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RESEARCH ARTICLE :

An economics analysis of cabbage production in Bemetara district of Chhattishgarh

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SUMMARY : An attempt has been made in the study to examine the production and marketing aspect so fcabbage cropsin Bemetara district. The study was undertaken to estimate the cost of cultivation of cabbager in the study area as the main objectives. The present study was conducted in the Bemetara districts of Chhattisgarh. Hundred farmers were selected randomly from ten village Namely Devarbeeja, Koharia, Bahera, Bansa, from Berla block and Kanteli, Dunda, Padkidih, Mohatara, Kewanchhi, Khandsara from Bemetara block were categorized into marginal, small, medium and large farmers based on their holding size. The primary data were collected for the year 2013-14. The major findings of this study revealed that on an average the cost of cultivation per hectare of cabbage, was calculated as Rs. 64330.05. The cost of cultivation per hectare showed rising trend with the rise in farm size. Cost of production per quintal of these vegetables shows decreasing. The cost of production per quintal of cabbage on an average was worked out to Rs. 165.58. It came to for marginal, small, medium and large farm size, respectively. Overall the input–output ratio of cabbages came to 1:3.46, respectively on the sample farms.

KEY WORDS :
Bemetara, Cabbage, Economics, Input-output ratio

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BACKGROUND AND OBJECTIVES

Horticulture is the most profitable venture at all farming activities as it provides as it ample employment opportunities and slope to raise the income of the farming community. In India the climatic conditions are favorable for a large number of horticulture crops such as fruits, vegetables, root and tuber crops, ornamental, medicinal and aromatic plant production of horticultural crops has witnessed a significant improvement over the year, of the 11 per cent of the total cropped area, horticulture accounts for about 28 per cent of agriculture grass domestic production in India. The vegetable production in India has touched a new height in recent years, placing it as the second largest producer of vegetables in the world, next only to China (Kumar *et al.*, 2005; Kumar *et al.*, 2004a&b; Anonymous, 2012). The growing population and the improving economic status in the country have increased vegetables consumption, both across regions and income groups (Kumar and Mathur, 1996; Kumar,

1998). India exports 404.9 MT (Rs. 45.6 lakes) of cabbage and 829.8 MT (Rs. 33.2 lakes) of cauliflower (Anonymous 2012).Vegetables play an important role in the development of our country by improving the economic and social status of the people India grows the largest number of vegetables from temperate to humid tropics and from sea-level to snowline, Vegetables are excellent source of vitamins, particularly niacin, riboflavin, thiamine and vitamins A and C. They also supply minerals such as calcium and iron besides proteins and carbohydrates. Vegetables combat under nourishment and are known to be cheapest source of natural protective tools.

RESOURCES AND METHODS

The data were collected for the research during November-December 2014 with multi sampling technique. Bemetara district was selected purposively as study area in the first stage, in the second stage Bemetara and Berla Block was selected. In third stage 10 villages Devarbeeja, Koharia, Bahera, Bansa, from Berla block and Kanteli, Dunda, Padkidih, Mohatara, Kewanchhi, and Khandsara from Bemetara block, and in fourth stage 100 farmers (22 marginal, 29 small, 31 medium, and 18 large) were randomly selected for the study. Data was collected with well structured questionnaires were used for personal interview from sample farmers.

Primary data from the farmers was collected through well prepared schedule designed for the study land utilization, cropping pattern and cost of cultivation, sources of irrigation, and yield per unit of area. The marketing information will also be recorded on designed schedule time of sale, place of sale, price received in different weeks, quantity sold in different months, whom to be sold. Data also include cost rendered on different means of transportation, expenditure incurred on labour, mandi fee and commission afforded by farmers.

Analytical procedure :

Cost of production :

The cost of cultivation of cole crops was estimated by simple average and percentage methods by dividing the total cost of cultivation on following subcosts.

– Variable cost – (includes inputs cost)

– Fixed cost – (includes land revenues and rental value of land)

– Marketing cost – (includes marketing charges like transportation, mandi fee & loading-unloading charges paid by the producer).

– Cost and return of farms

Family Labour Income = Net Income + Family Labour

Farm Business Income = Family Labour Income + Interest on Working Capital + Rental Value of Land

Input - Output ratio = Output / Input

OBSERVATIONS AND ANALYSIS

The results obtained from the present study as well as discussions have been summarized under following heads :

Cost of cultivation of cabbage crop :

Cost of cultivation includes both variable as well as fixed cost of the production process. The variable cost which is taken here for calculating cost of cultivation of cabbage includes human labour, bullock labour, machine power, seed, fertilizer, micro nutrient, plant protection chemicals, irrigation charges and interest on working capital whereas fixed cost includes, rental value of own land, land revenue and depreciation. The economics of cabbage crop is presented in Table 1 and it clearly shows that the cost of cultivation per hectare of cabbage was higher on large farms as compared to marginal farms. At overall level maximum variable cost was incurred on total human labour which was 36% (Rs. 21583.92) of total cost of cultivation. Whereas maximum fixed cost was incurred on rental value of land, which was Rs. 10000 and 15.54% of total cost of cultivation. On an average the cost of cultivation per hectare of cabbage was found to be Rs. 64330.05 per hectare at over all level. The cost of cultivation in case of large farm was higher (Rs. 66715.22/ha) as compared to marginal farms (Rs. 57951.32/ha), small (Rs. 58744.34/ha) and medium farms (Rs. 61925.36/ha). The similar kind of results reveald by (S.F. Ravekar, P.M. Tayade and M.M. Jakate), the average cost of cultivation of cauliflower was Rs.79478.62 and Cabbage is Rs. 72462.99, respectively. Per farm yield obtained from cauliflower is. 266.64qtls and cabbage is 253.05qtls. It was due to the fact that the large farmers incurred more expenditure on modern farm input like quality seed, fertilizer, plant protection material, hired labour etc. as a their capabilities of investment on major inputs which result better

economic status compared to marginal, small and medium farmers.

Yield, value of output and cost of production per quintal :

The yield, value of output per hectare and cost of production per quintal of cabbage on the sample farms have been worked out in Table 2. It indicates that the average yield per hectare of cabbage was 388.51 quintal on the sample farmers. The cost of production per quintal of cabbage on an average was worked out to Rs. 165.58. It came to Rs. 195.58, Rs. 177.80, Rs. 139.50 and Rs. 141.26 for marginal, small, medium and large farm size, respectively. It decreased with the increased in the size

Table 1: Economics of cabbage on different farm size groups farm (Rs./ha)

Sr.No.	Particulars	Farm size				
		Marginal	Small	Medium	Large	Average
1	Family human labour	12500.50 (21.57)	10529.41 (17.92)	9067.87 (14.64)	2242.34 (3.36)	4770.33 (7.41)
2	Hired labour	8547.95 (14.75)	9411.76 (16.02)	11891.40 (19.20)	19602.92 (29.38)	16813.59 (26.13)
3	Total human labour	21048.45 (36.32)	19941.18 (33.95)	20959.28 (33.85)	21845.26 (32.74)	21583.92 (33.55)
4	Bullock labour	2600.00 (4.49)	1600.00 (2.72)	800.00 (1.29)	0.00 (0.00)	257.46 (0.40)
5	Machine power	2450.00 (4.23)	2450.00 (4.17)	2450.00 (3.96)	2450.00 (3.67)	2448.73 (3.80)
6	Seed	3301.37 (5.70)	3995.10 (6.80)	3733.03 (6.03)	9138.808 (13.70)	7567.97 (11.76)
7	FYM/Fertilizer	8664.38 (14.95)	8750.00 (14.90)	7850.68 (12.68)	9378.10 (14.06)	9079.81 (14.11)
8	Micronutrient	1782.19 (3.08)	2818.63 (4.80)	3056.56 (4.94)	3224.82 (4.83)	3052.88 (4.74)
9	Plant protection	4487.67 (7.74)	4634.80 (7.89)	7875.57 (12.72)	6062.044 (9.09)	5997 (9.32)
10	Weediside	925.34 (1.60)	1017.16 (1.73)	1606.33 (2.59)	759.12 (1.14)	876.72 (1.36)
11	Irrigation charges	732.88 (1.26)	698.53 (1.19)	733.03 (2.59)	661.68 (0.99)	678 (1.05)
12	Interest on working capital	1196.91 (1.03)	821.07 (1.40)	748.64 (1.18)	877.94 (1.32)	835.12 (1.29)
A.	Total variable cost	46589.10 (80.39)	46726.47 (79.54)	49813.12 (80.44)	54397.77 (81.54)	52377.61 (81.42)
B.	Fixed cost					
14	Rental value of land	10000.00 (17.26)	10000.00 (17.02)	10000.00 (16.15)	10000.00 (14.9)	10000 (15.54)
15	Land revenue	12.00 (0.02)	12.00 (0.02)	12.00 (0.02)	12.00 (0.02)	12 (0.02)
16	Depreciation	1350.22 (2.33)	2005.87 (3.41)	2100.24 (3.39)	2305.45 (3.46)	1940.44 (3.01)
	Total fixed cost	11362.22 (19.61)	12017.87 (20.46)	12112.24 (19.56)	12317.45 (18.46)	11952.44 (18.57)
C.	Gross cost=(A+B)	57951.32 (100.00)	58744.34 (100.00)	61925.36 (100.00)	66715.22 (100.00)	64330.05 (100.00)

Figures in parentheses are per cent to the total.

Table 2 : Per ha yield value of output and cost of production cabbage crop

Particular	Farm size				
	Marginal	Small	Medium	Large	Average
Gross Cost (`/ha.)	57951.32	58744.34	61925.36	66715.22	64330.05
Yield (q/ha)	307.53	330.39	443.89	472.26	388.51
Price(`per q)	500.00	500.00	500.00	500.00	500.00
Value of Production (`/q)	153765	165445	221945	236130	194255
Cost of production (`/q)	195.17	177.80	139.50	141.26	165.58

Table 3 : Cost and return of cabbage on the sample farms for different group of farms

Particular	Farm Size				Average
	Marginal	Small	Medium	Large	
Gross cost (`)	60023.51	58744.34	61925.36	66715.22	64330.05
Gross return (`/ha)	153765	165445	221945	236130	194255
Net income (Rs.)	95815.8	106451.7	160020.3	169416.2	158373.3
Family labour income (Rs.)	108316.3	116981.1	169088.2	171658.5	163143.7
Farm business income (Rs.)	108913.1	117802.2	169836.9	172536.4	163978.8
Input –output ratio	1:2.65	1:2.81	1:3.58	1:3.53	1:3.46

of farm due to higher yields in return to the cost of cultivation on the large farm. Rathore, N. S. (1993) also found Cost of production per quintal of these vegetables shows decreasing trend with increase in farm size where as cost of cultivation increase with increase in the farm size. The average value of production per hectare came to Rs. 194255. It was Rs.153765, Rs. 165445, Rs. 221945, and Rs. 236130 on marginal, small, medium and large farm, respectively. The higher value of output on large farms was associated with the higher yield.

Measures of Farm Profit :

The values of net income, family labour income and farm business per hectare the sample farms of different size groups have been worked out in the Table3.

The perusal of Table 3 indicates that, on an average the value of net average family labour income and farm business income per hectare came out to be Rs. 163143.7 and Rs. 163978.8, respectively, on the sample farms of different sizes. Overall on an average the input-output ratio of cabbage came to 1: 3.46 on the sample farms. S.F. Ravekar, P.M. Tayade and M.M. Jakate also found the cost return ratio of cabbage is 1: 2.65. The cost of cultivation per hectare showed a rising trend with the increase in size of farm.

Conclusions :

The average the cost of cultivation per hectare of cabbage was calculated as Rs. 64330.05. The cost of cultivation per hectare showed rising trend with the rise in farm size. Cost of production per quintal of the sevege tables shows decreasing. The cost of production per quintal of cabbage on an average was worked out to Rs. 165.58. It came to for marginal, small, medium and large farm size, respectively. Overall the input–output ratio of came to 1:3.46 on the sample farms, which proves the ratio is very profitable and beneficial for the farmers.

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