficient than physical procurement.

MSP based Price Deficiency Payment Mechanism

Deficiency payment for the farmer is based on the difference between the MSP and the Model price (average market price) in the region.

Deficiency Payment= [Quantity sold] X [MSP - Model Price]
shown as the green shaded area

Deficiency payment for farmer = 20 quintal X [6000-4000]= Rs.40,000

Fig 23: MSP based Price Deficiency payment Mechanism

The other alternative is the modification of Crop insurance to income insurance scheme, the PMFBY, which needs to cover the price risk in addition to the yield risk. The AIC should be strengthened and the budget under agriculture subsidies should be pooled under this for providing income insurance (fig 24). This will prevent market distortion and assure the farmers a minimum income.

Expenditure on Major Agricultural Subsidies (Rs. Crores)

Name	Source	Year	Magnitude
Fertilizer	Union Budget	2017/18	70,000
Power	Dharmadhikari et.al (2018) based on Power Finance Corporation data	2015/16	91,000
Credit	Union Budget	2017/18	20,000
Irrigation	Central Water Commission (2017)	2013/14	17,500
Crop Insurance	Union Budget	2018/19	13,000
Price Support	Author's estimate	2014/15-2016/17	24,000
Total (without inflating to 2017/18 price levels)			2,35,500
Loan waivers	PRS Legislative Research https://www.prindia.org/policy/discussion-papers/state-state-finances-2018-19	2017/18	1,22,200

Fig 24: Expenditure on Agricultural Subsidies (Rs crore)

So, after all the discussions the paper suggests the academicians and researchers to take the responsibility of ensuring sustainability and equitability as well as achieving

market efficiency along with the intervention of government by providing some safeguard.

5.1 Policy conclusions

In India, the new farm laws are intended to opening up agricultural economy and exposing farmers to free market opportunities. On the fear of exposing to market volatility, farmers are agitating for guaranteed minimum support price. Although, MSP policy achieved its objective of providing assured prices for paddy and wheat farmers and also abundant supply of food grains, it neglected other crops like pulses, oilseeds, fruits and vegetables, resulted mass undernourishment among children and women. Under the existing MSP policy with complete focus on paddy and wheat with utter neglect of other crops, farmers of pulses and oilseeds are exposed to market vagaries and volatility, resulted in low production, low profitability and excessive dependence on imports.

Assuring MSP for all crops is not possible

On the other hand, as per the farmers demand if government guarantee MSP for all crops, it will be a gigantic task, needs huge budget allocations, support from state and local marketing boards to evolve economically feasible solutions given that the state capabilities are limited and vary. Some states like Punjab are historically in better position to procure their major crops, paddy and wheat, while some other states like Bihar and Orissa have limited capabilities. Because of this, Punjab and Haryana farmers received higher prices then and farmers in East-Indian states like Bihar over several decades.

In addition, except paddy and wheat, there was no proper procurement mechanism for the remaining 21 crops for which MSP is announced. Although under decentralised procurement system, some states are procuring pulses and oilseeds, they just cover less than 5% of the production.

India cannot depend on achieving target of doubling farmers' incomes just by procuring only paddy and wheat that too only a handful of states. The current MSP policy is hugely discriminatory against rainfed farmers who grow pulses, oilseeds, fruits and vegetables, who constitute more than 70% of the 12 crore farm families in India.

Even under ideal situations, the actual procurement at MSP cannot reach more than 20% of farmers, hence cannot be a solution to rising farmers' incomes. The actual procurement was less than 5% of market arrivals for pulses and oilseeds and even for paddy and wheat it reached only about 20-30 % farmers in 2019 crop season.

The prices of oilseeds were less than 10 to 30% in most of the markets during the recent kharif season. The biased policy also contributing to huge import of edible oils each year incurring enormous cost to Indian exchequer to the extent of Rs.70,000 crore. Whereas fruits and vegetable are entirely out of the MSP procurement policy.

In the changed scenario of surplus food production with buffer stocks exceeding 2-3 times of the normal requirement, the past biased MSP policy will do more harm than the good. Now it is time to broad base MSP policy to other crops to encourage crop diversification to contribute to not only food security but also nutritional security.

No private investments under old MSP policy

With the higher government intervention in food markets, the private corporate sector has almost avoided the sector and constitutes less than 2% of the total investments in agriculture and less than 0.5% of the total annual investments of the corporate sector in the Indian economy. Because of the no big investments by corporate sector, dominance of petty traders, there was no large investments in warehouses, cold chains, collection and aggregation centres, transport logistics in agricultural markets. This led to agricultural markets and trade is operating with huge inefficiencies and outdated technologies.

The new farm laws encourage investments and new technology

The new farm laws provide congenial long-term environment to promote free markets in which price discovery takes place based on demand and supply, hence will incentivise crop diversification to high value crops like pulses, oilseeds, fruits and vegetables. It will also encourage huge corporate investments in food processing sector both in supply chain development as well as retail sector. This will ultimately enhances farmers' incomes through backward linkages.

Modified MSP policy as price insurance

Although the new farm laws will help in encouraging much needed private investments in agricultural infrastructure like cold chains, warehouses, collection centres and aggregation centres, they cannot ensure stable and remunerative prices to farmers. Hence, there is a need for modifying the past MSP policy to safeguard the farmers from high volatility and also low prices. Although crop insurance schemes like Prime Minister Fasal Bhima Yojana (PMFBY) was in implementation, it covers only production risk with complete neglect of price risk.

Under the new farm laws, the role of the MSP policy should be altered in such a way that (i) Procurement of paddy and wheat to meets the needs of procurement for food security, (ii) Price Deficiency Payment Scheme (PDPS) for remaining 21 crops and (iii) Provide signal price for crops with fragmented markets.

To modify the MSP policy to meet the above three objectives is a balanced act, which require different operational modalities.

Procurement of paddy and wheat

The first objective of meeting the needs of procurement of food grains for Public Distribution Scheme (PDS), the existing Price Support Scheme (PSS) for paddy and wheat needs to be continued with the emphasis on decentralised procurement with more responsibility of procurement to state government agencies, cooperatives and farmer producer companies.

Under PSS only for two commodities, government is spending about Rs.2 lakh crore every year on food subsidy. To expand it to all 23 crops, some estimates indicated

that it may cost up to Rs.18 lakh crore, which is beyond the capacity of both central and state governments in terms of finances and also logistical arrangements.

Price deficiency payment for remaining 21 crops

The remaining 21 crops for which MSP is announced have to be covered under PDPS, under this, farmers are paid the difference between MSP and the modal price of the market, with no procurement and farmers are free to sell in open markets. It is most efficient method, as it eliminates all logistic costs relating to procurement, storage and offloading. It is neutral to crops and geography. It can be operational for any crop anywhere even in remotest parts of India.

The implementation of the PDPS is easy and feasible across the country, as all the necessary information for direct transfer of price deficiency payment like farmers identification, land records, bank accounts are collected under already fully functional PM-KISAN scheme. The model price of all the APMC markets is available under AGMARKNET. Only additional information needed is the quantity sold by each farmer, which can be estimated based on acreage data collected by state department of agriculture at the beginning of the season or actual submission of sale receipts.

The PDPS was implemented in the past in Madhya Pradesh under bhavantar yojana. However, there are some design problems in the scheme, where in some problems in estimation of model price leading to collusion among traders and farmers to artificially push down the model price, so that the deficiency payment will be higher. These design problems in estimating model price can be overcome by the benchmarking with international price or with past price, which is immune to manipulation.

The implementation of PDPS schemes is not dependent on the capacity of the government to procure through APMCs or any other agency, hence farmers fear of neglecting the APMC markets under new laws will be eased.

Price signal for scattered markets

The price support scheme covers paddy and wheat, while PDPS will cover the remaining 21 crops. Still there are some crops which are not covered both in PSS and PDPS, which are generally thinly produced in wide areas with fragmented markets. For these crops, estimating the model price may be difficult as there are no nation-wide markets. However, there is a scope for exploitation of these farmers by middleman due to very scattered, thin and fragmented markets, to safeguard these farmers, modified MSP policy should provide signal price, so that all market participants will adhere to the signal price in the long run in the absence of markets for price discovery.

Overall, with the implementation of new farm laws, role of MSP policy also needs to change to accommodate pro-market price insurance policy options.

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Annexure 1: Status of market reforms, 2018

States	Private Market	Direct Marketing	Contract Farming	E-trading	Consumer/ Farmer Markets	Single point of Levy of MF	Unified Licence
Chhattisgarh							
Goa							
Gujarat							
Himachal Pradesh							
Karnataka							
Maharashtra							
Mizoram							
Rajasthan							
Sikkim							
NCT of Delhi							
Jharkhand							
Uttarakhand							
Andhra Pradesh							
Telangana							
Nagaland							
Arunachal Pradesh							
Assam							
Tripura							
Punjab							
West Bengal							
Chandigarh							
Odisha							
Haryana							
Madhya Pradesh							
Uttar Pradesh							
Tamil Nadu							
Manipur	No APMC Act.						
Kerala	No APMC Act.						
A & Nicobar Islands	No APMC Act.						
Dadra & Nagar Haveli	No APMC Act.						
Daman & Diu	No APMC Act.						
Lakshadweep	No APMC Act.						
Bihar	APMC Act repealed in 2006						
Puducherry	APMC Act not reformed						
J&K	APMC Act not reformed						
Meghalaya	APMC Act not reformed						

Note: green colour indicates completed; Red colour indicates not completed

Annexure 2. Waiver of Market fee on fruits & Vegetables

S. No	State	Status
1	Assam	F& V de-notified 13.01.2014
2	Chhattisgarh	Market Fee on F & V exempted 18.11.2012
3	Haryana	Market Fee on F & V exempted 07.02.2014
4	Himachal Pradesh	Market Fee on F & V exempted (except Apple) 14.01.2014
5	Karnataka	Market Fee on F& V exempted 04.01.2014. However, user charges collected
6	Madhya Pradesh	F & V (except Banana) de-regulated outside market yard 27.01.2012
7	Meghalaya	Delisted F& V (except Potato) 15.01.2014
8	Nagaland	Market fee on F& V excepted 06. 08.2013
9	Rajasthan	Market fee on F & V reduced to 0.01 % 05.06.2013
10	West Bengal	Market fee on F& V (except potato & Onion) exempted 27.11.2014
11	NCT of Delhi	De-regulated F & V in three market areas 02.09.2014

Annexure 3. Agricultural Marketing and Farmer Friendly Reforms Index (AMFFRI)

Source: Niti Aayog, Government of India

Note: these indicators reveals easy of doing business as well as opportunities for the farmers to benefit from modern trade and commerce and have wider options for sale of his/her produce.