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Evaluation of Minimum Support Price on Paddy Cultivation in the Indian State of Punjab: A Comprehensive Study

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Abstract

The study evaluates the efficiency of the Minimum Support Price on paddy cultivation in Punjab. The data spanning from 1996–1997 to 2019–20 on area, production, yield, cost of production, operational cost, different cost components, and MSP of paddy in Punjab were collected from the secondary sources. For this study, data were collected from the Directorate of Economics and Statistics and the Commission for Agricultural Costs and Prices (CACP) underneath the Ministry of Agriculture and Farmers Welfare, Government of India. The descriptive statistics and the Compound Annual Growth Rate (CAGR) were used to analyze the collected data with appropriate analytical tools. The study exposed that the area and production of paddy has significantly increased over the year, whereas the yield has decreased. The findings of the study shows that the relative share of the different inputs, adequacy of the MSP in meeting the cost of production, and the percentage difference between the MSP and different cost components have significantly increased over the period. Therefore, the outcome of the study revealed that the MSP has significantly increased and the MSP for paddy to be found very effective in Punjab state.

Keywords: *MSP, Cost of Production, Paddy Cultivation, Sustainable Agriculture, and Punjab*

Introduction

In India, agriculture acts as a primary pillar of economic growth, since independence, this sector helps the county achieve food security and reduce poverty. India has been primarily an agrarian economy since independence, and approximately 70% of the country's population directly or indirectly depend on agriculture for their livelihood. The agricultural sector is vital to the Indian economy and its development is very important for a developing country. The Indian agriculture sector is the engine of the Indian economy because about 70% of the country's population lives in rural area, which is primarily dependent on agricultural or its related activities, hence the development of agriculture sector is very essential for Indian economy. The agriculture sector is a highly labour-intensive sector, according to the 2011 census 54.6% of the country's workforce has interested in farming and related pursuits. Agriculture and related activities contribution in the total Gross Value Added (GVA) has 18.8% according to the Indian economic survey 2021-22. Indian agriculture largely depended on rainfall and traditional agricultural techniques; therefore, agriculture has highly vulnerable to unfavourable climatic and weather condition, hence, peculiarity in climatic factors and non-remunerative prices for the agriculture crop results to diminution in the farmers income (Dhananjaya et al., 2020). Agriculture development is possible through increasing investment in agriculture sector to meet the increasing capital needs of the modern day. The growth of the agriculture industry greatly benefits from institutional lending. Due to the passage of time, farmers tend to shift from the traditional cultivation to modern farming practices in

suit the growing needs of the people. This has urged the farmers to incline toward the cultivation of cash crops so as to reap the highest profitability. Since the colonial era, how crop cost of production and farmer income have changed in India can be inferred from India, whereas large section of the population lives in the rural area and depend on agriculture and allied industries to support themselves and their livelihood. It is very important to make a detailed investigation of costs incurred, returns, and farmers income in order to formulate an appropriate farm policy. The argument has been made that agricultural price policy has also increased disparities in farm income (Singh et al., 1986). The agricultural sector development and the economy as a whole are significantly influenced by agricultural price policy. In order to advance and improve itself, the Indian government performs numerous actions that advance the agriculture situation in India, in which the agricultural price policy like MSP is one of the major components to protect both producer and consumer. Since independence, the Government of India feels to construct a body that think about farmers, and Agricultural Price Commission (APC) came into force in first January 1965. Later it was renamed as the Commission for Agriculture Costs & Prices (CACP) in 1985 to maximise productivity and create a production design that is consistent with all of the nation's demands (Acharya, 1997). In India, after crop harvest the farmers often do not get their fair and reasonable prices for their crops. Further, due to the lack of marketing awareness, storage facilities, huge production, and pressure from creditors, the farmers of the country resort to distress sale of their crops at far below the cost of production of that crop. The government felt that to protect farmers from this distress sale furthermore the MSP was presented by the Government of India in 1966–67. The MSP-driven price policies in Punjab led to a dominant wheat–paddy cropping pattern, which reducing the cultivation of pulses, maize, bajra, and oilseeds (Khowajazada et al., 2022).

The MSP is the price at which the government procure crops from farmers at whatever price prevails in the market. It protects farmers from distress sales and provides sufficient payment to the farmers. All facets of society have benefited from the MSP and input subsidies vital contributions to achieving food security and faster economic growth (Acharya, 1997). The MSP is based on the calculation of the cost of production, demand and supply, and many other factors incurred by farmers. Over time, the MSP has aided Indian farmers in fending off the consequences of market swings. Thus, MSP helps farmers obtain profitable revenue and safeguard satisfactory food grain production in the country. Ironically, this is the basis on which the MSP has declared to safeguard farmers by the Indian government. Therefore, the present study reveals the evaluation of paddy cultivation in Punjab and its methodology adopted by the Government of India in declaring the MSP and the scope, which the MSP meets the actual cost of production.

Data and Methodology

This study is based entirely on secondary data collected from various official sources. Information on paddy cultivation in Punjab—including production, yield, cost of production, and cost of cultivation—was obtained from the Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare, Government of India. The MSP data for different time periods was sourced from the Department of Economics and Statistics via its official website. Descriptive statistics such as means and percentages were used to estimate the share of different inputs in the cost of production and to analyze their changes over time. This study chosen to capture long-term trends and policy impacts on paddy cultivation and MSP in Punjab because this period offers a comprehensive view of how MSP policies influenced cropping patterns and costs, and evaluates the MSP policy over time.

Compound Annual Growth Rate (CAGR)

The quantitative research approach for CAGR has used to estimate the annual growth rate. The exponential function used after altering the original data into a semi-log specification. Finally, the semi-log trend function has used to evaluate the annual rate of growth in the cost of production, cultivation, input costs, and MSP. The semi-log function is used as follows:

There is an exponential form of the growth function as;

$$Y_t = a\, b^t\, e^{ut}$$

Where;

y_t = dependent variable

a = intercept

b = regression coefficient {(1+g), and g = CGR}

t_i = time

The CAGR were intended as follows:

$$Y = ab^t$$

or

$$Y = A(1+r)^t$$

$$\ln Y = \ln A + t \ln(1+r)$$

Let,

$$\ln(A) = a$$

$$\ln(1+r) = b$$

Then,

$$\ln Y = a+b^t$$

$$(1+r) = \text{anti ln of } b^t$$

$$r = ((\text{anti ln of } b)-1)\times 100$$

Where; a = coefficient, b = slope, t = time, and

$$r = (b-1)\times 100$$

When, r × 100 it gives the percentage growth rate basal on the dependent variable. Therefore, r = (Antilog of b-1) × 100 is the CAGR in percentage.

Results and Discussions

Punjab is a state with a large expanse of fertile land in India, and its economy is mostly based on agriculture. Punjab has been the nation's top supplier of food grains since the start of the Green Revolution. Following the Green Revolution and implementation of the MSP the Punjab's overall food grain production increased dramatically, and paddy plays a major role in this increase in agricultural production. Paddy has the second most crop in the state that covers the highest area under the crop, it covers 2831 thousand hectares area of the state (Government of Punjab, 2018). Paddy is a significant cereal crop from both consumption and production perspectives. Punjab is a cereal surplus state and MSP has more beneficial to the cereal surplus state and the state of the country where the highest number of farmers are aware of the MSP (Aditya et al., 2017). Therefore, because of the perception that MSP policy mainly favours surplus states, the state of Punjab, which has a surplus crop surplus is used to study and analyse MSP role and influence to output.

Table:1. Growth in Area, Production, and Yield of Paddy Cultivation in Punjab State

Year	Area	Production	Yield
1996–97	2159	7334	10542
1997–98	2281	7904	10542
1998–99	2519	7940	3152
1999–2000	2604	8716	3347
2000–01	2611	9154	3506
2001–02	2487	8816	3545
2002–03	2530	8880	3510
2003–04	2614	9656	3694
2004–05	2647	10437	3943
2005–06	2642	10193	3858
2006–07	2621	10138	3868
2007–08	2610	10489	4019
2008–09	2735	11000	4022
2009–10	2802	11236	4010
2010-11	2831	10837	3828
2011–12	2818	10542	3741
2012–13	2845	11374	3998
2013-14	2851	11267	3952
2014–15	2894	11107	3838
2015–16	2975	11823	3974
2016-17	2898	11586.20	3998
2017–18	3065	13381.79	4366
2018–19	3103	12821.60	4132
2019–20	2920	11779.28	4034
CAGR	**1.14**	**2.09**	**-1.00**

Source: *Directorate of Economics and Statistics GoI,* www.eands.dacnet.nic.in

Note: Area in thousands of hectares, production in thousand tonnes, and yield is kg per hectare

Agriculture sector plays a significant role in socio-economic and comprehensive development of Punjab. Usually, Punjab was not a paddy-cultivating state. However, Punjab's agriculturalists began growing paddy throughout the green revolution to help fill the depot of the Food Corporation of India (FCI) and ensure the food security of the country (Jigeesh, 2022; Dev, 2023). Punjab has long played a significant role in supporting India's agricultural output and food security. Punjab is one of the leading paddy cultivation states in the nation. It has the third largest paddy-growing state in India, with an area of 2.97 million hectares on which paddy is cultivated (India Today, 2018). Punjab contributes 11.78% of the country's rice production (Government of Punjab, 2022). This study examines the minimum support price of paddy cultivation in Punjab and analyses the growth pattern from the last half and two decades from 1996–1997 to 2019–20. Table 1 illustrates the expansion of paddy farming in Punjab from 1996–1997 to 2019–20 in terms of area, output, and productivity. The growth in the paddy cultivation in Punjab state in Table 1 shows that the area and production of paddy cultivation in Punjab has increased with the CAGR of 1.14% and

2.09%, respectively. In the last 24 years; nevertheless, the yield (kg/hectare) decreases with 1% CAGR and shows a negative growth rate in the yield of paddy cultivation in Punjab over the period of time. Similarly, a study found that increasing MSP significantly shifted cropping patterns in Punjab which leads to a dominant wheat and paddy rotation while plummeting the cultivation of pulses, maize, bajra, and oilseeds amid 1970–71 and 2016–17 (Dhawan, 2019).

Table: 2. Relative Proportions of Various Inputs to the Operational Cost of Paddy Cultivation in Punjab

Year	Labour Cost			Input Cost				Total Operational Cost
	Human	Animal	Machine	Seeds	Fertilizers and Manure	Insecticides	Miscellaneous	
1996–97	3407.69 (33.43)	34.00 (0.33)	1789.07 (17.55)	354.81 (3.48)	1959.53 (19.23)	825.04 (8.10)	1824.52 (17.89)	10194.66 (100)
1997–98	3342.09 (34.96)	25.06 (0.26)	1816.41 (19.00)	397.09 (4.16)	1702.31 (17.81)	767.52 (8.02)	1508.95 (15.79)	9559.43 (100)
1998–99	3716.70 (34.64)	23.71 (0.22)	2164.17 (20.17)	467.06 (4.36)	1880.3 (17.52)	860.08 (8.02)	1617.04 (15.07)	10729.06 (100)
1999–2000	3635.14 (31.84)	11.37 (0.10)	2432.86 (21.31)	529.63 (4.64)	2205.07 (19.32)	922.18 (8.08)	1679.18 (14.71)	11415.43 (100)
2000–01	3857.42 (32.71)	16.98 (0.14)	2435.45 (20.65)	512.69 (4.35)	1956.55 (16.60)	1139.37 (9.67)	1874.89 (15.90)	11793.35 (100)
2001–02	4124.68 (33.47)	32.15 (0.26)	2670.31 (21.67)	557.25 (4.52)	1974.26 (16.02)	1169.39 (9.49)	1797.06 (14.59)	12325.10 (100)
2002–03	5199.93 (29.30)	117.16 (0.66)	3398.72 (19.15)	554.39 (3.12)	2678.62 (15.10)	1179.12 (6.64)	4620.67 (26.03)	17748.61 (100)
2003–04	4525.82 (29.01)	35.03 (0.22)	3068.12 (19.67)	569.48 (3.65)	2507.63 (16.08)	1603.78 (10.28)	3289.7 (21.09)	15599.56 (100)
2004–05	4794.34 (28.60)	89.82 (0.54)	3653.01 (21.79)	595.04 (3.55)	2535.92 (15.12)	1298.26 (7.74)	3797.55 (22.66)	16763.94 (100)
2005–06	4981.22 (32.06)	26.16 (0.17)	2969.02 (19.11)	656.90 (4.23)	2446.74 (15.75)	1439.51 (9.26)	3017.41 (19.42)	15536.96 (100)
2006–07	5161.77 (34.19)	89.83 (0.60)	3029.11 (20.07)	651.28 (4.31)	2466.90 (16.34)	1251.89 (8.30)	2445.46 (16.20)	15096.24 (100)
2007–08	5472.15 (34.17)	90.43 (0.56)	3630.81 (22.67)	725.97 (4.53)	2518.00 (15.72)	1486.25 (9.29)	2089.96 (13.05)	16013.57 (100)
2008–09	8369.91 (39.91)	162.19 (0.77)	4510.37 (21.51)	901.84 (4.30)	3063.68 (14.60)	1977.14 (9.43)	1985.81 (9.47)	20970.94 (100)
2009–10	10047.78 (41.90)	224.09 (0.93)	4942.54 (20.61)	1109.10 (4.62)	2900.74 (12.09)	2104.67 (8.78)	2649.79 (11.05)	23978.71 (100)
2010-11	10485.69 (43.84)	110.49 (0.46)	4569.14 (19.10)	1263.59 (5.29)	3097.10 (12.95)	2279.75 (9.53)	2110.36 (8.83)	23916.12 (100)
2011–12	12117.40 (45.55)	44.30 (0.17)	4372.33 (16.44)	1328.31 (4.99)	3334.92 (12.54)	2672.43 (10.05)	2730.86 (10.26)	26600.55 (100)

2012–13	13320.81 (43.41)	45.83 (0.15)	5098.44 (16.62)	1509.04 (4.92)	4129.84 (13.46)	3159.29 (10.29)	3422.21 (11.16)	30685.46 (100)
2013-14	14221.28 (43.92)	45.65 (0.14)	5576.06 (17.22)	1562.58 (4.82)	4240.38 (13.09)	3716.37 (11.48)	3020.13 (9.33)	32382.45 (100)
2014–15	14718.57 (43.24)	40.87 (0.12)	6371.44 (18.72)	1771.16 (5.20)	3704.80 (10.88)	3928.25 (11.54)	3506.09 (10.30)	34041.18 (100)
2015–16	15528.77 (44.61)	41.82 (0.12)	6020.04 (17.30)	1838.03 (5.29)	3648.39 (10.48)	4458.79 (12.81)	3271.85 (9.40)	34807.69 (100)
2016-17	16348.37 (45.48)	38.11 (0.11)	6359.77 (17.69)	1716.39 (4.78)	3717.12 (10.34)	4426.05 (12.31)	3338.4 (9.29)	35944.21 (100)
2017–18	16649.46 (44.44)	19.61 (0.05)	7149.24 (19.08)	1625.67 (4.34)	3432.73 (9.16)	4146.26 (11.06)	4444.25 (11.87)	37467.22 (100)
2018–19	16664.60 (39.31)	32.37 (0.08)	10184.21 (24.02)	1635.39 (3.86)	3760.09 (8.87)	4920.53 (11.60)	5193.23 (12.26)	42390.42 (100)
2019–20	17000.14 (38.91)	18.58 (0.04)	9559.14 (21.88)	1738.41 (3.98)	4106.42 (9.39)	5624.54 (12.88)	5643.32 (12.91)	43690.55 (100)
Average	4650.12 (39.60)	30.27 (0.26)	2302.57 (19.61)	524.94 (4.47)	1495.68 (12.74)	1225.07 (10.43)	1514.98 (12.90)	11743.65 (100)
CAGR	**8.88**	**0.99**	**6.91**	**7.91**	**3.76**	**9.27**	**4.06**	**7.07**

Source: *Directorate of Economics and Statistics GoI, www.eands.dacnet.nic.in*

Note: *Figures within parentheses indicate percentages of the total.*

For the cultivation of any crop, different types of inputs are used. The share of the different input costs comes under the total operational cost of the crop. There are various inputs of operational cost in paddy cultivation in Punjab. The comparative proportions of the numerous inputs in the operational cost of paddy farming in Punjab from 1996–1997 to 2019–20 is shown in Table 2. The above table reveals the total operational cost, which comprises human labour, animal labour, machine labour, seeds, fertilizers, insecticides, and many other costs. The result of the table illustrates the CAGR of the total operational cost of paddy cultivation in Punjab escalation of 7.07% from 1996–1997 to 2019–20. The table also shows that the CAGR of human labour, animal labour, machine labour, seeds, fertilizers, insecticides, and other costs rise by 8.88, 0.99, 6.91, 7.91, 3.76, 9.27, and 4.06%, respectively, of paddy cultivation in Punjab. The result of the table shows that the share of human labour is the uppermost, followed by machine labour, and the share of animal labour is the lowest in the total operational cost. This is due to the non-availability of human labour and the inflation of mechanical tools. In another side insecticides shows a highest noticeable growth CAGR of 9.27% from 1996–97 to 2019–20, followed by human labour (8.88%) and seed (7.91%). The animal labour CAGR was also the lowest (0.99%) during the study period. Therefore, the cost of cultivation of crops has increasing over the time as compare to the MSP, similarly Gill at el. (2017) reveal that MSP has increasing less significantly as compared to the cost of inputs.

To protect the interests of farmers from reduced market prices, the government purchases the commodities from the farmers at the MSP. The minimum support price is a guarantee price fixed on behalf of the Government of India on the recommendation of CACP to shield farmers from distress sales during bountiful crops, which cause a fall in the prices of the crops. The Government of India announces minimum support prices for every kharif and rabi season, which covers cereals, pulses, oilseeds, and some commercial crops. The MSP is determined on the basis of the cost of production, demand and supply, and price trends in both domestic and international markets. Vaishnavi et al. (2024) found that MSP for the key crops have steadily increased due to the rising costs of inputs and policy support, and that the ARIMA model effectively forecasts MSP trends contribution valuable insights for agricultural policy and food security planning.

Table: 3. Adequacy of MSP in Meeting the Cost of Production

(Rs/Quantal)

Year	MSP	A2+FL	MSP as % A2+FL	C3	MSP as % of C3
1996–97	380	210.54	180.49	384.67	98.78
1997–98	415	211.14	196.55	392.54	105.72
1998–99	440	256.12	171.79	448.69	98.06
1999–2000	490	227.31	215.564	422.95	115.85
2000–01	510	233.57	218.35	424.92	120.02
2001–02	530	240.43	220.44	432.20	122.62
2002–03	550	335.92	163.73	549.28	100.13
2003–04	550	299.13	183.86	487.23	112.89
2004–05	560	296.58	188.82	493.48	113.48
2005–06	570	280.45	203.24	536.01	106.34
2006–07	580	266.69	217.48	525.16	110.44
2007–08	745	275.94	269.99	556.51	133.87
2008–09	900	367.99	244.57	736.85	122.14
2009–10	1000	444.21	225.12	850.50	117.58
2010-11	1000	503.76	198.51	920.11	108.68
2011–12	1080	528.04	204.53	996.77	108.35
2012–13	1250	542.27	230.51	1040.30	120.16
2013-14	1310	607.78	215.54	1147.60	114.15
2014–15	1360	591.34	229.98	1200.93	113.25
2015–16	1410	586.31	240.49	1167.83	120.74
2016-17	1470	607.08	242.14	1201.21	122.38
2017–18	1550	565.10	274.29	1190.79	130.16
2018–19	1750	708.77	246.91	1371.46	127.60
2019–20	1815	776.88	233.62	1480.56	122.59
Average	**925.62**	**415.14**	**217.36**	**789.94**	**115.25**
CAGR	**7.32**	**5.97**	**1.27**	**6.57**	**0.70**

Source: *Directorate of Economics and Statistics, GoI, www.eands.dacnet.nic.in*

The MSP has announced twice a year by the Cabinet Committee of Economic Affairs (CCEA) of the Government of India, as recommended by the CACP. The MSP has been calculated by the CACP to take a comprehensive view of the entire economy. The cost of production is one of the most crucial elements in determining the MSP, and the CACP carefully weighs all costs before suggesting the MSP. While recommending the MSP, the CACP takes into account both the A2+FL and C2 expenses, but just the A2+FL costs for the return. By promising to buy farmers' commodities at specified prices the MSP ensures that farmers receive fair prices for their produce. In addition to raising the MSP, the government has taken other measures to confirm that farmers receive fair prices for their produce. The adequacy of MSP in meeting the cost of production in paddy cultivation in Punjab is shown in the above table, which shows that the MSP as a percentage of the cost of production in A2+FL cost has increased with a CAGR of 1.27%, whereas in C3 cost it increases only 0.70 percent from 1996–1997 to 2019–20. The results show an increasing trend in MSP and production costs. The minimum support price of paddy has increased with a CAGR of 7.32% in the last two and a half decades. The cost of production A2+FL and C3 of paddy cultivation in Punjab has grown with a CAGR of 5.97 and 6.57% respectively in the previous 24 years from 1996–1997 to 2019–20 which is lower than the 7.32 % CAGR of MSP.

Table: 4. Percentage Variance Between MSP and Various Cost Components of Paddy Cultivation in Punjab

Year	MSP	A1	A2	A2+FL	B1	B2	C1	C2	C2*	C3
1996–97	380	114.0	50.21	44.59	47.97	14.9	42.34	9.26	7.97	-1.23
1997–98	415	156.9	54.18	49.12	57.08	19.09	52.11	14.12	14.01	5.41
1998–99	440	117.2	48.61	41.79	49.06	14.04	46.41	7.29	7.29	-1.98

1999–00	490	164.9	58.78	53.61	57.82	26.74	52.62	21.53	21.53	13.68
2000–01	510	179.7	59.31	54.20	60.5	29.34	55.41	24.26	24.26	16.68
2001–02	530	196.0	60.02	54.63	63.07	31.19	57.75	25.87	25.87	18.45
2002–03	550	107.6	46.14	38.92	47.42	16.62	40.24	9.43	9.21	0.13
2003–04	550	154.7	50.53	45.61	56.69	24.44	51.79	19.53	19.46	11.41
2004–05	560	167.3	52.28	47.04	58.88	25.10	53.66	19.89	19.89	11.88
2005–06	570	151.9	55.99	50.79	54.35	19.69	49.17	14.51	14.51	5.96
2006–07	580	175.7	59.21	54.02	58.78	22.85	53.62	17.69	17.69	9.45
2007–08	745	260.2	66.89	62.96	68.04	35.98	64.15	32.09	32.09	25.30
2008–09	900	222.2	63.47	59.11	63.75	30.84	58.48	25.57	25.57	18.13
2009–10	1000	218.0	61.37	55.58	63.87	28.39	58.16	22.68	22.68	14.95
2010-11	1000	193.0	55.04	49.62	61.11	21.62	55.84	16.35	16.35	7.99
2011–12	1080	187.3	58.36	51.11	60.81	23.44	53.64	16.27	16.09	7.71
2012–13	1250	232.4	62.68	56.62	66.63	30.44	60.61	24.42	24.34	16.77
2013-14	1310	214.2	59.89	53.60	64.56	26.62	58.30	20.36	20.36	12.39
2014–15	1360	220.4	62.98	56.52	65.03	26.13	58.62	19.72	19.72	11.69
2015–16	1410	246.6	65.03	58.42	67.52	31.27	60.96	24.70	24.70	17.17
2016-17	1470	246.5	65.28	58.70	67.97	32.27	61.43	25.73	25.71	18.28
2017–18	1550	271.2	69.24	63.54	70.74	35.83	65.06	30.16	30.16	23.17
2018–19	1750	225.4	64.70	59.50	68.27	34.03	63.08	28.85	28.75	21.63
2019–20	1815	217.6	62.20	57.19	66.18	30.93	61.21	25.96	25.84	18.43
Average	**925.6**	**193.4**	**58.85**	**53.20**	**61.09**	**26.32**	**55.61**	**20.68**	**20.59**	**12.65**
CAGR	**7.32**	**2.88**	**1.08**	**1.17**	**1.26**	**2.47**	**1.29**	**3.34**	**3.50**	**17.96**

Source: *Directorate of Economics and Statistics, GoI, www.eands.dacnet.nic.in*

In order to protect farmers from a sudden drop in price, the government purchases certain commodities from them at MSP. It has a vital component of agricultural price policy to protect farmers against any sharp fall in prices. There are different cost components of a crop cultivation in India, for a scientific costing should have consistency in the pricing models employed, which have to be approved and embraced across the nation. The different types of costs are used in India, cost A1 is the corresponding for the tenant cultivator, cost A2 is the cost A1 plus assigned value of own-labour, and in the cost A2+FL is cost A2 plus family labour cost, cost B is cost A plus payment value of owned-land and assigned interest on demand capital and therefore cost C has a comprehensive cost which include total of all costs actual as well as imputed. Table-4 shows the percentage difference between MSP and different cost components of paddy cultivation in Punjab. The result investigates

that CAGR of cost C3 has 17.96 per cent which has a tremendous growth in the year during 1996-97 to 2019-20, whereas CAGR of MSP has only 7.32%. The table clearly shows different cost components has increasing with the time period and the MSP also increasing, and there has positive growth relation in the costs and MSP.

Conclusions

The Government price policy for agricultural crops has assay to provide a compensable price to the farmers, the MSPs has public procurement system, which served well in the country since the 1960 decade. Indian agriculture is the dominant source of livelihood of the people, where about 70% population live in the rural area which has primarily depend upon agriculture and related pursuits for their livelihood. The economic condition of the farmers has not very good, thus MSP has an essential tool to boost their income and to improve the production and productivity. This MSPs are the lifeline of Punjab's farmers and hasty dismantling of the MSP system will strictly affect the livelihood of the farmers. Punjab is a production surplus state and MSP has very effective in this state (Ali et al., 2012). The prime object of the study has to analysis the trends in MSP and cost of production and different inputs cost with their relationship of paddy cultivation in Punjab state. The study reveals that the increase in the percentage of CAGR of MSP has significantly more as compared to the cost of production and inputs cost. However, the CAGAR of both MSP and cost of production in paddy cultivation in Punjab has positive growth rate over the period of the year 1996-97 to 2019-20. In terms of CAGR in the MSP of paddy has 7.32% and A2+FL cost has 5.97%, and in C3 has 6.57% respectively, and there is a significant association amid MSP and cost of production. Therefore, with the increasing in area, production, yield and cost of production, the MSP of crop also increasing which ultimately leads to increase the wellbeing of the farmers.

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