Comprehensive Research Study on Pattern of Farming and to Assess the Costing and Income from Cultivation of Major Crops

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Planning Department
Government of National Capital territory of Delhi

Council for Social Development
53, Lodhi Estate
New Delhi-110003

Comprehensive Research Study on Pattern of Farming and to Assess the Costing and Income from Cultivation of Major Crops in Delhi

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COUNCIL FOR SOCIAL DEVELOPMENT

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Chapter One
Introduction

1.1. The Context

The process of urbanization is increasing at a rapid pace and Delhi is no exception to it. Consequently, agricultural activities in Delhi are on a decline continuously due to fast growth in urban population. For instance, number of rural villages decreased from 214 in 1981 to 112 in 2011. Further, the percentage contribution of agriculture sector to Gross State Value Added (GSVA) of Delhi at current prices reduced from 0.94 per cent in 2011-12 to 0.38 per cent in 2020- 21 (Economic Survey of Delhi, 2020). The size of operational land holding also decreased from 73,181.68 acres during 2010-11 to 71,496.42 acres in 2015-16. Nearly 81 per cent of the farmers are marginal and small with land less than or equal to 5 acres. Only 0.58 per cent of the operational land holdings belong to large farmers with size above 25 acres. Further, the Gross Cropped Area (GCA) has come down to 85,387.9 acres in 2017-18 from 1,30,458 acres in 2000-01 (Economic Survey of Delhi, 2020). Cropping intensity[1] which was 155 in 2000-01

[1] It refers to number of crops grown on an agricultural land during one agriculture year. It is the ratio of Gross Cropped Area to net sown area multiplied by 100. Cropping intensity of index 100 suggests that one crop is grown in year and index of 200 means two crops are grown.

has also reduced to 150 in 2017-18. Thus, the overall agricultural activities have declined in Delhi over the years, mainly owing to the rapid urbanization.

Since the scale of agriculture is very low in Delhi, the sector could never draw the attention of academicians and researchers. Consequently, there is very limited research and data available on the situation of farmers in Delhi. This study aims to produce a consolidated data on conditions of farmers of Delhi. In order to examine the agricultural conditions in detail, we first look at the overall picture through secondary data. The subsequent section provides the details on cropping culture in Delhi.

1.2. Agriculture Scenario in Delhi

The cropping pattern in Delhi constitutes paddy, jowar and bajra in Kharif and wheat and mustard crops during Rabi season. Besides that, vegetables are cultivated throughout the year. The information regarding these crops grown is provided in Table 1.1.

Table 1.1: Area, Production and Yield of Major Crops in Delhi (2020-21)

Crops	Area (Acre)	Production (Kg)	Yield (Kg per acre)
Kharif Crops			
Paddy	14424.8	25200000	1746.99
Bajra	2655.25	2361000	889.18
Maize	88.92	102000	1147.10
Rabi Crops			
Wheat	47473.4	82870000	1745.61
Gram	4.94	4000	809.72
Barley	148.2	180000	1214.57
Mustard	7642.18	3902000	510.59

Source: Government of NCT Delhi, Economic Survey of Delhi (2020).

Table 1.1 shows that wheat and paddy are the major crops cultivated with 47473 acres and 14425 acres area under each respectively. Yield is the highest for paddy and wheat, followed by barley and maize.

Irrigation in Delhi majorly depends upon groundwater and partly upon surface water. Irrigation from the groundwater is provided through the shallow cavity and deep cavity state tube-wells. Whereas, surface irrigation is provided by way of utilizing treated effluent available from existing sewage treatment plants located at coronation pillar, Okhla and Keshopur. Water from the Western Yamuna Canal system under the control of Haryana Government is also utilized for irrigation purpose. Area under irrigation is reducing over the years as shown in Table 1.2.

Table 1.2: Source-wise Irrigated Area in Delhi (Area in Acres)

Years	Canals	Wells	Gross Irrigated Area
2010-11	5,535	53,703	79,759
2011-12	5,496	48,316	73,263
2012-13	5,496	48,316	73,263
2013-14	5,496	48,316	73,263
2014-15	5,496	48,316	73,263
2015-16	5,478	48,247	72,690
2016-17	5,533	48,726	73,416
2017-18	5,548	48,849	73,601
2018-19	5,523	48,498	73,194
2019-20	5,520	48,498	73,186

Source: Government of NCT Delhi, Economic Survey of Delhi (2020).

As can be seen above (Table 1.2), Gross Irrigated Area (GIA) has reduced from 79,759 acres in 2010-11 and since 2011-12 it has been consistent at around 73,196 acres. Area irrigated through wells was 53,703 acres in 2010-11 which decreased to 48,498 acres in 2019-20 with slight fluctuations over the years.

1.3. Agricultural Marketing and MSP in Delhi

There are a total of 8 Agricultural Price and Marketing Committees (APMC) in Delhi for marketing of foodgrains, fruits and vegetables, fodder and flowers. Out of these, two are more established ones where farmers sell their production of foodgrains and are operational round the year. These are the Narela Mandi and

the Najafgarh Mandi. As is clear from Table 1.1, the major production season in Delhi is the Rabi season where wheat is the crop with the highest area under cultivation. Table 1.3 gives an indication of procurement by FCI from Delhi. It can be clearly seen from the table that procurement has been abysmally low in general and has gone down to nil since 2016-17. Minimum Support Prices (henceforth, MSP), offer a big reassurance to the farmers in terms of prices they would realise for their crops even in the worst market price scenario. The fact that no procurement is being done by FCI at MSP, comes as an additional blow to the farmers.

Table 1.3: Procurement Data w.r.t. Rabi crops, Food Corporation of India, Delhi Region (Figures in MT)

Marketing Year	Narela Mandi (Shaktinagar)	Najafgarh Mandi (Mayapuri)	Food Storage Depot (FSD), Narela	Food Storage Depot (FSD), Mayapuri	Total (in MT)
2011-12	4,763	3,268	0	0	8,031
2012-13	13,624	17,071	0	0	30,695
2013-14	0	18	0	0	18
2014-15	0	0	0	0	0
2015-16	116	1,671	0	0	1,787
2016-17	0	0	0	0	0
2017-18	0	0	0	0	0
2018-19	0	0	0	0	0
2019-20	0	0	0	0	0
2020-21	0	0	0	0	0

Source: FCI, Regional Office, New Delhi

1.4. Objectives of Study

The study is undertaken with the following objectives:

i. To find out the major crops cultivated in Delhi.

ii. To assess the grade and quality of crops;

iii. To estimate the average yield of crops;

iv. To assess the main agricultural marketing channels and

v. To capture the prices realized by the farmers for Kharif and Rabi crops.

1.5. Data and Methods

Study is primarily field based with secondary data used to corroborate the findings from the field. The study undertakes primary survey of 1,000 farmers spread over 25 villages across North, North-West, South-West and West districts of Delhi. The selection of farmers was done through random sampling using snowball method. Quantitative questionnaire for farmers covers various aspects of farming from details of land holdings to procurement of inputs to production to marketing. Further, in-depth interviews were taken of 35 farmers and 15 intermediaries through semi-structured schedule to understand the challenges faced by them. It further explored the farmers' aspirations for the future. Secondary data is used from the Agricultural Census and Input Survey data of the Ministry of Agriculture, Government of India and other relevant data collected by the Directorate of Economics and Statistics, Government of India, data from the Economic Survey of the Government of NCT Delhi and data related to cost of cultivation has been used in the study to corroborate the primary survey findings and estimate costs, values and budgets for agricultural production and procurement.

1.6. Chapterisation of Study

Chapter One: Introduction

This chapter introduces the study giving an idea about agriculture in Delhi. It also discusses objectives and methodology of the study.

Chapter Two: Agricultural Situation in Delhi

This chapter looks at the situation of agriculture and farmers in Delhi using secondary data sources.

Chapter Three: Situation Assessment of Farmers: Reflections from the Field

This chapter elucidates various aspects of crop cultivation from the stage of production till marketing for Kharif and Rabi crops and price realisation by farmers.

Chapter Four: Qualitative Aspects of Farming

This chapter brings out the perspectives of farmers about agriculture in Delhi, challenges faced by them and their future expectations from the Government.

Chapter Five: Conclusion and Way Forward

The final chapter concludes the discussion.

Chapter Two

Agricultural Situation in Delhi

2.1 Agriculture Situation

Agriculture does not feature among the major occupations in the capital city. Nevertheless close to 73,000 people are involved in agriculture either as cultivators or agricultural labourers (Census, 2011) and thus, it is imperative to look into the conditions of farmers in Delhi. In the present chapter we attempt to analyse the situation of farmers and farming in Delhi by looking at the overall picture regarding the land under cultivation, sources of irrigation, soil and water quality, the major crops produced in the Kharif and Rabi seasons, the prices realised and the options available for marketing their produce.

Table 2.1 illustrates the district-wise area under agriculture in Delhi. It is seen that of the total 20,190 operational holdings, close to 38 percent are in South West district with 44 percent of the total operated area, followed by 31 percent holdings in North district comprising 25 percent of the total operated area. The average size of holdings in these two main agricultural districts are 4.1 acres and 2.9 acres respectively. Of the total cropped area in Delhi, 90 percent is irrigated while in the North-East and South districts only 70 percent and 76 percent is irrigated which is the lowest in Delhi. If we look at the source of irrigation it is seen that close to 84 percent of the irrigation is done through tube-wells and only 10

percent is through canals, which means that the agriculture in Delhi is heavily dependent on ground water.

Table 2.1: District-wise Operated Area in Delhi, 2016-17

District	Number of Holdings	Operated Area (Acre)	Average Area per Holding (Acre)	% Gross Cropped Area	
				% Irrigated	% Unirrigated
Central	427 (2.1)	1528.9 (2.2)	3.6	84.48	15.52
New Delhi	207 (1.0)	600.2 (0.9)	2.9	100.00	0.00
North	**6,191 (30.7)**	**17677.8 (25.1)**	**2.9**	**92.34**	**7.66**
North East	272 (1.3)	637.3 (0.9)	2.3	69.96	30.04
North West	**3,386 (16.8)**	**13528.2 (19.2)**	**4.0**	**98.73**	**1.27**
Shahdara	15 (0.1)	12.4 (0.02)	0.8	100.00	0.00
South	1,189 (5.9)	2692.3 (3.8)	2.3	76.00	24.00
South East	32 (0.2)	46.9 (0.1)	1.5	100.00	0.00
South West	**7,617 (37.7)**	**30951.6 (44.0)**	**4.1**	**87.04**	**12.96**
West	**854 (4.2)**	**2645.4 (3.8)**	**3.1**	**92.21**	**7.79**
TOTAL	20,190	70321	3.5	90.40	9.60

Source: Input Survey, 2016-17
Figure in parenthesis refers to percentage

Table 2.2: Number and Size of Operational Holdings in Delhi

	Marginal	Small	Semi-medium	Medium	Large
Number	28378 (55.1)	13427 (26.1)	6390 (12.4)	2986 (5.8)	299 (0.6)
Area (Acre)	12863 (18.0)	18858 (26.3)	17949 (25.1)	17076 (23.9)	4821 (6.7)
Average Size (Acre)	0.45	1.40	2.81	5.72	16.13

Source: Input Survey, 2016-17

Taking a look at Table 2.2, it is clear that marginal and small operational holdings together constitute more than 81 percent of the total operational holdings with average size of holdings among marginal being a mere 0.45 acre while that of large farms is 16.13 acre, constituting 6.7 percent of the total area.

Table 2.3 demonstrates the area and production of the major crops grown in the agricultural seasons of Kharif and Rabi. The principal crop grown is wheat which is cultivated in more than 67 percent of the total operational area producing close to 83,000 tonnes of crop. The other major crop is paddy grown

in only one-fifth of the operational area with a production close to 17,000 tonnes. To know the efficiency of crop production in Delhi, it is important to look at the yield of various crops grown here vis-à-vis the all India average.

Table 2.3: Area and Production of Major Crops Grown in Delhi

Crops	Area ('000 Acres)					Production ('000 Tonnes)				
	2015-16	**2016-17**	**2017-18**	**2018-19**	**2019-20**	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**2019-20**
Kharif Season										
Rice	14.92	14.75	14.45	14.45	14.42	17.27	17.26	16.84	16.83	16.8
Jowar	8.00	7.88	7.81	7.81	7.78	3.11	3.07	3.03	3.04	3
Bajra	3.75	3.71	3.66	3.66	3.66	3.82	3.28	3.26	3.25	3.24
Maize	0.10	0.07	0.07	0.05	0.00	0.78	0.17	0.17	0.1	0
Rabi Season										
Wheat	47.82	48.56	47.79	47.47	47.42	85.56	87.18	83.42	82.88	82.87
Barley	0.15	0.17	0.15	0.15	0.15	0.02	0.18	0.18	0.17	0.18
Rapeseed & Mustard	9.11	8.97	8.87	8.87	8.87	4.64	4.53	4.53	4.52	4.52

Source: Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare, Govt. of India

Table 2.4 illustrates the yield of paddy, bajra, wheat and mustard in Delhi and its neighbouring states. It can be seen that in case of paddy and wheat, Punjab and Haryana have yield higher than that in Delhi. The yield of all the four crops demonstrated here has either been constant at the 2015 level or declined till 2017-18 and picked up very slightly in 2018-19. However, as seen in table 1.1, the yield of paddy in 2020-21 was much improved at more than 1700 kg per acre. Apart from bajra, for none of the other crops Delhi is performing better than its neighbouring states. Since these states fall in similar agro-climatic zone as Delhi with comparable weather conditions, soil quality as well as irrigated area but still show huge variations in yields, the reasons must be further investigated. There is a need to encourage knowledge sharing among the farmers of these states for the benefit of the farming fraternity. It can be said that given due support and guidance, Delhi farmers are capable of producing a good harvest.

Table 2.4: Yield of Major Crops Grown in Delhi (Kg/ ac)

Crops	Region	2015-16	2016-17	2017-18	2018-19
Kharif Season					
Paddy	**Delhi**	1159	1170	1164	1165
	Haryana	1239	1301	1288	1264
	Punjab	1609	1619	1768	1673
	Uttar Pradesh	864	929	924	1095
	All India	971.7	1009.7	1042.9	1076.5
Bajra	**Delhi**	1017	887	889	890
	Haryana	713	817	649	837
	Punjab	NA	236	242	264
	Uttar Pradesh	737	775	785	821
	All India	458.3	528.3	498.4	503.2
Rabi Season					
Wheat	**Delhi**	1789	1795	1745	1746
	Haryana	1784	1828	1786	1994
	Punjab	1855	1904	2055	2100
	Uttar Pradesh	1067	1260	1323	1389
	All India	1228.3	1295.5	1363.6	1419.8
Rapeseed & Mustard	**Delhi**	510	505	510	511
	Haryana	645	750	817	833
	Punjab	546	572	606	617
	Uttar Pradesh	412	504	564	600
	All India	826.3	861.9	904.9	930.8

Source: Agricultural Statistics at a Glance, 2020

2.2 Agriculture Credit and Crop Insurance

Institutional credit plays a crucial role in promoting agricultural growth. Indian farmers require credit to meet their short term needs viz., purchasing seeds, fertilizers, paying wages to hired workers etc. for a period of less than 15 months. Such loans are generally repaid after harvest and are called short term credit. Medium term credit includes credit requirement of farmers for a period ranging between 15 months and 5 years and it is required for purchasing cattle, pumping sets, other agricultural implements. Farmers also require finance for a long period of more than 5 years for purposes such as buying additional land or for making any permanent improvement on land like sinking of wells, reclamation of land, horticulture etc. This type of loan is called long term credit. Table 2.5 shows institutional credit taken for agricultural purposes by size groups. The total loan here comprises only of the short-term loan as there were no

entries for the medium-term and long-term loans. Out of the 20,000 operational holdings, only 30 percent have accessed institutional credit. The average credit availed by marginal farm category is over Rs. 1 lakh while that by medium size farms is nearly Rs. 66,000.

Table 2.5: Institutional Credit Taken for Agricultural Purposes by Size-Groups (2016-17)

Size Class (1)	Total No. of Operational Holdings ('000) (2)	Estimated No. of Operational Holdings that took Institutional Credit ('000) (3)	Total Loans (Rs '000) (4)	Credit/ Operational Holding (Rs.) (5)=(Column 4/ column 3)	% Share of Loans (6)
Marginal (less than 1 ha)	11	2	221580	110790	39.60
Small (1 ha – 1.99 ha)	5	2	163735	81868	29.26
Semi-medium (2 ha – 3.99 ha)	2	1	101498	101498	18.14
Medium	1	1	65807	65807	11.76
Large	Neg	Neg	6919		1.24
All Groups	20	6	559540	93257	100.00

Source: Input Survey, 2016-17

Table 2.6 illustrates the agricultural crop loan as well as term loan disbursed in Delhi according to the Department of Agriculture, Cooperation & Farmers Welfare. As per the table, crop loan constitutes only 3.4 percent of the total credit disbursed while 96.5 percent is term loan. Considering that 87 percent of the cultivators operate on less than 10 acres of land, the percentage of credit going towards long term loan seems disproportionately high. The crop loan comes to Rs. 4.84 lakh per account and term loan is Rs. 54.62 lakh per account. There is a need to look into this so as to ensure that the facility is availed where it is due and avoid the misuse of such an important policy measure.

Table 2.6: Agricultural Loan Disbursed in 2018-19 (in Rs. Lakh)

Crop Loan		Term Loan		Total	
No. of A/c s	Amount Disbursed	No. of A/c s	Amount Disbursed	No. of A/c s	Amount Disbursed
15583 (29)	75459.0 (3.4)	38226 (71)	2087792.0 (96.5)	53806	2163250.0

Source: Agricultural Statistics at a Glance, 2020
Figures in parenthesis refers to percentage of total

One of the important schemes initiated by the central Government in 1998 was the Kisan Credit Card (KCC) which enables farmers to take credit at easy and low interest rates. Table 2.7 depicts the KCC situation in Delhi. It can be seen that Commercial Banks have issued the most cards while Regional Rural Banks (RRBs) seem non-operational in the capital city. A total of 49,000 cards have been issued in Delhi in 21 years since it was introduced. This number is far higher than the number of land holdings and raises concerns on whether there are multiple cards for a single landholding.

Table 2.7: Agency-wise KCCs - Cumulative Cards Issued and Amount Outstanding as on 31 March 2019 in Delhi (Amount in Rs. Crore and Number in Lakhs)

Commercial Banks		Cooperative Banks		RRBs		Total	
Cards Issued Since Inception	Amount Outstanding Under Operative KCCs	Cards Issued Since Inception	Amount Outstanding Under Operative KCCs	Cards Issued Since Inception	Amount Outstanding Under Operative KCCs	Cards Issued Since Inception	Amount Outstanding Under Operative KCCs
0.46	48.78	0.03	10.90	0.00	0.00	0.49	59.68

Source: Agricultural Statistics at a Glance, 2019

Another crucial policy measure for the farmers is crop insurance. Crop insurance makes up for the loss or damage to growing crops resulting from causes like hail or drought frost, flood and disease. The Pradhan Mantri Fasal Bima Yojana (PMFBY) gives insurance protection to all crops notified by the state government. It offers a uniform maximum premium for all farmers, namely, Kharif

season 2 per cent of sum insured and Rabi Season 1.5 per cent of sum insured. It can be seen from Table 2.8 that no crop insurance has been availed in the Total Sown Area of 1.43 lakh acres. With climate change affecting the crop production every year, it is important to make the farmers aware of such services so as to protect farmers from the unforeseen losses.

Table 2.8: Crop Area Insured under all Insurance Schemes, in Delhi (2018-19) (Area in lakh Acres)

	2015-16		2016-17		2017-18		2018-19	
Gross Area Sown	Area Insured	% of Area Insured	Area Insured	% of Area Insured	Area Insured	% of Area Insured	Area Insured	% of Area Insured
1.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Source: Agricultural Statistics at a Glance, 2020

Soil Health Card Scheme launched by the Government in 2015 is an additional policy for the farmers that helps them get their soil tested which in turn helps them decide on which crop to grow, how much fertilisers and manure to use to help improve productivity through judicious use of inputs. It is seen that out of the cumulative target for Soil Samples Collection & Testing during Cycle-II (2017-18 & 2018-19) of 1600 samples, only 860 have been collected and tested and Soil Health Cards (SHCs) have been distributed till 2018-19. It is important to rigorously follow-up with these schemes so that it reaches the targeted beneficiaries.

Table 2.9: Status of Soil Health Card Scheme -Cycle -2 (2017-19)

Cumulative Target for Soil Samples Collection & Testing during Cycle-II (2017-18 & 2018-19)	No. of Samples Collected	No. of Samples Tested	Cumulative Target for Printing & Distribution of SHCs for Cycle-II (2017-18 & 2018-19)	No. of SHCs Distributed
1600	860	860	1600	860

Source: Agricultural Statistics at a Glance, 2019

2.3 Minimum Support Prices (MSP)

MSPs incentivize the cultivators to adopt modern technology and increase productivity of crops. Assuring stable and remunerative environment is very important in agricultural goods markets which are unstable and unpredictable. MSPs for major crops are fixed by the Government after taking recommendations from the Commission for Agricultural Costs & Prices (CACP). Currently, CACP recommends MSP for 23 commodities including 7 cereals (paddy, wheat, maize, sorghum, pearl millet, barley and ragi), 5 pulses (gram, tur, moong, urad, lentil), 7 oilseeds (groundnut, rapeseed-mustard, soyabean, seasmum, sunflower, safflower, nigerseed), and 4 commercial crops (copra, sugarcane, cotton and raw jute).

CACP submits its recommendations to the Government in the form of Price Policy Reports every year separately for five groups of commodities namely Kharif crops, Rabi crops, Sugarcane, Raw Jute and Copra. For calculating MSPs, the Commission draws a comprehensive questionnaire, and also consults state Governments, national organisations like FCI, NAFED, Cotton Corporation of India (CCI), Jute Corporation of India (JCI), key ministries, trader's organizations, and processing organizations. Visits are also made by the Commission to states for on-the-spot assessment of various challenges faced by the farmers in marketing their produce, or even increasing the productivity levels of their crops. Based on all these inputs, the Commission then finalizes its recommendations for the prices and submits the report to the Government. The Cabinet Committee on Economic Affairs (CCEA) of the Union Government takes a final decision on the level of MSPs and other recommendations made by CACP.

Calculation of MSP

While recommending price policy of various commodities under its mandate, the Commission keeps in mind the various Terms of Reference (ToR) given to CACP in 2009 which are:

1) demand and supply;

2) cost of production;

3) price trends in the market, both domestic and international;

4) inter-crop price parity;

5) terms of trade between agriculture and non-agricultural sectors;

6) a minimum of 50 percent as the margin over cost of production; and

7) likely implications of MSPs on consumers of that product.

The National Commission on Farmers (NCF) chaired by Prof. M S Swaminathan was constituted in 2004 that suggested ways to increase productivity, profitability, and sustainability of the major farming systems in India. For the calculation of MSP, the committee recommended 50 per cent above Cost C2.

Cost C2 is calculated as sum of paid out costs (Cost A1), imputed value of family labour, interest on the value of owned capital assets, rent paid for leased-in land and the rental value of owned land.

Further, Cost A1= value of hired human labour + value of hired bullock labour+ value of bullock labour+ value of owned machinery labour+ hired machinery charges + value of seed (both farm produced and purchased) + value of insecticides and pesticides + value of manure + value of fertiliser+ Depreciation on farm machinery and buildings+ irrigation charges+ land revenue, cess and other taxes+ interest on working capital + misc. expenses

Even though the recommendations of the Swaminathan Committee came in 2004, even after 17 years it awaits implementation.

2.4 System of Procurement at MSP by Government Agencies

The Central Government extends price support to wheat and paddy through FCI and State Agencies. Procurement at MSP is open ended i.e., whatever foodgrains are offered by the farmers, within the stipulated procurement period and which conforms to the quality specifications prescribed by Government of India, are purchased at MSP (and bonus/incentive, if any) by the Government

agencies including FCI for central Pool. Some States also declare State bonus on wheat and paddy over and above MSP.

Government agencies undertake MSP operation at mandis/ temporary purchase centres/aggregation points. Location and number of purchase centres to be opened are decided in consultation with/ by the State governments.

Systems of procurement:

- **Wheat -** FCI undertakes procurement directly and jointly with State Government Agencies (SGAs) in non DCP states. In the major procuring states like Punjab, Madhya Pradesh and Haryana, wheat is mainly procured by state agencies and they preserve the stocks under their custody for which carry –over charges are paid to them. FCI takes over the stocks for dispatching to other consuming states as per requirement /movement plan. Payments are made to State Govt. /agencies as per Provisional cost sheets issued by GOI after taking over the stocks. In the states like UP and Rajasthan, the wheat procured by state agencies is immediately taken over by FCI.

  In Decentralized Procurement (DCP) states like Madhya Pradesh, SGAs procure, store and distribute wheat (against Government of India's allocation for TPDS/OWS etc) within the state. The excess stocks (wheat) procured by the State /its agencies are handed over to FCI in Central Pool for distribution/movement to deficit States.

- **Rice-** Custom Milled Rice (CMR) is manufactured by milling paddy procured by State govt. /State agencies and FCI. In the states like Andhra Pradesh, Telangana, Punjab, Haryana, Chhattisgarh, Odisha, Madhya Pradesh, Tamil Nadu, Maharashtra, Uttar Pradesh & Bihar, paddy is mainly procured by State government/ State agencies and the resultant rice is delivered to State Government and FCI by getting the paddy milled from rice millers.

Major responsibility of procurement of wheat and paddy is borne by the State agencies whereas FCI procures almost 70% of total rice procured for Central Pool.

In wheat and paddy procuring States like Punjab, Haryana & some parts Rajasthan procurement from farmers is undertaken by the FCI/State Agencies through *arthiyas* as per State APMC Act. In other States procurement of wheat and paddy is made directly from farmers by FCI/ State Govt Agencies

Centralized and Decentralized procurement systems:

a) Centralized (Non-DCP) procurement system:

Under centralized procurement system, the procurement of foodgrains in Central Pool is undertaken either by FCI directly or by SGA. Quantity procured by SGAs is handed over to FCI for storage and subsequent issue against GOI allocations in the same State or movement of surplus stocks to other States. The cost of the foodgrains procured by State agencies is reimbursed by FCI as per Provisional per cost-sheet issued by GOI as soon as the stocks are delivered to FCI.

b) Decentralized (DCP) Procurement

Under DCP system, the State Government/ its agencies procure, store and distribute (against Government of India's allocation for TPDS & OWS etc) rice /wheat/coarse grains within the state. The excess stocks (rice & wheat) procured by the State and its agencies are handed over to FCI in Central Pool. The expenditure incurred by the State Government on procurement, storage and distribution of DCP stocks are reimbursed by Government of India on the laid down principles. The expenses such as MSP, *arhatiya*/society commission, administrative charges, mandi labour charges, transportation charges, custody & maintenance charges, interest charges, gunny cost, milling charges and statutory taxes are reimbursed on actual basis. The cost of excess stocks

handed over to FCI is reimbursed by FCI to the State Government/agencies as per Government of India costs sheet.

As per the latest data[2] the following states are procuring rice/wheat under DCP system (Tables 2.9 and 2.10).

Table 2.9: De-Centralised Procurement States for Rice

S.N.	State	With Effect From
1	Uttarakhand	2002-03
2	Chhattisgarh	2001-02
3	Odisha	2003-04
4	Tamil Nadu	2002-03
5	West Bengal	1997-98
6	Kerala	2004-05
7	Karnataka	2009-10
8	Madhya Pradesh	2007-08
9	Andhra Pradesh	Fully DCP for KMS 2015-16.
10	Bihar	2013-14
11.	Telangana	Fully DCP from KMS 2014-15.
12.	Maharashtra	2016-17
13.	Gujarat	2017-18
14.	Andaman Nicobar	2003-04
15.	Tripura	KMS 2018-19 & 2019-20 (Rabi Crop) and KMS 2020-21

Table 2.10: De-centralised Procurement States for Wheat

S.N.	State	With Effect From
1	Madhya Pradesh	1999-2000
2	Uttarakhand	2003-04
3	Chhattisgarh	2001-02
4	Gujarat	2004-05
5	West Bengal	2010-11
6	Bihar	2014-15
7	Maharashtra	2020-21
8	Punjab	2014-15

[2] https://fci.gov.in/procurements.php?view=86
Accessed on 24th October, 2021

As seen in the previous chapter, there has been no procurement by the FCI in Delhi since 2015-16. Table 2.11 illustrates the Farm Harvest Prices (FHP) of major crop produces in Delhi in 2016-17 and the MSP of those crops in the same year. Apart from wheat, the weighted average of FHP of all other crops is much higher than the MSP. It is important to note that the majority of the farmers do not have storage facilities and thus, sell off their produce as and when harvested. Hence, the high farm gate prices are not for most farmers and due to non-procurement by FCI or any other Government agency, the farmers lose out on even the MSP and sell at lower prices.

Table 2.11: Crop-wise Weighted Average* of Farm Harvest Prices of Principal Crops in Delhi (Rs per Kg)

Crops	2014-15	2015-16	2016-17	MSP (2016-17)
Bajra	15.00	16.50	16.50	13.30
Barley	-	14.50	15.00	13.25
Gram	31.75	50.00	55.00	40.00
Maize	16.50	17.20	15.44	13.65
Paddy	20.00	14.50	25.00	14.70
Rapeseed/Mustard	46.43	-	-	37.00
Wheat	14.50	15.25	16.25	16.25

Source: Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare, Govt. of India

In the next chapter, we analyse the farm-level data based on interviews with 1000 farmers in Delhi

Chapter Three

Situation Assessment of Farmers : Reflections from the Field

Having looked at the situation of agriculture in Delhi, this chapter attempts to assess the situation of the farming community in the capital city. For this purpose a primary field survey was carried out among 1000 farmers in 25 villages belonging to the various districts of Delhi through a pre-designed questionnaire. An attempt has been made to understand the land situation in Delhi, the cropping patterns, marketing channels and the responsiveness and awareness of farmers towards the different Government policies.

3.1. Household Characteristics

Table 3.1 gives the sample-size of the study from the various agricultural pockets of the otherwise urbanized city. Out of the 11 districts of Delhi, 5 districts were purposively chosen for the study due to the larger proportion of farmers in these districts.

Table 3.1: Sample Villages and Households in Delhi

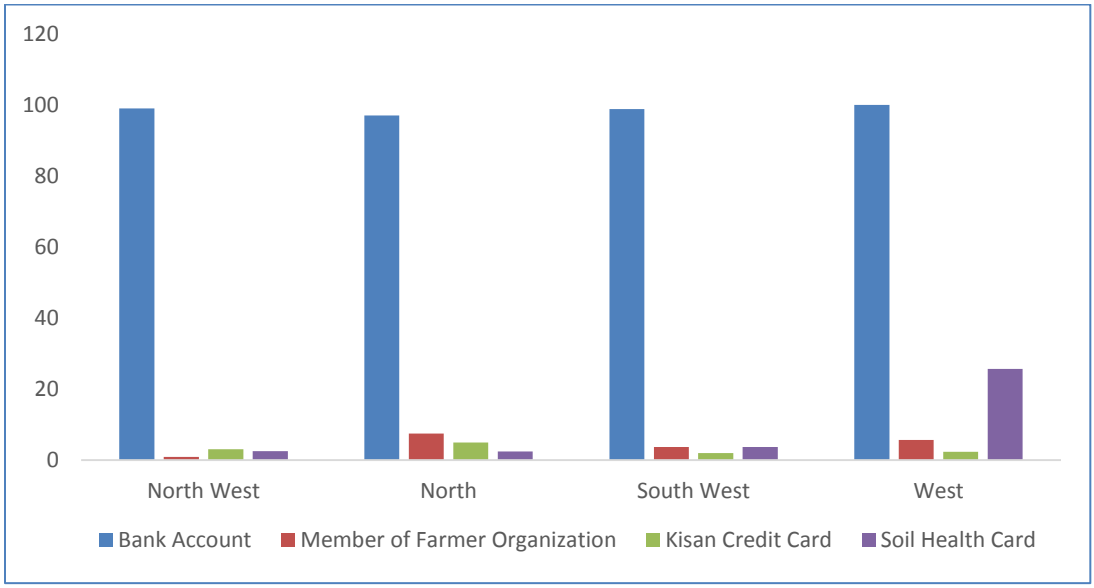
S. No.	District	Sub District/ Tehsil	Name of Village	No. of Sample Households
1	**North**	**Alipur**	Burari	40
2	**North West**	**Kanjhawala**	Ladhpur	43
3			Nijampur Rasidpur	40
4		**Narela**	Bakhtawar Pur	41
5			Bazidpur Thakran	40
6			Darya Pur Kalan	40
7			Hiranki	40
8			Jhangola	40
9			Lampur	41
10			Tajpur Kalan	40
11		**Saraswati Vihar**	Jatkhor	40
12			Jonti	40
13			Madanpur Dabas	40
14			Qutubgarh	40
15	**South West**	**Najafgarh**	Dhichaon Kalan	40
16			Isa Pur	40
17			Jharoda Kalan	40
18			Kanganheri	40
19			Khera Dabar	40
20			Mundhela Khurd	36
21			Paprawat	40
22			Raota	40
23			Shikarpur	40
24			Ujwa	40
25	**West**	**Punjabi Bagh**	Tikri Kalan	39
	Total Sample Households			1000

Source: Farm level survey 2021, CSD.

As discussed in the previous chapter, a number of facilities and policies have been introduced for farmers from time to time. Here we see if the facilities like banks, Kisan Credit Cards, Soil Health Cards, crop insurance etc have actually reached the target farmers. Close to 100 percent of the interviewed farmers across the 4 districts said that they had bank accounts. The Delhi farmers do not seem to be associated with any farmers organizations and very few availed the facility of Kisan Credit Cards. Moreover, as seen in the previous chapter, the number of KCCs issued are much higher than the number of operational holdings. Thus it is imperative to see who have actually been issued the KCCs since even the field survey of farmers does not corroborate with the high

number of cards in the government data sources. As for the Soil Health Cards, 26 percent of the farmers in West Delhi said they had SHC while in all other districts less than 5 percent of the farmers had such a card (Figure 3.1).

Figure 3.1: District-wise Percentage of Sample Farmers Availing Following Services



Source: Farm level survey 2021, CSD

3.2. Awareness among the Farmers

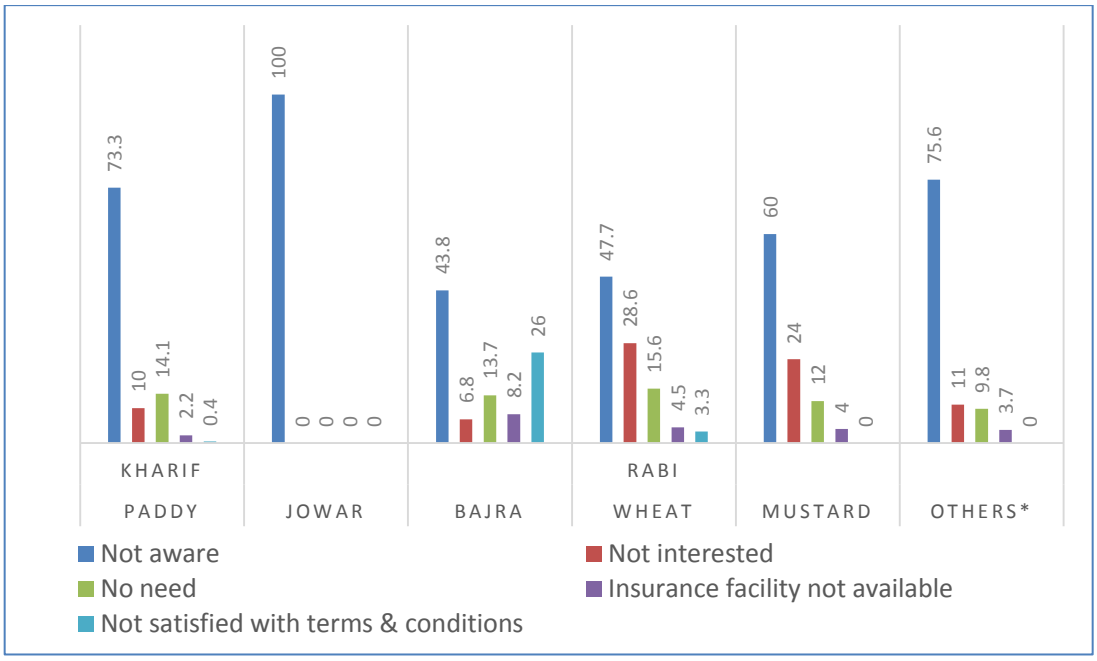
Looking at the situation of crop insurance among the farmers for the different crops grown, more than 95 percent of the farmers did not insure any of the crops. The main reason for not taking crop insurance was that the farmers were not aware of the availability of such a facility. It is important to generate awareness about such important policies which can safeguard the farmers from losses in crop production (Table 3.2 and Figure 3.2).

Table 3.2: Percentage of Farmers Insuring Crops

Crop	Insured only when received Loan	Insured additionally	Not insured
Kharif Crops			
Paddy	0.4	0	99.6
Jowar	0	0	100
Bajra	1.4	2.7	95.9
Rabi Crops			
Wheat	0.5	1.8	97.7
Mustard	0	12	88
Others*	0	2.4	97.6

*Source: Farm level survey 2021, CSD; *Others constitute various vegetables*

Figure 3.2: Reasons for Not Insuring Crops (%)



Source: Farm level survey 2021, CSD; Others constitute various vegetables*

One of the most important policies by the Government has been the announcement of MSPs of various crops, the purpose of which is to provide a base price to the farmers to cover their cost of production and protect the farmers from suffering losses due to fall in market prices. It is important to know whether the farmers are aware of the MSPs of different crops and whether they avail this important facility. Table 3.3 shows that close to 60 percent of the

respondents knew the prevailing MSP for wheat and paddy, for bajra and mustard the awareness was among less than 30 percent of the farmers and jowar, which is basically a fodder crop which is for self-consumption, the awareness about its MSP was almost nil. Awareness regarding the recommendations of the M.S. Swaminathan Committee for MSP calculation was only 11.6 percent. On explaining the formula for calculation, 84 percent of the farmers agreed that Delhi government must implement the recommendations as it will incentivise the farmer to continue farming.

Table 3.3: Awareness Regarding MSP of Various Crops and Swaminathan Committee Recommendations (%)

	Awareness Regarding MSP of Various Crops		Awareness Regarding Swaminathan Committee recommendations		
Crops	% Aware	% Not Aware	% Aware	% Not Aware	% Agreeing for Delhi Govt. to Implement
Wheat	60.13	39.87	11.6	88.4	83.7
Paddy	56.37	43.63			
Jowar	1.78	98.22			
Bajra	26.67	73.33			
Mustard	21.74	78.26			

Source: Farm level survey 2021, CSD

From Tables 3.4 and 3.5, it can be seen that as per the survey, on an average, more than 90 percent of the farmers in Delhi were not aware about the agency that procures the produce at MSP and almost 100 percent denied selling their produce at MSP to any of the procurement agencies (Table 3.5). However in West district of Delhi, 43 percent of the sample households claimed that Delhi State Civil Supplies Corporation (DSCSC) is the agency responsible for procuring crops at MSP. However, it must be noted that at present, DSCSC is not a procurement agency rather it is responsible for supplying foodgrains to godowns for the public distribution system under the National Food Security Act.

Table 3.4: Awareness Regarding Agency Procuring the Crop (%)

District	FCI	NAFED	State Food & Supply Dept	Delhi State Civil Supplies Corporation	Not Aware
North	2.5	7.5	0.0	0.0	90.0
North West	2.0	1.6	0.2	0.5	95.7
South West	0.5	0.7	0.0	0.0	98.8
West	0.0	2.9	0.0	42.9	54.3
Overall	1.3	1.5	0.1	2.0	95.1

Source: Farm level survey 2021, CSD

Table 3.5: Farmers Selling Produce to Various Procurement Agencies (%)

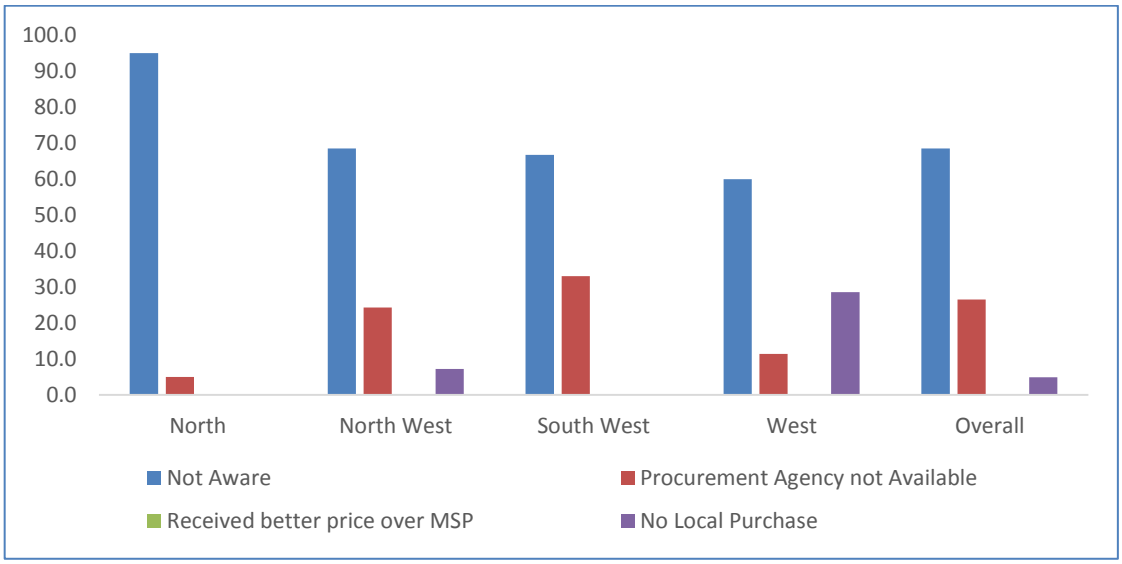
District	FCI	NAFED	Others	No	Not Aware
North	0.0	0.0	0.0	100.0	0.0
North West	0.5	0.2	2.6	96.4	0.4
South West	0.0	0.0	0.7	96.5	2.7
West	0.0	0.0	5.7	94.3	0.0
Overall	0.3	0.1	1.9	96.5	1.3

Source: Farm level survey 2021, CSD

*Others**: State Food & Supply Department and Delhi State Civil Supplies Corporation*

From the figure 3.3, it can be observed that the major reason for farmers not selling at MSP was that majority of the farmers were not aware of MSP (67.9 per cent) and of those who were aware; the reason for not selling was that no local purchase (21.3 per cent) and no procurement agency (5.4 per cent) was available to buy their produce at MSP.

Figure 3.3: Reasons for Not Selling to any of the Government Procurement Agencies (%)



Source: Farm level survey 2021, CSD

Additionally, the Government and the department of agriculture provides assistance in giving technical advice to the farmers with respect to the cultivation in terms of improved seed varieties, fertiliser application in different crops, plant protection inputs such as pesticides, farm machinery to be used and the harvesting and marketing of different crops. The advice is from Government sources such as Government Extension Agents (ATMA), Krishi Vigyan Kendras (KVKs), agricultural universities and Agri-clinics and Agri Business Centres (ACABC) etc. and various private sources such as input dealers, private processors, Farmers Producers Organizations (FPOs) and fellow farmers. It was noted through the survey that more than 85 percent of the farmers took technical advice from their fellow progressive farmers and it was largely regarding the variety of seeds to be used and also about the fertilisers to be used. The Government agencies do not seem to have a proper reach to the farmers of Delhi.

In the following section we look in detail at the land particulars and land use pattern of farmers in different districts for the two agricultural seasons; Rabi

season, Jan-Jun, 2021 and Kharif season, Jul-Dec, 2020. We study the crops grown, per unit cost of production and the value output and the prices realised.

3.3. Rabi Season (Jan-June, 2020)

3.3.1 Land Particulars in Rabi Season

Table 3.6 illustrates the total operational holdings by type of land, that is owned, leased in or leased out. The total area under cultivation among the sample collected is 4454 acres and the average size of operational holding is 4.3 acres. It is to be noted that the land leased-in is not recorded in majority of the cases.

Table 3.6: Total Operational Holdings in Rabi Season (Acres)

Districts	Owned (1)	Land leased-in (recorded) (2)	Land leased-in (Not recorded) (3)	Land Otherwise possessed (4)	Land Leased-out (5)	Total Operational Holdings (6)=(1+2+3+4)-5	Average Operational Holdings[3] =column 6/ (sample households)
North	154.9	-	10	-	-	164.9	3.9
North West	2173.7	51	504.5	4	2	2731.2	5.2
South West	1277.99	103	82	1		1463.99	3.5
West	94.1					94.1	2.5
Total	3700.69	154	596.5	5	2	4454.19	4.3

Source: Farm level survey 2021, CSD

Further, it can be seen from Table 3.7 that more than 90 percent of the area is under cereal cultivation during the Rabi season for all districts except West, where the cereal production is on 75 per cent of the operational holdings.

[3] Average Operational Holdings is calculated as the Total Operational Holdings in a district (as per the sample) divided by the total sample households

Table 3.7: Major Types of Crops Grown in Rabi Season (%)

Districts	Cereals	Pulses	Condiments and Spices	Fruits	Vegetables	Other foodcrops	Oilseeds	Fodder crops
North	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
North West	97.2	0.2	1.0	0.9	0.0	0.4	0.0	0.2
South West	94.0	0.3	0.0	0.5	0.3	4.4	0.5	0.0
West	80.0	0.0	0.0	0.0	0.0	20.0	0.0	0.0

Source: Farm level survey 2021, CSD

It is apparent from Table 3.8 that the major source of irrigation in Delhi is ground water (96.9 per cent). South West is the only district where 5 percent of households claimed to be using canals for irrigation purposes.

Table 3.8: Percentage of Households by Source of Irrigation

Districts	Major Source of Irrigation			
	Canal	Minor Surface Works (pond, tank)	Ground water (tube well, well)	Others
North	-	-	97.62	2.38
North West	-	0.23	100.00	-
South West	5.26	1.64	93.09	-
West	-	-	100.00	-
Total	2.15	0.81	96.90	0.13

Source: Farm level survey 2021, CSD

3.3.2 Value of Output in Rabi Season

Table 3.9 shows the average area under each crop in the Rabi season, its production and yield per acre. In the Rabi season, wheat is the major crop grown followed by mustard. Average area under wheat is 4.2 acres and under mustard in 3.5 acres. Average yield of wheat is 1826 kg per acre and that of mustard is 813 kg per acre.

Table 3.9: Average Area, Production and Yield of Various Crops

Crops	Total area (Acres) (1)	Total production (Kg) (2)	No of farmers (3)	Average Area (Acres) (4)=1/3	Average Quantity (Kg) (5)=2/3	Yield (Kg/ Ac) (6)=2/1
Wheat	3967.15	7282173	948	4.2	7681.6	1826
Mustard	104.7	85089	30	3.5	3916.7	813

Source: Farm level survey 2021, CSD

From Table 3.10, it can be seen that apart from what is kept for self-consumption, the majority of the produce of all crops is sold either in local market or in APMC markets. Almost none is being sold to Government agencies. For instance, nearly 80 per cent of the wheat is sold to APMCs and local traders. And 19 per cent is kept for self-consumption and only 0.43 per cent is sold to the Government.

Table 3.10: Percentage of Crops sold to Various Agencies

Crops	Local market/ local traders	APMC market	Input dealers	Cooperative	Government agencies	Private processors/ Companies	Others***
Wheat	22.46	57.43	0.43	0.11	0.43	0.22	19.00
Mustard	24.14	51.72	0.00	0.00	0.00	0.00	24.14

Source: Farm level survey 2021, CSD

*Others*** includes self-consumption*

Table 3.11 illustrates the average value of output per acre of the different crops grown in the Rabi season. Total value of products includes the value of pre-harvested produce (in cases of contract farming), the total value of harvested produce (which includes the value of the output used for self-consumption) and the value of by-products such as straw, fodder etc. It is seen that the rates realised for the crops sold are Rs. 17/kg for wheat and Rs. 42/kg for mustard. 'Other' crops includes vegetables grown in the Rabi season. On enquiring whether the farmers are satisfied with the value realised for their crops, close to

40 percent of the wheat farmers said that the prices they received were much lower than the market prices. Similarly, 30 percent of the mustard farmers (which is the next most important Rabi crop) felt that the value of output they received was not satisfactory.

Table 3.11: Average Value of Total Output per Acre in Rabi Season (Rs.)

Crops	Wheat	Mustard
Sample Households	948	30
Total Cultivated Area as per sample (Acre)	3967.15	104.7
Average Quantity sold (Kg/acre)	1616	1048
Average Sale value (Rs./ acre)	22562	34791
Selling Rate* (Rs./ kg)	17	42
Average Value of harvested produce (Rs. /acre)	31474	37555
Average Value of by-products (Rs. / acre)	4535	2202
Average Value (Rs./ acre)	36,318	39,757

Source: Farm level survey 2021, CSD

3.3.3 Cost of Cultivation in Rabi Season

There are a number of inputs used in cultivation of various crops. The inputs range from cultivable land to seeds, fertilisers (chemical and bio), manures, pesticides (chemical and bio), diesel, electricity, irrigation, labour (own as well as hired), machinery like tractor, harvester etc. (own or hired) and many more. There are government shops as well as private from where most of these inputs are procured. Table 3.12 gives the details of source of procurement of the various inputs in the different districts studied. In case of seeds, more than 70 percent of the farmers in North, North-West and South-West Delhi procured seeds from input dealers while in West Delhi only 25 percent procured from input dealers. In West Delhi, for 53 percent of the farmers, the preferred place to purchase seeds was from private shops in the APMC market. In South-West and West Delhi, more than 20 percent farmers also said to have purchased seeds from the local market.

Moving to chemical fertilisers, in all the districts the preferred source for majority of the farmers was input dealers. Nevertheless, 23 percent and 34 percent

farmers in South-West and West Delhi respectively, claimed to have purchased chemical fertilisers from local market. In all the districts, only a small percentage of farmers (3 percent) from North Delhi said that they purchased chemical fertilisers from government agencies.

As for bio-fertilisers, only farmers from North and South-West Delhi said to have used bio-fertilisers in their crop production with 100 percent of farmers in North Delhi purchasing from input dealers while 70 percent in South West Delhi purchased it from local market and only 5 percent from input dealers.

Manure, which is, most of the times, the dung of livestock, was from own sources for majority of the farmers in North and North-West Delhi while in South-West Delhi 50 percent of the farmers said to have purchased manure from input dealers.

Chemical pesticides were purchased by close to 100 percent of the farmers in North, South-West and West Delhi while in North West Delhi it was procured from input dealers, APMC Market as well a small proportion of 8.2 percent from local market.

Lastly, the procurement of bio-pesticides was done from input dealers by 100 percent of the farmers in all the districts except South-West Delhi where 67 percent farmers purchased from local market while the rest from input dealers.

It can be safely said that the farmers' preferred source of procurement of various inputs is either input dealers, local market or APMC market and almost no farmer said to have purchased inputs from government agencies.

Table 3.12: District-wise Source of Procurement of Various Inputs in Rabi Season

Inputs	Source of Procurement	North	North West	South West	West
Seeds	Local Market	-	4	24	22
	APMC Market	-	15	4	53
	Input Dealers	100	89	70	25
	Co-operative	-	-	-	-
	Government agencies	-	-	-	-
	Farmer Producer Organisation	-	-	-	-
	Private Processors	-	-	-	-
	Contract Farming Sponsors/ Companies	-	-	-	-
	Other	-	-	-	-
Chemical Fertilisers	Local Market	-	2	23	34
	APMC Market	-	13	4	-
	Input Dealers	98	89	71	66
	Co-operative	-	-	-	-
	Government agencies	3	-	-	-
	Farmer Producer Organisation	-	0	-	-
	Private Processors	-	1	-	-
	Contract Farming Sponsors/ Companies	-	-	-	-
	Other	-	-	3	-
Bio-fertilisers	Local Market	-	-	70	-
	APMC Market	-	-	15	-
	Input Dealers	100.0	-	5	-
	Co-operative	-	-	-	-
	Government agencies	-	-	-	-
	Farmer Producer Organisation	-	-	-	-
	Private Processors	-	-	-	-
	Contract Farming Sponsors/ Companies	-	-	-	-
	Other	-	-	10	100
Manures	Local Market	-	-	17	-
	APMC Market	-	-	-	-
	Input Dealers	-	-	50	-
	Co-operative	-	-	-	-
	Government agencies	-	-	-	-
	Farmer Producer Organisation	-	-	-	-
	Private Processors	35.77	26	-	-
	Contract Farming Sponsors/ Companies	-	-	-	-
	Other/ Own	64.33	79	33	-
Chemical Pesticides	Local Market	-	8	2	-
	APMC Market	-	43	-	-
	Input Dealers	100.0	69	96	100
	Co-operative	-	-	-	-

	Government agencies	-	-	-	-
	Farmer Producer Organisation	-	-	-	-
	Private Processors	-	-	-	-
	Contract Farming Sponsors/ Companies	-	-	-	-
	Other	-	-	2	-
Bio-Pesticides	Local Market	-	-	67	-
	APMC Market	-	-	-	-
	Input Dealers	100.0	100	33	100.00
	Co-operative	-	-	-	-
	Government agencies	-	-	-	-
	Farmer Producer Organisation	-	-	-	-
	Private Processors	-	-	-	-
	Contract Farming Sponsors/ Companies	-	-	-	-
	Other	-	-	-	-

Source: Farm level survey 2021, CSD

Table 3.13 illustrates the average per acre expenditure incurred by farmers in Delhi in cultivation of wheat and mustard (major Rabi crops). The 'other expenses' includes the transportation cost incurred in carrying the harvest from the field to the market for selling. Value of land constitutes 36 percent of the total cost of wheat production while for mustard it is slightly higher at 42 percent. Hired labour, hired machinery and cost of chemical fertilizers are the other major components of the total cost incurred. The average cost incurred in cultivating wheat is Rs. 31,586 per acre while that of mustard is Rs. 30,181 per acre. During interactions with farmers, the concern over increasing diesel prices was highlighted which is directly affecting the cost of production of agricultural commodities, especially in irrigation and cost of hired machinery. APMC is also quite far away from the villages which increases the cost of hiring of vehicles. The average cost of hiring labour in Delhi is Rs. 700 per day, added to it is the imputed value of family labour.

Table 3.13: Expenditure incurred in Cultivation of Wheat and Mustard (Rs./ acre)

Crop	Wheat (Sample farmers = 948)	Mustard (Sample farmers = 30)
Seeds	1533	962
Chemical Fertilizers	2551	2032
Bio-fertilizers	1080	
Manure	1483	
Manure Imputed	186	
Chemical Pesticides	843	744
Bio-Pesticides	517	
Irrigation	2426	2294
Irrigation Imputed	453	
Labour	3325	4565
Labour Imputed	780	865
Minor Repair	655	920
Interest on loan	320	
Cost of Hiring Machinery	2781	3982
Land Lease Rent (Imputed)	11430	12818
Other Expenses	1226	998
Total	**31586**	**30181**

Source: Farm level survey 2021, CSD

3.4. Kharif Season

3.4.1 Land Particulars in Kharif Season

Table 3.14 elucidates the operational holdings in Kharif season by type of land. Most of the cultivated area is owned and the area that is leased in is not recorded in most cases. Total area operated in Kharif season is comparatively lesser than that in Rabi season, the reason for which can be that the farmers in West Delhi district face problems with respect to water for irrigation and thus leave the land fallow from January to June or some use a small proportion to grow fodder crops.

Table 3.14: Total Operational Holdings in Kharif Season (Acres)

Districts	Owned (1)	Land leased-in (recorded) (2)	Land leased-in (Not recorded) (3)	Land Otherwise possessed (4)	Land Leased-out (5)	Total Operational Holdings (6) =(1+2+3+4)-5	Average Operational Holdings[4] (7)=column 6/ (sample households)
North	154.9	-	10.0	-	-	164.9	4.1
North West	2174.7	15.0	505.0	13.5	34.0	2674.2	5.1
South West	1290.2	94.0	78.0	-	-	1462.2	3.7
West	93.2	-	0.0	-	-	93.2	2.4
Total	3713.0	109.0	593.0	13.5	34.0	4394.5	4.4

Source: Farm level survey 2021, CSD

Moving to the major types of crops grown (table 3.15), in the Kharif season, more than 42 percent of the households in North West and North Delhi cultivate cereals while in South West Delhi only 13 percent grow cereals. In West district it can be seen that the majority of the households either keep the fallow or produce fodder crops (82.5 per cent).

Table 3.15: Major Type of Crop Grown in Kharif Season (%)

Districts	Cereals	Pulses	Condiments and Spices	Fruits	Vegetables	Other foodcrops	Oilseeds	Fodder crops
North	42.1	0.0	0.0	0.0	31.6	23.7	0.0	2.6
North West	52.3	8.8	1.3	0.2	13.2	5.6	0.0	18.6
South West	12.6	11.8	5.1	3.3	16.2	30.5	0.4	20.1
West	5.8	0.0	0.0	2.8	5.8	0.0	3.0	82.5

Source: Farm level survey 2021, CSD

As in Rabi season, in Kharif season the main source of irrigation is ground water with only 7 percent of households in South West district irrigating their crop using canal (Table 3.16).

[4] Average Operational Holdings is calculated as the Total Operational Holdings in a district (as per the sample) divided by the total sample households

Table 3.16: Percentage of Households by Source of Irrigation (Kharif)

Districts	Major Source of Irrigation		
	Canal	Minor Surface Works (pond, tank)	Ground Water (tube well, well)
North	-	2.38	97.62
North West	0.35	0.35	99.31
South West	6.91	0.49	92.59
West	3.13	-	96.88
Total	2.94	0.49	96.57

Source: Farm level survey 2021, CSD

3.4.2 Value of Output in Kharif Season

Table 3.17: Average Area, Production and Yield of Various Crops

Crops	Total Area (Acres)	Total Production (Kg)	No of Farmers	Average Area (Acres)	Average Quantity (Kg)	Yield (Kg/ Ac)
Paddy	1891	3213283	359	5.3	8951	1699
Bajra	236.85	151347	87	2.7	1739	639

Source: Farm level survey 2021, CSD

As per survey, the average area under paddy cultivation in the Kharif season (2020-21) was 5.27 acres with a yield of close to 1700 kg/ acre. The other main crops was bajra where on an average 2.7 acres were cultivated while the yield was 639.4 kg/acre (Table 3.17). Jowar is mainly grown as fodder by 150 farmers in 258.1 ac of area. It is pre-dominantly for self-consumption.

As seen in the Rabi produce, most of the paddy farmers (84.3 per cent) sell their crop either in local market or in APMC markets. Similar is the case for bajra. On the other hand, jowar is cultivated for mainly self-consumption while the rest is sold in APMC and local markets (Table 3.18).

Table 3.18: Percentage of Crops Sold to Various Agencies (%)

Crops	Local Market/ Local Traders	APMC Market	Input Dealers	Cooperative	Private Processors/ Companies	Others (includes self-consumption)
Paddy	29.2	55.15	0.3	0.0	0.0	6.1
Bajra	13.79	67.82	0.0	0.0	0.0	8.0

Source: Farm level survey 2021, CSD

Table 3.19 illustrates the value of total output per acre of paddy, jowar and bajra and the rates at which they were sold. The sale rate for paddy was Rs. 17.83 per Kg while that of bajra was Rs. 12.30 per Kg. As regards jowar, the respondents could not recall the rate of sale since it is basically it is used as fodder and is for self-consumption.

Table 3.19: Average Value of Total Output per Sample Household in Kharif Season (Rs.)

Crops	Paddy	Bajra
Sample Households	359	87
Total Cultivated Area as per sample (Acre)	1891	236.85
Average Quantity sold (Kg/acre)	1473	672
Average Sale value (Rs./ acre)	20213	6164
Selling Rate* (Rs./ kg)	18	12
Average Value of harvested produce (Rs. /acre)	34701	9359
Average Value of by-products (Rs. / acre)	670	7662
Total Average Value (Rs./ Acre)	35,371	17,021

Source: Farm level survey 2021, CSD

3.4.3 Cost of Cultivation in Kharif Season

As illustrated in the previous section, table 3.20 provides the procurement sources of various inputs used by farmers for different districts in cultivation of different Kharif crops.

Majority of the farmers in all districts, except West district, purchased seeds from input dealers. In West district, 82 percent of the farmers said to have purchased seeds from local market while in South West, 33 percent of farmers purchased from local market. In North-West Delhi, around 27 percent of the farmers purchased seeds from APMC market while in West Delhi, it was almost 12 percent of the farmers.

Moving to chemical fertilisers, almost 100 percent of farmers in North Delhi said they procured chemical fertilisers from input dealers while in North West and South West Delhi the percentage was more than 66 percent. In West Delhi, the farmers were majorly procuring chemical fertilisers from local market (88 per

cent). As for bio-fertilisers, there was response only from the farmers of South West district where 70 percent said to be procuring from the local market.

As regards manure, more than 45 percent of the farmers of North West and South West Delhi said to have used own source of manure while a significant proportion of farmers in North West district said to have procured manure from input dealers as well.

In case of chemical pesticides, in North, South West and West districts, close to 100 percent of the farmers said they purchased chemical pesticides from input dealers. In North West district, 71 percent farmers purchased from input dealers while 27 percent said they procured from the APMC market.

Lastly, for bio-pesticides, 97 percent farmers in North West district purchased it from input dealers, while in South West district, 73 percent purchased from input dealers and 17 percent from APMC market.

Table 3.20: District-wise Source of Procurement of Various Inputs in Kharif Season (%)

Inputs	Procurement Source	North	North West	South West	West
Seeds	Local Market	-	3	33	82
	APMC Market	-	27	2	12
	Input Dealers	100	77	64	6
	Co-operative	-	-	-	-
	Government agencies	-	-	-	-
	Farmer Producer Organisation	-	-	-	-
	Private Processors	-	-	-	-
	Contract Farming Sponsors/ Companies	-	-	-	-
	Other	-	-	-	-
Chemical Fertilisers	Local Market	-	2	29	88
	APMC Market	-	10	2	-
	Input Dealers	100	88	66	12
	Co-operative	-	-	-	-
	Government agencies	-	-	-	-
	Farmer Producer Organisation	-	-	0	
	Private Processors	-	-	-	-
	Contract Farming Sponsors/ Companies	-	-	-	-
	Other	-	-	3	-
Bio-fertilisers	Local Market	-	-	70	-
	APMC Market	-	-	2	-

	Input Dealers	-	-	11	-
	Co-operative	-	-	-	-
	Government agencies	-	-	-	-
	Farmer Producer Organisation	-	-	-	-
	Private Processors	-	-	2	-
	Contract Farming Sponsors/ Companies	-	-	-	-
	Other	-	-	15	-
Manures	Local Market	-	-	29	-
	APMC Market	-	-	-	-
	Input Dealers	-	50	14	-
	Co-operative	-	-	-	-
	Government agencies	-	-	-	-
	Farmer Producer Organisation	-	-	-	-
	Private Processors	-	-	10	-
	Contract Farming Sponsors/ Companies	-	-	-	-
	Other/ own	-	45	48	-
Chemical Pesticides	Local Market	-	2	6	-
	APMC Market	-	27	-	-
	Input Dealers	100	71	91	100
	Co-operative	-	-	-	-
	Government agencies	-	-	-	-
	Farmer Producer Organisation	-	-	-	-
	Private Processors	-	1	-	-
	Contract Farming Sponsors/ Companies	-	-	-	-
	Other	-	-	4	-
Bio-Pesticides	Local Market	-	3	17	-
	APMC Market	-	-	-	-
	Input Dealers	-	97	73	-
	Co-operative	-	-	-	-
	Government agencies	-	-	-	-
	Farmer Producer Organisation	-	-	-	-
	Private Processors	-	-	-	-
	Contract Farming Sponsors/ Companies	-	-	-	-
	Other	-	-	10	-

Source: Farm level survey 2021, CSD

From table 3.21, it can be seen that the average cost of producing paddy is Rs. 33,650 per acre. In this, apart from the land lease rent, the highest cost component is cost of hiring machinery, hired labour and chemical fertilizers. Both irrigation and cost of hiring machinery include cost of diesel. Diesel is used in tractors for almost every cultivation operation, starting from the ploughing of fields to sowing seeds, spraying fertilisers and pesticides, irrigation, harvesting and then finally for transporting the produce from the field to the market. Thus

increasing diesel prices is directly impacting the cost of production in agriculture.

Table 3.21: Expenditure incurred in Cultivation of Paddy, Jowar and Bajra (Rs./ acre)

Crop	Paddy (Sample farmers = 359)	Jowar (Sample farmers = 150)	Bajra (Sample farmers = 87)
Seeds	1349	937	1184
Chemical Fertilizers	2486	2840	2410
Manure	1461	1166	
Manure Imputed	1061		
Chemical Pesticides	839	932	958
Bio-Pesticides	894		
Irrigation	2567	2986	2098
Labour	3547	2876	3046
Labour Imputed	883	1305	814
Minor Repair	710	817	748
Cost of Hiring Machinery	3015	2811	3234
Land Lease Rent (Imputed)	13811	10733	16719
Other Expenses	1029	851	706
Total Expenditure	33650	28254	31917

Source: Farm level survey 2021, CSD

3.5 Costs vis-à-vis MSP

Examining the production of both Rabi and Kharif crops together, table 3.22 indicates the various costs as per the definition provided by the Commission for Agricultural Costs and Prices (CACP). The table also gives a comparison between the MSP rate of wheat, mustard and paddy in 2021 and the cost when applied the Swaminathan formula.

Table 3.22: Cost of Cultivation (Rs./ Acre and Rs./ Kg)

Items		Wheat	Mustard	Paddy
Cost of Cultivation (Rs./Acre)	**A1**	22163.9	20416.1	21913.4
	A2	22385.5	20620.3	22132.6
	B1	26596.7	24499.4	26296.1
	B2	38026.7	37317.4	40106.8
	C1	27376.2	25364.5	27179.5
	C2	38806.2	38182.5	40990.1
Cost of Production (Rs./Kg)	**A1**	12.1	18.2	12.9
	A2	12.2	18.4	13.0
	B1	14.5	21.8	15.5
	B2	20.7	33.3	23.6
	C1	14.9	22.6	16.0
	C2	21.1	34.0	24.1
	C2+ 50%	**31.7**	**51.0**	**36.2**
	MSP (2021)	**19.7**	**46.5**	**19.4**
	Selling Price*	**17.0**	**42.0**	**18.0**

Source: Costs And Selling Price: Farm level survey 2021, CSD

MSP: Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare, Govt. of India

It is seen that the selling price that the farmers received for all their crops was much lower than the MSP in the production season. This is in contrast with the secondary data on FHP seen in the previous chapter which showed that the average prices that farmers get for their produce is higher than MSP. This needs further investigation.

Additionally, it is seen that if Swaminathan recommendations are followed then the MSP of paddy would be fixed at Rs. 36.2 per kg which is Rs. 19.4 at present. In case of Rabi season, wheat is the major crop which is grown in 65 percent of the total cropped area. The Swaminathan recommended MSP for wheat will be around Rs. 31.7 per kg which is Rs. 19.7 at present. In case of mustard, the difference is not as high between the MSP in 2021 (Rs. 46.5) and Swaminathan recommended MSP (Rs. 51.0), nevertheless , it is there.

In table 3.23 expenditure estimates of Delhi Government are represented, presuming that the Government begins procurement of rice and wheat, the major crops in Kharif and Rabi season, respectively. From the field analysis it was seen that close to 60 percent of the paddy production is for the market and rest is for self-consumption, which implies an expenditure estimate of Rs. 53.14 crores for paddy procurement. Similarly, in case of wheat, close to 72 percent of the produce is for the market which implies an expenditure estimate of Rs. 188 Crores.

Table 3.23: Estimates of Budgetary Expenditure of Delhi Government if Swaminathan Recommendations are implemented

Crops	Paddy	Wheat	Mustard
% of Total Area	20	65	10
Cost per Kg (C2) (Rs/kg)	24.1	21.1	34.0
MSP (2020-21) (Rs./kg)	19.4	19.7	46.5
C2+50% (Rs./kg)	36.2	31.7	51.0
Total Production (Kg)	2,52,00,000	8,28,70,000	39,02,000
Proportion of produce sold (Estimate based on field survey) (%)	58.25	71.68	92.64
Quantity sold (Kg)	14679000	59401216	3614812.8
Total Expenditure incurred in procurement* (Rs)	**53.13 Cr**	**188 Cr**	**18.43 Cr**

Source: % of Total Area and Total production: *Government of NCT Delhi, Economic Survey of Delhi (2020),* Cost per kg and Proportion of produce for the market: *Farm level survey 2021, CSD,*

3.6 Summary

From the above analysis, it can be seen that wheat in Rabi and paddy in Kharif are the main crops cultivated in Delhi. Due to the absence of surface water in Delhi, majority of the farmers depend on ground water for irrigation purposes. Since the ground water level is already in the red zone, it is not feasible to grow water intensive crops. It is clearly seen that there is no presence of government machinery at the ground level, especially in terms of procurement. Additionally, farmers do not get adequate technical advice regarding what to cultivate, what inputs to use and in what quantity and also receives virtually no support like inputs at subsidized rates etc. The profit margin realised by the farmers of

Delhi is very small which can be improved through procurement at MSP rates by the government which might further promote competition amongst the buyers thus improving the bargaining power of the farmers.

Chapter-Four

Qualitative assessment of Farming

4.1. Perspectives of Farmers: Issues and Challenges

According to the census 2011, out of the total population of Delhi of more than 1.6 crores, only 33,398 are cultivators (main and marginal) and 39,475 are agricultural labourers (main and marginal) which constitutes a mere 0.60 per cent and 0.71 percent respectively of the total working population of Delhi. Since the population engaged in agriculture as well as the area under cultivation is on a decline, it is imperative to understand the reasons behind it. In this section, we look at the perceptions of farmers engaged in agriculture in the capital city of India and try to understand the cropping patterns in the different agricultural seasons, namely Kharif and Rabi, the marketing of their produce, the prices realised and the reasons behind shrinking agriculture.

Around 35 in-depth interviews were conducted with the farmers who are currently engaged in agricultural activities. Only 18 of the farmers grew crops in both Kharif and Rabi season. Rabi is the main agriculture season in Delhi and major crop is wheat. Mustard is another crop grown in this season. Paddy, jowar and bajra are the crops grown in Kharif season.

On interrogating about the changes in yield in the last five years, out of 35 farmers, only 5 farmers said that it has been constant while the rest (30 farmers)

said that it has declined over the years. The main reasons cited were poor and deteriorating soil quality which they associated with increased usage of fertilisers and pesticides and poor quality of water available for irrigation. The other major reason mentioned was that there is not much interest left in farming as most of the times the costs work out to be higher than the receipts. While 15 farmers professed that they had no motivation left to continue with farming, 7 were continuing only for self-consumption. Another popular factor that made the farmers carry on with the cultivation was that they considered it to be better than keeping the land fallow. None of the farmers mentioned it to be their main source of income and livelihood. Further, 23 farmers claimed to be keeping majority of the produce for self-consumption while only 12 said that they produced for the market. None of the farmers surveyed had made any changes in their cropping patterns since the last many years.

All the farmers claimed to be receiving the inputs such as seeds and fertilisers in time, the source of procurement was mostly either input dealers, APMC market or local markets. All 35 farmers said they bought seeds and fertilisers from private input dealers as they were more accessible in terms of timings. The farmers reported that the government shops, if any, were open only for a small duration during the day which most often is not fixed. On questioning the assessment of farmers about the level of expenses when inorganic, organic and both methods of crop production are used, understandably, 30 farmers said that the inorganic farming methods come out to be very expensive. Also, 9 farmers mentioned the cost of organic farming also came out to be too high while rest said it was moderately lower as compared to inorganic farming.

Enquiring regarding whether the farmers have storage space and market for their yield, 19 farmers said they did not have any space for storing their produce while 14 said that they were not aware if there was any. Similarly, regarding the market for their harvest, it was revealed that 22 farmers were not aware if they had market for their crop while 12 said that they did not have any market.

About the prices the farmers realised on selling their crop, 100 percent of those interviewed informed that the price at which they sold was much less than the MSP announced by the Government. As mentioned by one of the farmers,

> I am cultivating mustard since the last 20 years during October- March and sell it in April. In April 2021, the MSP was Rs. 5200/ quintal but I got a price of only Rs. 4200/ quintal as there was no government agent whom I could sell it to. Now in September, the rate is Rs. 8100/ quintal.
>
> Mustard Farmer

None of them were satisfied with the year on year sale due to lesser rates for their output and no procurement at MSP by the Government. It seems that there is no active farmers' organisation in Delhi since none of the farmers were part of any farmer union or organisation and majority of them had not heard of any such union in their area. The presence of farmers' organisations also helps farmers in becoming more aware of the schemes and policies of the Government, about the cropping pattern best suited for their land and also helps realise better prices. Thus, the absence of a local organisation had an impact on the level of awareness of the farmers.

4.1.2. Perception on implementing Swaminathan's Recommendations:

Although none of the farmers were aware of the formula used by M.S. Swaminathan Committee to calculate the MSP. Once they were informed, 100 percent of the farmers agreed with the approach and further, 10 of these farmers pointed out that apart from the input costs considered, transportation cost and storage costs were also two other major costs that need to be included. As per the current situation, the Delhi farmers are not getting even the current MSP announced by the Government and thus, are not very hopeful of receiving it even if it is fixed at a higher price. Nevertheless, majority of the farmers said that in case they start getting a higher MSP for their produce then

the efforts put in by the farmers will be made worthwhile and the farmers who are on the verge of quitting farming due to the poor returns, might again develop interest towards cultivation. Additionally, the higher MSP will help farmers decide on which crop to produce and which Mandi to sell in and thereby escaping the monopoly of the intermediaries.

4.1.3. Challenges faced:

The farmers spoke about a number of challenges faced by them being a cultivator in Delhi.

- Water

According to them the main challenge faced was unavailability of water for irrigation. In areas in North and North West Delhi, there was a major problem of water-logging with no facilities or arrangements available for draining out that water. There were issues related to the quality of water in areas of West Delhi. It was reported that the water supply is not given on time for irrigation and due to the poor water quality and less supply, only one round of irrigation is done while two rounds are needed for better yield.

Delhi comes under dark zone due to very low level of ground water due to which permissions for borewells and submersible connection is not approved. The Government should look into it and at least help the farmers with electricity connections and irrigation facilities.

- Soil Quality

The other issue faced was of poor soil quality with no facilities of soil quality testing, which has resulted in decreased yields over the years.

- *Transporting crops to Mandis and low prices of output*

The farmers face problems in selling their produce in *Mandis* as these are located quite far which increases the transportation costs of farmers. Since they have no storage facilities, the produce gets deteriorated due to delay in taking to *mandis* which reduces the prices realised. As the transportation cost borne by the farmer is high and he does not have the option of taking the produce back, the farmer sells it at whatever price offered to him, even if it is much less than the MSP. Moreover, none of the *Mandis* had intermediaries buying at MSP and none had any government agencies buying directly from the farmers.

- Rising input prices

The farmers also stated that the input prices are rising and they do not get any kind of support from the Government like provision of fertilizers, seeds, water etc. at subsidized rates. They mentioned that tractors are used in crop production for most of the activities, namely, ploughing, seeding, fertiliser and pesticide spraying, irrigation, harvesting and marketing. With ever increasing costs of diesel, their input costs have increased sharply causing losses in crop production.

- Lack of accessible credit

In addition to the above challenges communicated by the farmers in the in-depth interviews, farmers shared that very few people have access to KCC and found availing loan on KCC relatively more troublesome than taking loan from family/ friends and from the *arhtiyas* to whom they sell their produce, even though they charge much higher interest than banks.

4.1.4. Expectations from the Government

As a response to a question on what expectations the farmers have from the government, the response that came most repeatedly was that the Government must increase their agencies to make selling of crops easier and faster for the farmers and thus helping them realise better prices for their

produce without much hassle and without getting involved with intermediaries. Additionally, the farmers appealed that procurement centres be made closer to the villages. The Government must also provide help to the farmers in transporting their produce to the *Mandis* after harvesting. The problem of water logging and poor water quality must be looked into and easy and fair compensation must be provided to farmers, including tenant farmers, in case of bad crop or crop loss. Currently, even if any compensation is given, it is not given to everyone and the tenant farmers are totally excluded from the ambit. The number of soil quality checks needs to be ramped up. Majority of the farmers had not received any training or technical advice from any expert from the Government. They suggested that some professional visits their village to guide them in their agricultural practices or to make them aware about the facilities or provisions by the Government in order to help and encourage the farming community.

The farmers pleaded to be given due respect and status of a farmer and not be pushed to the margins.

4.2. Perspective of Intermediaries: Issues and Challenges

Agricultural commodity markets in India operate through multiple channels. For instance, in the agricultural supply chain, between a retailer and consumer there is a whole series of buyers and sellers that close deals on daily basis before the product reaches the consumer. Major avenue for such interactions is the *Mandi* system (wholesale commodity markets) which is recognised by the Government as designated places for sale and purchase of agricultural output. These *Mandis* are medium of interaction for farmers with all the players in the market such as commission agents/ traders/ *arthiyas*, input dealers, government officials etc.

In order to understand the operation of these *Mandis* in Delhi, the perspective of intermediaries about farming was captured through the qualitative survey. The

information was gathered on various aspects of marketing from 15 *arthiyas* in Najafgarh and Narela *Mandis*. *Arthiyas* operating in the *Mandis* are called 'commission agents' because they charge fee as a percentage of the sale price of the farmers' produce. This is their commission for services rendered. All the agents interviewed were registered under Agricultural Produce & Livestock Market Committee (APMC) Act and had licenses to operate. Technically, their business is governed by the rules laid down by the market committee.

These traders dealt with both Kharif and Rabi crops. Major commodities traded by them are cereals and pulses such as wheat, paddy, arhar, moong, and other foodgrain crops like jowar and bajra.

> One such trader informed that for the first time cotton seed was traded in Najafgarh which was brought by farmers from Mewat (Haryana) and was sold at Rs. 6431 per quintal.
>
> Trader

4.2.1. Infrastructural Facilities at the Mandis

The nature of enterprises in Najafgarh *Mandi* was perennial while in Narela *Mandi*, it was seasonal. Majority of the traders were commission agents and had sufficient space for bidding or selling of crops. All of them except for one trader had digital weight measurement and sufficient space for storage of commodities. Only four traders mentioned that they do not have sufficient space for storage. Further, rats are a great nuisance in *Mandis* but the traders use government approved medicines to keep the stock safe.

Regarding the grading facility, most of the traders denied having such arrangements. However, grading is done by the farmers on their own as they bring in their output in different sacks of different quality. The rates are different for different quality of output. Also, the quality of the crop is checked by the

traders through random visual inspection (moisture level, purity etc.) of a handful of crop. A starting price is announced after inspecting the produce and the bidding process starts.

Further, 6 of these traders had their own storage facility while 9 relied on APMC sheds in the *Mandi*. All of them claimed that they maintain proper book of accounts and their financial statements are also audited.

4.2.2. Perception about MSP

All the traders were aware of the Minimum Support Price (MSP) and they all claimed to buy the produce at rates higher than MSP. For instance, one trader from Najafgarh *Mandi* narrated, "MSP is very low for mustard but market price was high in the last season. The rates are decided by open auction and are generally higher than MSP. Farmers get good rate and are satisfied." Another trader mentioned, "the rate at which we procure is sometimes higher than MSP and sometimes lower. In case of paddy and mustard, procurement rate in *Mandis* is always higher than MSP".

Cash memo/invoice/bill is provided to the farmers and most of the transactions in Najafgarh *Mandi* are not done digitally. However, in case of Narela *Mandi*, 6 out of 7 traders interviewed were found to be using digital mode of transactions (bank transfers through NEFT or RTGS).

Credit facility to the farmers is given by 4 out of 15 traders at a rate of 18 per cent. By taking advance from the *arthiya*, a farmer becomes bound to sell his produce to him/her (as per the auction price). A farmer generally takes loan at the time of sowing of crop to finance his expenses for buying inputs. The period of loan depends on the crop cycle and advance is paid back by the farmer when he/she brings produce for sale at the *Mandi*.

4.2.3. Challenges Faced by Intermediaries

The challenges faced by them are shortage of storage facilities and non-availability of drinking water in the *Mandis*. Regarding the information on approximate expenditure during 2020-21, it was hard to access information due to reluctance shown by the traders. Few also mentioned that we get only our fees (one per cent *Mandi* fee that the intermediary pays to the APMC and 2 per cent that he/she takes from the buyer) for procuring the produce and earn no profits here. Also, all of them deploy their own capital for business and none was found availing bank loan.

Chapter Five

Conclusion and Way Forward

Delhi, the capital city of India, has less than 25 percent of rural area (Census 2011) with 71,630 acres of area under cultivation. Although agriculture is not a big contributor towards the Gross State Domestic Product of Delhi, it is a source of livelihood for close to a quarter million people which makes it important to look into the prevailing situation of these farmers. Being the capital city inhabiting most of the agricultural research institutions of national importance, one would assume that the farmers in Delhi would be more aware of the new inputs and techniques introduced in cultivation of different crops and also have better opportunity to realise prices for their produce which would cover their costs and provide them good returns. Nevertheless, the analysis of the secondary data as well as the field survey conducted for 1000 farmers suggests otherwise.

The present study is based on both secondary as well as primary data of the situation of farmers in Delhi. It covers the access to basic facilities of the farmers related to bank accounts, KCC, Soil Health Cards, crop Insurance etc. From the data, it is seen that the Delhi farmers lack awareness related to KCC and Soil

Health Cards as well as crop insurance. Even for any technical advice relating to cultivation, the farmers have to fall back on the fellow farmers and generally follow the demonstration effect in selecting the seeds, fertilisers etc. The most important policy of the Government of India to safeguard farmers from losses is the announcement of MSPs, which were announced for the first time in 1966-67, seems to be non-functional in Delhi as the majority of farmers are unaware of MSP, and those who are, claim that no government agency comes for procurement of their produce. On explaining to the farmers about the Swaminathan Committee recommendations, the feedback received from the farmers talks about including the cost of transportation as well as storage while calculating the cost of cultivation. However, the farmers did not seem to have any expectations on the improvement in prices realised for their produce even if they are doubled since more than 90 percent of the farmers were selling through open market auctions in APMC where no government agency had even auctioned. Even the data from the FCI suggests that since 2015-16, there has been no procurement of crops produce from Delhi farmers. Thus, the exercise of increasing MSP would remain futile as it would not reach the targeted beneficiaries.

It is seen from the study that the main crops produced in Rabi season are wheat and mustard while in Kharif it is mainly paddy, jowar and bajra. In some areas such as West district of Delhi, it was seen that the majority of the farmers keep their land fallow in Kharif since there is a problem in supply of water and paddy requires huge amounts of water for cultivation. Even in Rabi season, due to the problem of underground water, some of the farmers of West Delhi do only one round of irrigation while their crop require at least two rounds. This affects the yield of their crop. Delhi is dependent on ground water for irrigation and being in the dark zone due to low water table, there are problems in getting permissions for installing submersibles or borewells and also in getting electricity connection which further accentuates the problem of irrigation faced by the farmers.

Apart from the problem of irrigation and non-selling of produce at MSP, the major challenges faced by the farmers is of increasing input prices, including labour, fertilisers and diesel. Additionally due to non-availability of markets for their produce nearby and no storage spaces, the farmers incur huge transportation costs at the time of harvesting of their crop. Although the farmers were aware that their produce can fetch better prices if they sell after the peak harvesting season, due to lack of storage facilities, they have no other option but to sell as and when harvested. Majority of the farmers claimed that they sold their produce at rates lower than market rates. Moreover, although there is open auction in the *Mandis* for the prices of the produce, farmers mostly sell to the same APMC shop year after year due to the comfort shared with the shopkeeper and also personal relations which help them in time of financial difficulties.

These intermediaries in the *Mandis*, besides procuring their produce, also provide credit to the farmers as and when required. This is the most convenient form of credit available to farmers. The intermediaries assured that they procure produce at rates higher than MSP. The challenges faced by them are shortage of storage facility and non-availability of drinking water in the *Mandis*.

Way Forward

Analysing the current situation of the farmers in Delhi through the primary survey and also that in the previous years through various secondary sources, it is apparent that the farming community of Delhi needs the Government's attention and support. On the basis of the situation assessment study it can be said that the Government needs to ensure that the policies that are for the farmers must reach them.

First and foremost, a mere announcement of MSP or an increase in MSP by using different formula would not guarantee benefit to farmers unless and until FCI or other procurement agencies increase their purchase centres and make farmers

of Delhi aware of their presence. As understood from the system of the government there are various channels through which states can procure directly from the farmers and even distribute wheat and rice as per the provisions under National Food Security Act (2013). As seen in DCP states like MP, Delhi State Civil Supplies Corporation can procure rice and wheat directly from the farmers, store and distribute among the NFSA beneficiaries as per the provision and can hand over the excess stocks to FCI. As studied in the earlier section, the expenditure incurred by the State Government on procurement, storage and distribution of DCP stocks are reimbursed by Government of India on the laid down principles. The expenses such as MSP, arhatiya/society commission, administrative charges, mandi labour charges, transportation charges, custody & maintenance charges, interest charges, gunny cost, milling charges and statutory taxes are reimbursed on actual basis. The cost of excess stocks handed over to FCI is reimbursed by FCI to the State Government/agencies as per Government of India costs sheet.

Secondly, at present there is only one *Mandi* in Delhi that is perennial. Due to the long distance, the farmer has to incur huge transportation costs. The Government must either increase the number of Mandis or provide farmers with the transportation facilities so as to cut down on their costs or FCI can organise procurement camps in villages during harvesting season. A suggestion that came from the farmers was that government must provide booths in villages for selling vegetables. At present, the farmers take their vegetables output to *Mandis* for which they bear huge transportation costs and most of the times it is not purchased by the traders and has to be disposed at low prices.

Thirdly, storage facilities must be available to farmers so that the farmer has an option to sell his/ her produce when the prices are competitive rather than selling off their crop as soon as harvested. This will again help farmers realise better returns for their output.

Fourthly, the problem of water, be it water-logging or poor water quality and unavailability of groundwater for irrigation, must be looked into.

Fifthly, there should be awareness generation among farmers regarding crop insurance, Kisan Credit Card, Soil Health Card etc.

Lastly, technical advice should be given to farmers regarding which crop to be grown given the soil, water and weather conditions. The farmer continues with his age long practices of growing the same crops year after year without realising that the natural conditions that once used to nurture their crops, have now changed resulting in loss in yields. Due to reduced groundwater availability, farmers need to be advised on crops that can be grown with very little water given the soil and other agro-climatic conditions of Delhi. Additionally, knowledge sharing among farmers from Delhi, Haryana and Punjab and other neighbouring states with similar farming conditions must be organized by the respective state governments for the benefit of the farming fraternity.

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Appendix

Schedule 1 for Farmers

PLANNING DEPARTMENT
GOVERNMENT OF NATIONAL CAPITAL TERRITORY OF DELHI
SITUATION ASSESSMENT OF FARMERS

[1] Description identification of sample household									
1.	Sate/UT :					6.	Name of head of household:		
2.	District :					7.	Name of informant:		
3.	Sub-District/Tehsil :					8.	Relation with Head of Household		
4.	Village name :					9.	Response Code		
5.	Sample Unit Number :					10.	Contact No. Of Informant		

CODES FOR BLOCK – 1
Item 9 : response code : informant: co-operative and capable – 1, co-operative but not capable -2, busy – 3, reluctant -4, others – 9

	[2] household characteristics				
1.	whether any of the household member has bank account? (yes-1, no-2)		4.	whether the household possess Soil Health Card? (yes-1, no-2)	
2.	whether any of the household member is a member of registered farmers organisation? (yes-1, no-2)		5.	**If code 1 in item 4**, whether fertilizer, manure, soil amendments applied to field as per recommendations of Soil Health Card? (yes-1, no-2)	
3.	whether the household possesses any Kisan Credit Card? (yes-1, no-2)		6.	whether the household insured any crop during last 365 days? (yes-1, no-2)	

[3] particulars of land of the household and its operation during the period July-December, 2020 [KHARIF]

s. no.	categories of land			Area of land *(0.00 acre)*	whether used for any crop production during July-December, 2020 (yes-1, no-2)	Area of land by its use during July-December, 2020 only for growing of crops (0.00 acre)	Major type of crop grown (code)	Whether any part of the land was irrigated (yes-1, no-2)	If entry 1 in col 7: Area of land irrigated (0.00 acre)	If entry 1 in col 7: Source of irrigation (code)		for leased lands: tenure of lease for major part of the land (code)	for leased lands: area of land by terms of lease (0.00 acre)				
										Major source	2nd major source		For fixed money	For fixed produce	For share of produce	Under no specified terms from relatives/to relatives	Under other terms
(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
1.	land other than home-stead	owned and possessed															
2.		leased-in	recorded														
3.			not recorded														
4.		otherwise possessed															
5.		leased-out															
6.	Total																
7.	If entry 1 in col. 4 for any of the items 1 to 4.						whether operated individually/jointly? (individually – 1, jointly -2)										
8.							Type of holding (code)										
9.							Number of crops harvested during July-December, 2020										

CODES FOR BLOCK 3
col. 6: ***major type of crop grown/animal farming undertaken:*** cereals-01, pulses-02, condiments and spices-03, fruits-04, tuber crops-05, vegetables-06, other food crops-07, oilseeds-08, fodder crops-09, medicinal plants – 10, other non-food crops-11
col. 9 & 10: ***source of irrigation:*** canal-1, minor surface works (pond, tank etc.)-2, ground water (tube well, well etc.)-3, combination of codes 1,2 and 3 -4, others-5
col. 11, **tenure of lease**: less than 6 months -1, 6 months or more but less than 1 year -2, 1 year or more but less than 2 years -3, 2 years or more -4
Item 8, **type of holding**: entirely owned-1, entirely leased-in -2, both owned and leased-in -3, entirely otherwise possessed -4
Conversion factors for reporting land area: 1 acre = 0.405 hectare = 4047 sq. Meter = 43560 sq. Ft

[4] output of crops produced during the period July – December, 2020 **[KHARIF]** (to be filled in only if entry in column 6 of block 3 is 01, 02, 08)																							
s. no.	Crop (code)	Grade/quality	Unit (kg)	**Harvested output**								area of land under pre-harvest sale (0.00 acre)	**Disposal during July-December, 2020 (including old stock)** disposal				*rate (Rs. 0.00) col 15/col 16	**value of output**			
				Area of irrigated land (0.00 acre)		Quantity produced from irrigated land	Area of un-irrigated land (0.00 acre)		Quantity produced from un-irrigated land	Total Area (5+7)	Total quantity col. (6+8)	Yield kg. per acre		to whom you sold? (code)	are you satisfied with the sale of outcome? (code)	quantity sold	Sale value (Rs.)		value of pre-harvest sale (Rs.)	valve of harvested produce (Rs.) col (10x17)	value of by-products (Rs.)	total value (Rs.) col. (19 to 21)
(1)	(2)	(3)	(4)	(5)		(6)	(7)		(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
1.																						
2																						
3																						
4																						
5																						
	all																					

* in case of no disposal, local market price at the time of harvest may be recorded.

CODES FOR BLOCK 4
col. 2: crop code: wheat-01, peddy-02, jowar-03, bajra-04, maize-05, gram-06, arhar-07, mustard-08, others-09
col. 13: to whom you sold?: local market (incl. Local traders)-01, APMC market-02, input dealers-03, cooperative-04, Government agencies-05, Farmer producer organisation (FPO)-06, private processors-07, contract farming sponsors/companies-08, others-09
col.14: are you satisfied with the sale outcome: satisfactory-1, not satisfactory: lower than market price-2, delayed payments – 3, deductions for loans borrowed- 4, faulty weighing and grading-5, other cause of dissatisfaction – 9.

[5] particulars of input and other expenses for crop production from July-December, 2020 [KHARIF]							
s.no.	Input	s.no. of crop (as in col. 1 of block 4)	crop code (as in col. 2 of block 4)	From where procured? (code)	Quality/adequacy (code)	Paid out expenses (Rs.)	Imputed expenses (Rs.)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Seeds	1					
2		2					
3		3					
4		4					
5		5	other				
6	Chemical fertilizers						
7	Bio-fertilizers						
8	Manures						
9	Plant protection materials	Chemical					
10		Bio-pesticides					
11	Diesel						
12	Electricity						
13	Irrigation						
14	Labour						
15	Minor repair and maintenance of machinery and equipment used in crop production						
16	Interest on loans utilised for the purpose of crop production						
17	Cost of hiring of machinery and equipment for crop production						
18	Cost of crop insurance						
19	Lease rent for land used for crop production						
20	Other expenses for crop production						
21	Total (1 to 20)						

CODES FOR BLOCK 5
col.5: from where procured: local market (incl. local traders)-01, APMC market-02, input dealers-03, cooperative-04, Government agencies-05, Farmer producer organisation (FPO)-06, private processors-07, contract farming sponsors/companies-08, own farm-10, others-09
col.6: quality/adequacy:good-1, satisfactory-2, poor-3, don't know-4

[3.1] particulars of land of the household and its operation during the period January-June, 2021 [RABI]																	
								If entry 1 in col 7			for leased lands					
s. no.	categories of land			Area of land *(0.00 acre)*	whether used for any crop production during July-December, 2020 (yes-1, no-2)	Area of land by its use during July-December, 2020 only for growing of crops (0.00 acre)	Major type of crop grown (code)	Whether any part of the land was irrigated (yes-1, no-2)	Area of land irrigated (0.00 acre)	Source of irrigation (code)		tenure of lease for major part of the land (code)	area of land by terms of lease (0.00 acre)				
										Major source	2nd major source		For fixed money	For fixed produce	For share of produce	Under no specified terms from relatives/to relatives	Under other terms
(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
1.	land other than home-stead	owned and possessed															
2.		leased-in	recorded														
3.			not recorded														
4.		otherwise possessed															
5.		leased-out															
6.	Total																
7.	If entry 1 in col. 4 for any of the items 1 to 4.						whether operated individually/jointly? (individually – 1, jointly -2)										
8.							Type of holding (code)										
9.							Number of crops harvested during July-December, 2020										

CODES FOR BLOCK 3
col. 6: ***major type of crop grown/animal farming undertaken:*** cereals-01, pulses-02, condiments and spices-03, fruits-04, tuber crops-05, vegetables-06, other food crops-07, oilseeds-08, fodder crops-09, medicinal plants – 10, other non-food crops-11
col. 9 & 10: ***source of irrigation:*** canal-1, minor surface works (pond, tank etc.)-2, ground water (tube well, well etc.)-3, combination of codes 1,2 and 3 -4, others-5
col. 11, **tenure of lease**: less than 6 months -1, 6 months or more but less than 1 year -2, 1 year or more but less than 2 years -3, 2 years or more -4
Item 8, **type of holding**: entirely owned-1, entirely leased-in -2, both owned and leased-in -3, entirely otherwise possessed -4

[4.1] output of crops produced during the period January – June, 2021 **[RABI]** (to be filled in only if entry in column 6 of block 3 is 01, 02, 08)																							
s. no.	Crop (code)	Grade/quality	Unit (kg)	**Harvested output**								area of land under pre-harvest sale (0.00 acre)	**Disposal during July-December, 2020 (including old stock)** disposal				*rate (Rs. 0.00) col 15/col 16	**value of output**			
				Area of irrigated land (0.00 acre)		Quantity produced from irrigated land	Area of un-irrigated land (0.00 acre)		Quantity produced from un-irrigated land	Total Area (5+7)	Total quantity col. (6+8)	Yield kg. per acre		to whom you sold? (code)	are you satisfied with the sale of outcome? (code)	quantity sold	Sale value (Rs.)		value of pre-harvest sale (Rs.)	valve of harvested produce (Rs.) col (10x17)	value of by-products (Rs.)	total value (Rs.) col. (19 to 21)
(1)	(2)	(3)	(4)	(5)		(6)	(7)		(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
1.																						
2																						
3																						
4																						
5																						
	all																					

* in case of no disposal, local market price at the time of harvest may be recorded.

CODES FOR BLOCK 4
col. 2: crop code: wheat-01, peddy-02, jowar-03, bajra-04, maize-05, gram-06, arhar-07, mustard-08, others-09
col. 13: to whom you sold?: local market (incl. Local traders)-01, APMC market-02, input dealers-03, cooperative-04, Government agencies-05, Farmer producer organisation (FPO)-06, private processors-07, contract farming sponsors/companies-08, others-09
col.14: are you satisfied with the sale outcome: satisfactory-1, not satisfactory: lower than market price-2, delayed payments – 3, deductions for loans borrowed- 4, faulty weighing and grading-5, other cause of dissatisfaction – 9.

[5.1] particulars of input and other expenses for crop production from January-June, 2021 [RABI]							
s.no.	Input	s.no. of crop (as in col. 1 of block 4)	crop code (as in col. 2 of block 4)	From where procured? (code)	Quality/adequacy (code)	Paid out expenses (Rs.)	Imputed expenses (Rs.)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Seeds	1					
2		2					
3		3					
4		4					
5		5	other				
6	Chemical fertilizers						
7	Bio-fertilizers						
8	Manures						
9	Plant protection materials	Chemical					
10		Bio-pesticides					
11	Diesel						
12	Electricity						
13	Irrigation						
14	Labour						
15	Minor repair and maintenance of machinery and equipment used in crop production						
16	Interest on loans utilised for the purpose of crop production						
17	Cost of hiring of machinery and equipment for crop production						
18	Cost of crop insurance						
19	Lease rent for land used for crop production						
20	Other expenses for crop production						
21	Total (1 to 20)						

CODES FOR BLOCK 5
col.5: from where procured: local market (incl. local traders)-01, APMC market-02, input dealers-03, cooperative-04, Government agencies-05, Farmer producer organisation (FPO)-06, private processors-07, contract farming sponsors/companies-08, own farm-10, others-09
col.6: quality/adequacy:good-1, satisfactory-2, poor-3, don't know-4

[6] awareness about Minimum Support Price (MSP)								
s.no. of crop (as in col.1 of block 4 & 4.1 for MSP crops)	Crop code (as in col 2 of block 4)	Unit (Kg.)	Are you aware about MSP of this crop? (yes-1, no-2)	***if code 1 in col. 4***				
				do you know which agency procures this crop at MSP (code)	did you sell to any of the agencies? (code)	***if code 1 to 7 in col. 6***		if code 6 in col. 6 reason (code)
						quantity sold	sale rate (Rs. 0.00)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

Awareness about Swaminathan Committee Report:		
1.	Do you know about the recommendations of Swaminathan Committee Report on MSP. (Yes-1, No-2)	
2.	Whether Delhi Government should implement recommendation of Swaminathan Committee Report. (Yes-1, No-2)	
3.	What cost components should be included in deciding MSP?	

CODES FOR BLOCK 6
col.5: do you know which agency this crop at MSP?: (yes: FCI-1, NAFED-2, State Food & Supply Department -3, Delhi State Civil Supplies Corporation -4, others-5, do not know -6
col.6, did you sell to any of the agencies?: (yes, sold to :FCI-1, NAFED-2, State Food & Supply Department -3, Delhi State Civil Supplies Corporation -4, others-5, no -6, do not know -7
col.9: reason: procurement agency not available-1, no local purchaser-2, poor quality of crop-3, crop already pre-pledged-4, received better price over MSP-5, others-6

[7] access to technical advice related to the agricultural activity undertook by the household				
s.no.	Source of technical advice	whether accessed? (yes-1, no-2)	**If code 1 in col. 3**	
			type of information accessed (code)	whether recommended advice adopted? (yes-1, no-2)
(1)	(2)	(3)	(4)	(5)
1	progressive farmer			
2	input dealers			
3	Government extension agent/ATMA			
4	KrishiVigyan Kendra			
5	Agricultural university/college			
6	Private commercial agents (including contract farming sponsors/companies, drilling contractors etc.)			
7	Farmers Producer organisations (FPOs)			
8	Private processors			
9	Agri. Clinics & Agri. Business Centres (ACABC)			
10	NGO			
11	Kisan Call Centre			
12	Print media			
13	Radio/TV/other electronic media			
14	Smart phone apps based information			

CODES FOR BLOCK 7
col.4: type of information accessed: cultivation: improved seed/variety-1, fertilizer application -2, plant protection (pesticide etc.)-3, farm machinery-4, harvesting/marketing-5, others-6

[8] particulars of other aspects of farming									
s. no. of crop (as in col. 1 of block 6)	crop code (as in col. 2 of block 6)	did you have this crop insured? (code)	if code 3 in col. 3, reason for not insuring (code)	if code 1 or 2 in col. 3, whether received insurance document/certificate (yes-1, no-2)	have you experienced any crop loss? (yes-1, no-2)	If code 1 in col.6			
						Cause of crop loss (code)	If code 2 in col.3		
							Did you receive claim amount? (code)	If code 1 or 2 in col.8, time taken for receiving the claim amount (code)	If code 3 in col. 8, reason for not receiving claim (code)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1									
2									
3									
4									

CODES FOR BLOCK 8
col. 3: did you have this crop insured?: insured only when received loan-1, insured additionally-2, not insured-3
col .4, reason for not insuring: not aware-1, not aware about availability of facility-2, not interested-3, no need-4, insurance facility not available-5, lack of resources for premium payment-6, not satisfied with terms & conditions-7, nearest bank at a long distance-8, complex procedures-10, delay in claim payment-11, others-9
col.7: cause of crop loss: inadequate rainfall/drought -1, disease/insect/animal-2, flood-3, other natural cause (fire, lighting, storm, cyclone, earthquake etc.)-4, others-9
col 8: received claim amount: yes: fully-1, partly-2, no-3
Col 9: time taken for receiving the claim amount? Within 6 months-1, 6 to 12 months-2, more than 12 months-3
col.10: reason for not receiving claim: cause outside coverage-1, documents lost-2, others-9

Schedule 2
QUALITATIVE ASSESSMENT (FOR FARMERS)

[1] Description identification of sample household								
1.	State/UT :					6.	Name of head of household:	
2.	District :					7.	Name of informant:	
3.	Sub-District/Tehsil :					8.	Relation with Head of Household	
4.	Village name :					9.	Response Code:	
5.	Sample Unit Number :					10.	Contact No. of Informant:	

CODES FOR BLOCK – 1

Item 9 : response code : informant: co-operative and capable – 1, co-operative but not capable -2, busy – 3, reluctant -4, others – 9

[2] Qualitative Characteristics

1. What crops do you grow on your land during:
   a) Rabi-1
   b) Kharif-2
   c) Both -3
2. (i) How did you decide to grow these crops?

   (ii) Have you made any changes in the cropping pattern recently?

3. What motivates you to continue farming?

4. (i) Are your children also interested in farming? (Yes-1/No-2)
   (ii) Do you think they will be engaged in farming in the future? (Yes-1/No-2)
5. (i) How has your yield been over the past 5 years?

   (increased-1/decreased-2/constant-3)

   (ii) If it has increased then why?

   (iii) If it has decreased then why?

   (iv) Have you been satisfied with it? (Yes-1/No-2)
6. (i) Do you sell all the produce or do you keep some for your own consumption?

(Sell all- 1, keep some for self-consumption-2)

(ii) How much do you keep for your family?

7. What grade/type/quality of rice/wheat do you produce?

   Rice –

   Wheat -

8. Your opinion about the expenses in Agriculture?

i) Inorganic Method	**ii) Organic Method**	**iii) Both Method**
Very High-1	Very High-1	Very High-1
Moderate-2	Moderate-2	Moderate-2
Less-3	Less-3	Less-3

9. (i) Do you get seeds and fertilizers in time? (Yes-1 /No-2)

   (ii) If Yes, Specify

   (iii) If no, give reasons

10. What factors affect your yield?
    - Natural calamities-1
    - Lack of finances -2
    - Diseases -3
    - Lack of Knowledge -4
    - Unavailability of resources -5
    - Others, Specify -6

11. Do you have any
    i) storage place for your yield? Yes-1, No-2, Don't Know -3
    ii) market for your yield? Yes-1, No-2, Don't Know -3
12. (a) What price are you able to get for your produce?
    (b) Is the price:

    Close to MSP-1

    Much higher than MSP-2

    Much less than MSP-3

13. Do you feel that you are able to sell your produce at a competitive price? (Yes-1/No-2)

14. Are you satisfied with the sale year on year? (Yes-1/No-2)
    If No, then Why?

15. What are the main challenges that you face as a farmer in Delhi?
(production, transportation, storage etc.)

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……

……

……

……

……

16. (i) Have you heard of farmer unions/organizations? (Yes-1/No-2)

    (ii) If yes, are you a part of any? (Yes-1/ No-2)

    (iii) Has being a part of farmer unions/organizations been helpful? (Yes-1/No-2)

17. Swaminathan Committee Report has made its recommendations on MSP for Agricultural produce:

    (i) Do you agree with this approach to calculate the MSP? (Yes-1/No-2)

    (ii) If not, how do you think MSP should be calculated?

    (iii) Do you think providing this higher value of MSP will be useful for Delhi's farmers? Or do they already earn a much higher price for their produce?

    (iv) If the government starts to provide this higher MSP, how do you think the farmers will respond? What difference will it make for their cropping and selling decisions?.....

    ……

    ……..

18. Do you think that having a minimum support price for your produce would be helpful for you? Why? Why not?

    ……

    ……..

    ……

……..

……

……..

19. (i) Do you have easy access to credit/ microfinance? (Yes/No)

(ii) If Yes, then from which source you avail the credit facility?

(bank/ private money lenders/ commission agents/relatives/any other)

……

……..

(iv) How often do you avail loans?

(v) How much credit limit do you avail?

(vi) Do you feel that the rate of interest at which you avail credit is fair? (Yes/No)

(vii) If not, then why do you continue to take credit from the same sources?

……

……

……

……

20. What types of assistance or support do you receive from the government?

i) Credit facility/Loan-1

ii) Fertilizer on subsidized rate-2

iii) Improved quality of seed-3

iv) Training-4

v) Any compensation for crop loss-5

vi) Others, specify-6

21. Are you satisfied with this support? Why or why not?

……

……

22. What other support or assistance can the government provide you?

……
……
……
……

Schedule 3
QUALITTAIVE ASSESSMENT (FOR INTERNEDIARIES)

[1] Identifications particulars of Trader/Commission agent:

1.	Sate/UT :					6.	Name of the establishment
2.	District :					7.	Name of APMC in which establishment is registered (if any)
3.	Sub-District/Tehsil :					8.	Address of establishment
4.	Village name :					9.	Response Code:
5.	Sample Unit Number :					10.	Contact No.:

[2] <u>Particulars of information on profile of traders/commission agents:</u>

1: (i) Whether registered under APMC act or not :	YES-1 NO-2
(ii) If yes then the registration number :	
2: (i) Whether registered in any other government agencies:	YES-1 NO-2
(ii) If yes, then the Name of agencies:	
3: Type of crop dealt with:	Rabi-1 Kharif-2 Both-3
4: Type of commodities	Cereals-1 Pulses-2 Vegetables-3 Spices-4 Others-5
5: Nature of enterprise:	Seasonal-1 Perennial-2
6: Type of trade:	Whole sale-1

	Retail-2 Commission Agent-3
7: Weather you have sufficient space for bidding / selling of crop or not :	YES-1 NO-2
8: Do you have digital weight measurement system:	YES-1 NO-2
9: Do you provide any pre-harvesting interest free loan/advance to the farmer	YES-1 NO-2
10: Do you have sufficient space for storage of the commodities purchased	YES-1 NO-2
11: Whether your storage space is safe from insects/rats	YES-1 NO-2
12: Are you aware about minimum support Price	YES-1 NO-2
13: If YES, then do you buy at MSP	YES-1 NO-2
14:Do you ever buy commodities at a price less than MSP	YES-1 NO-2
15:Do you ever buy commodities at a price more than MSP	YES-1 NO-2
16: Do you provide proper printed Cash memo/invoice/bill to the farmer(s)	YES-1 NO-2
17: Whether any mode of digital payment is used in transactions	YES-1 NO-2
18: Do you have any grading facility at your establishment	YES-1 NO-2
19: (i) Do you provide credit facility to farmers	YES-1 NO-2

(ii) If yes, What are terms and conditions of providing loan

19: Type of Storage facility	Owned-1 Rented-2 Others-3
20: Are you maintaining books of account on double entry system	YES-1 NO-2
21: Whether financial statements are being audited	YES-1 NO-2

[3] Descriptive Questions:

1: Type of problems you are facing any type of problem in the present scenario.

2: Suggestions for improving the marketing system of agricultural produce in Delhi.

3: Approximate percentage of wastage/transmission loss during trading/processing of the agricultural commodities.

4: (i) Have you availed any credit facility from Government/Nationalised Banks during last three years (Yes-1/No-2)

(ii) If yes, Specify

[4] : **Approximate expenditure during 2020-21 on (in INR):**

a: purchase of commodities b: Electricity and Transportation c: Salary and wages to the hired workers d: Loading and unloading charges borne by the establishment e: Office /administrative/selling expenses g: Packing expenses h: APMC fees/mandi fees i: Rent of Shop/Godown /selling space j: Interest paid on loans:	
SUB-TOTAL (4)	

[5] Approximate receipts during 2020-21 on:

a: sale of commodities b: receipts from commission c: other income from sale of sub-standard /waste commodities/old packing material d: Interest received from farmers on credited amount	
SUB-TOTAL (5)	

[6] Description of Stock

a: Value of Commodities of Opening Stock (as on 01.04.2020) b: Value of Commodities of Closing Stock (as on 31.03.2021)	
Net variation In Stock (b-a) (6)	

[7] Net profit/loss during last financial year

Figures from above: **(5) + (6) - (4)**	