

Original Research Article

Change in Cost of Production and Contribution of Subsidized Inputs in Kh. Paddy Crop

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ABSTRACT

The present study entitled, change in cost of production and contribution of subsidized inputs in kh. paddy crop with objective of estimation of change in cost of production due to subsidized inputs & contribution of subsidized inputs in monetary output of kh. paddy crop. From study it was revealed that, in case of subsidy availed farmers of kh. paddy crop, total cost of cultivation was estimated to be Rs. 34112.67. Benefit Cost ratio at cost C was 1.33. In case of without subsidy availed farmers of kh. paddy crop, total cost of cultivation was Rs. 41841.80 per ha. Benefit cost ratio at cost C was 1.09. From study it was found that, reduction in cost of Rs. 283.89 for subsidy availed farmers of kh. paddy crop in comparison with without subsidy availed farmers of kh. paddy crop. It was also observed that the major contribution i.e. 71.17 per cent of irrigation subsidy in monetary output of kh. paddy crop. Electricity subsidy contributes 25.81 per cent in monetary output of kh. paddy crop. From this, it was concluded that irrigation subsidy contributes highest percentage in monetary output of kh. paddy crop. Hence it is need to invest more on irrigation subsidy followed by electricity subsidy for increasing the yield of farmers.

Keywords

Cost of production, Change, Contribution, Irrigation, Credit, Fertilizer and electricity subsidy

Introduction

Indian economy is predominantly an agrarian economy and its prosperity depends upon the progress of agriculture. So agriculture sector is considered as the backbone of our national economy. Various incentives have been provided for accelerating the growth of agricultural production. Among them, subsidies are considered to be the most powerful ones. Provision of agricultural subsidies is made not only in developing countries like India, but in developed countries of the West also.

The social justification of the subsidies lies in the fact that they should be equally distributed among the regions and groups of society for achieving the goal of rapid growth in agricultural development. During the last two decades, agricultural subsidies in India have increased tremendously. But there has been large inter-regional disparity in the use of agricultural subsidies, which has rather increased over the time. Provision of input subsidies in agriculture has been recommended on the ground that it gives incentives to the farmers to use new technology and increases agricultural production. However, the case against

subsidies rests on the ground that they put heavy burden on the state exchequer and reduce investible surplus and consequently the growth rate of the economy.

Subsidies can be defined as financial aid or financial transfers from the exchequer to certain pre-determined sections of the population or sectors of the economy, with a view to improving the distribution of income or reducing the cost of production or price. They include the payments given for rebate on the sale of handloom fabrics or for loss on the sale of fertilizers, improved seeds, pesticides and agricultural implements, distribution of food grains and promoting exports.

Subsidies in India are in existence from the beginning of the planning era. Government of India is providing different kinds of subsidies for promoting equity and growth in some sectors and areas in the country.

Objectives

- 1) To study the change in cost of production due to subsidized inputs in kh. paddy crop.
- 2) To study the contribution of subsidized inputs in monetary output of kh. paddy crop.

Materials and Methods

The study is based on secondary data on cost of cultivation of selected subsidy availed farmers of kh. paddy crop was collected from Agriculture Price Cell (Dr. P.D.K.V., Akola) for the period 2015-16. 100 subsidy availed farmers of kh. paddy crop was selected. In kh. paddy crop, subsidized inputs like irrigation, electricity, credit & fertilizer were studied.

Irrigation (Water) subsidy

The irrigation subsidy is defined as the difference taken from rates between water supplied for civilian use and agriculture sector use.

Electricity subsidy

Electricity subsidy is defined as the difference taken from per unit rate between commercial sector and agriculture sector.

Fertilizer subsidy

Fertilizer subsidy has been defined as the total fertilizer consumption in kg multiplied by per kg subsidy rates declared by central government.

Fertilizer subsidy rates given by government were Rs. 20.87/ Kg on nitrogen, Rs. 18.67/ Kg on phosphorous and Rs. 15.50/ Kg on potassium subsidy.

Credit subsidy

Credit subsidy is defined as the difference taken from interest rates between commercial sector and agriculture sector. Credit subsidized rate taken for present study was 3.50 %.

Analytical tools

Cost of production due to subsidized inputs in selected crop

In order to accomplish the objective of study, the standard cost concepts were used and benefit- cost analysis was carried out.

Contribution of subsidized inputs in monetary output

Contribution of subsidized inputs in monetary output was worked using Multiple Regression

Model. Secondary data was collected from Agricultural Price Cell.

The multiple regression model

$$Y_p = \alpha + \beta_1 I_{it} + \beta_2 E_{it} + \beta_3 F_{it} + \beta_4 C_{it} + e_{ij}$$

Where,

Y_p = Monetary output

α = Constant

$\beta_1, \beta_2, \beta_3, \beta_4$ are the coefficients

I = Irrigation input subsidy

E = Electricity input subsidy

F = Fertilizer input subsidy

C = Credit input subsidy

e_{ij} = error term

Results and Discussion

Cost of Production of With and Without Subsidy Availed Farmers of Kh. Paddy Crop

Table 1 revealed that, cost of production of subsidy availed and without subsidy availed farmers of kh. paddy crop.

Cost of production of with and without subsidy availed farmers of Kh. paddy Crop

In case of subsidy availed farmers of kh. paddy crop, there were four subsidies availed by farmers i.e. irrigation, electricity, fertilizer and credit subsidy. In case of irrigation subsidy, the subsidy rate on per ha. was added in irrigation input. In case of electricity subsidy estimation, the subsidy rate per unit electricity multiplied by actual consumption of electricity unit and adds in electricity input. In case of fertilizer subsidy, the subsidy rates per kg nutrient was added in the rates of per kg nutrient for estimation of actual subsidy availed to farmers. In case of estimation of credit subsidy for without

subsidy availed farmers, the interest rate @ 3.50 Rs. on cost A added in cost A as a credit subsidy separately. The required units per ha were taken as required for with subsidy farms for comparison between with subsidy and without subsidy farms cost of cultivation.

From table 1, it was observed that, in case of subsidy availed farmers of kh. paddy crop, total cost of cultivation was estimated to be Rs. 34112.67. The cost A which accounted 66.55 per cent of the total cost included variable cost items. The important cost A items were hired human labour, bullock labour, machinery cost, seed cost, manure cost, fertilizer, irrigation and electricity cost which were accounted 16.55 per cent, 6.13 per cent, 7.57 per cent, 3.01 per cent, 6.47 per cent, 7.79 per cent, 0.70 per cent and 7.89 per cent respectively in total cost. The cost A and cost B of kh. paddy crop were Rs. 22681.56 and Rs. 30780.47. Main produce of kh. paddy crop was 27.30 qtl also add 29.20 qtl by produce per ha. Value of total produce was Rs. 45430.90. Per qtl. cost of production of kh. paddy crop was Rs. 1248.77.

From table, it was also revealed that, in case of without subsidy availed farmers, total cost of cultivation of kh. paddy crop was Rs. 41841.80 per ha. The cost A accounted 72.73 per cent of total cost. The important cost A items were hired human labour, bullock labour, machinery cost, seed cost, manure cost, fertilizer, irrigation and electricity which were accounted 13.49 per cent, 4.99 per cent, 6.17 per cent, 2.45 per cent, 5.28 per cent, 13.74 per cent, 1.91 per cent and 12.86 per cent respectively in total cost. The cost A and cost B were Rs. 30431.89 and Rs. 38530.81. Main produce yield was 27.30 qtl also add by produce 29.20 qtl per ha. The value of gross produce of kh. paddy crop was Rs. 45430.90. Per qtl. cost of production for without subsidy availed farmers of kh. paddy crop was Rs. 1532.67.

Table.1 Cost of production of with and without subsidy availed farmers of kh. paddy crop

Sr. No.	Particulars	Units	With Subsidy				Without Subsidy		
			Required Unit	Rate (Rs.)	Rs.	%	Rate (Rs.)	Rs.	%
1	Hired Labour								
	Male	Days	12.23	240.15	2937.03	8.61	240.15	2937.03	7.02
	Female	Days	24.56	110.2	2706.51	7.93	110.2	2706.51	6.47
	Sub Total		36.79		5643.55	16.54		5643.55	13.49
2	Bullock Labour								
	Hired	Days	3.12	396.56	1237.27	3.63	396.56	1237.27	2.95
	Owned	Days	2.15	396.56	852.60	2.50	396.56	852.60	2.04
	Sub Total		5.27		2089.87	6.13		2089.87	4.99
3	Machinery								
	Hired	Hrs	5.2	496.14	2579.93	7.56	496.14	2579.93	6.17
4	Seed	Kg.	56.54	18.16	1026.77	3.01	18.16	1026.77	2.45
5	Manure	Qtl.	24.3	90.84	2207.41	6.47	90.84	2207.41	5.28
6	Fertilizer								
	N	Kg.	79.62	5.9	469.76	1.38	26.76	2130.63	5.09
	P	Kg.	61.2	32.2	1970.64	5.78	50.88	3113.86	7.44
	K	Kg.	18.52	11.64	215.57	0.63	27.14	502.63	1.20
	Total	Rs.	159.34		2655.97	7.79		5747.12	13.74
7	Irrigation	Rs.			260	0.76		800	1.91
8	Electricity	Rs.			2689.64	7.88		5379.28	12.86
8	Plant Protection	Rs.			1265.12	3.71		1265.12	3.02
9	Incidental Charges	Rs.			375.53	1.10		375.53	0.90
10	Repairing Charges	Rs.			216.49	0.63		216.49	0.52
11	Depreciation	Rs.			351.81	1.03		351.81	0.84
12	Land Revenue	Rs.			55.61	0.16		55.61	0.13
13	Interest on Work. Capital	Rs.			1285.06	3.77		1664.31	3.98
14	Cost A				22702.76	66.55		30431.89	72.73
15	Rental Value of Land	Rs.			7516.21	22.03		7516.21	17.96
16	Interest on Fixed Capital	Rs.			582.71	1.71		582.71	1.39
17	Cost B				30801.67	90.29		38530.81	92.09
18	Family Labour								

	Male	Days	8.15	246.48	2008.81	5.89	246.48	2008.81	4.80
	Female	Days	13.2	98.65	1302.18	3.82	98.65	1302.18	3.11
	Sub Total		21.35		3310.99	9.71		3310.99	7.91
19	Cost C				34112.67	100		41841.80	100
20	Yield								
	Main Produce	Qtls.	27.3	1558.62	42550.33		1558.6	42550.33	
	By Produce	Qtls.	29.2	98.65	2880.58		98.65	2880.58	
21	Value of Total Produce	Rs.			45430.90			45430.90	
22	Per Qtl. Cost of Production	Rs.			1249.54			1532.67	

Table.2 Cost and returns of kh. paddy crop

Sr. No.	Particulars	Kh. Paddy	
		With Subsidy	Without Subsidy
1	Yield (Qty)	27.3	27.3
2	Cost A (Rs.)	22681.56	30431.89
3	Cost B (Rs.)	30780.47	38530.81
4	Cost C (Rs.)	34091.47	41841.80
5	Gross Returns (Rs.)	45430.91	45430.91
6	Net Returns Over Cost A (Rs.)	22749.35	14999.02
7	Net Returns Over Cost B (Rs.)	14650.43	6900.10
8	Net Returns Over Cost C (Rs.)	11339.44	3589.11
B:C Ratio at	Cost A	2.00	1.49
	Cost B	1.48	1.18
	Cost C	1.33	1.09
9	Per Quintal Cost of Production		
10	Cost A	830.83	1114.72
11	Cost B	1127.49	1411.38
12	Cost C	1248.77	1532.66
13	Reduction in cost /qtl (over without Subsidy)	283.89	

Table.3 Contribution of subsidized inputs in kh. paddy crop

Particulars	Kh. Paddy			
	Irrigation Subsidy	Electricity Subsidy	Fertilizer Subsidy	Credit Subsidy
Coefficients	0.175*** (0.03)	0.418*** (0.11)	-0.022 (0.02)	0.048 (0.04)
Contribution (%)	71.17	25.81	1.82	1.20
R ²	0.88**			

Note: *** & * Significant at 1% & 10 % level of significance

Cost and returns of Kh. paddy crop

Per hectare production and returns from with subsidy availed and without subsidy availed farmers of cultivation of kh. paddy crop was presented in table 2.

Cost and returns of Kh. paddy crop

From table 2, it was observed that, cost A, cost B and cost C of with subsidy availed farmers of kh. paddy crop were Rs. 22681.56, Rs. 30780.47 and Rs. 34091.47 respectively. Gross returns obtained from kh. paddy crop were Rs. 45430.91. Net returns obtained over cost A, cost B and cost C in case of subsidy availed farmers of kh. paddy crop were Rs. 22749.35, Rs. 14650.43 and Rs. 11339.44 respectively. Benefit Cost ratio at cost A, cost B, cost C were 2.00, 1.48 and 1.33 respectively. Per quintal cost of production at cost A, cost B and cost C were Rs. 830.83, Rs. 1127.49 and Rs. 1248.77 respectively.

From table, it was also revealed that, in case of without subsidy availed farmers of kh. paddy crop, cost A, cost B and cost C were Rs. 30431.89, Rs. 38530.81 and Rs. 41841.80 respectively. Gross returns

obtained from kh. paddy crop were Rs. 45430.91. Net returns obtained over cost A, cost B and cost C in case of without subsidy availed farmers of kh. paddy crop were Rs. 14999.02, Rs. 6900.10 and Rs. 3589.11 respectively. Benefit Cost ratio at cost A, cost B, cost C were 1.49, 1.18 and 1.09 respectively. Per quintal cost of production at cost A, cost B and cost C were Rs. 1114.72, Rs. 1411.38 and Rs. 1532.66 respectively.

From study it was observed that, reduction in cost of Rs. 283.89 for subsidy availed farmers of kh. paddy crop in comparison with without subsidy availed farmers of kh. paddy crop.

Contribution of Subsidized inputs in Kh. paddy crop

Table 3, represents the contribution of selected input subsidies in monetary output of kh. paddy crop.

From table 3, it was also found that in kh. paddy crop, major contribution of irrigation subsidy which constitute 71.17 per cent in monetary output of kh. paddy crop followed by electricity subsidy which contribute

25.81 per cent in monetary output. Credit subsidy contributes 1.20 per cent in monetary output of kh. paddy crop. Fertilizer subsidy shows contribution i.e. 1.82 per cent in monetary output of kh. paddy. From the study it was concluded that, irrigation subsidy contribute highest percentage followed by electricity subsidy. Credit and fertilizer subsidy contributes lowest percentage in total subsidy. Hence it is need to invest more on irrigation subsidy for increasing the yield of kh. paddy crop. The coefficients of ordinary least square in case of electricity subsidy and irrigation subsidy were found positively significant. It was also revealed that, total contribution explained by all subsidy inputs in kh. paddy crop was 0.88 per cent. Lowest contribution of credit and fertilizer subsidy concludes that, there is scope to increase fertilizer use in kh. paddy crop. Similarly more credit is provided on production of kh. paddy in the sense to increase the monetary returns and net profit.

From study it was concluded that, in case of subsidy availed farmers of kh. paddy crop, total cost of cultivation was estimated to be Rs. 34112.67. Benefit Cost ratio at cost C was 1.33. In case of without subsidy availed farmers of kh. paddy crop, total cost of cultivation was Rs. 41841 per ha. Benefit cost ratio at cost C was 1.09. From study it was found that, reduction in cost of Rs. 283.89 for subsidy availed farmers of kh. paddy crop in comparison with without

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References

- Garg B. R., M. S. Toor, M. Goyal and Singh, S. 2011. Distribution of fertilizer subsidies and its impact on cost of cultivation of major crops in Punjab state. *Int. Res. J. Agril. Econ. and Stat.*, Vol. 2 (2): 292-300.
- Kaur R. and Sharma, M. 2012. Agricultural subsidies in India boon or curse. *J. Hum. Social Sci.*, Vol. 2 (4):40-46.
- Kaur R. and Sharma, M. 2012. Agricultural subsidies in India: Case study of electricity subsidy in Punjab state: An analysis. *Int. J. of Scientific and Res. Publications*, Vol. 2 (10): 1-7.
- Sharmeen K. and Chowdhury, S. T. 2013. Agricultural growth and agricultural credit in the context of Bangladesh. *Bangladesh Res. Publications J.*, Vol. 8 (2): 174-179.