An Economic Analysis of Wheat Production in Seoni District of Madhya Pradesh

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Abstract: *An attempt has been made in the study to deal with entitled "AN ECONOMIC ANALYSIS OF WHEAT PRODUCTION IN SEONI DISTRICT OF MADHYA PRADESH." was considered in the year 2020-21 with the objective to estimate the costs and return of wheat in the study area. The research was carried out in kurai block of Seoni district (M.P.), where wheat is a major cereal crop. For the selection of villages and farmers, a proportional random sampling approach was used. A sample of five villages from this tehsil was chosen at random. A random sample of 104 farmers was selected. Total cost of cultivation was found to be the highest in case medium size of farm is 37078.4followed by small size 36856.10, marginal size 35281.06 and large size 35043.0 respectively. Hence, overall total cost of cultivation was found to be Rs. 38026.9 per hectare. The average productivity and gross return of study area of wheat was recorded 34.9 q/ha and Rs. 68543.9 respectively. Net return at cost C2 is 33158.8. Per quintal cost of production is maximum in marginal size farm Rs 1941.0 followed by small size Rs 1935.0, medium size Rs 1869.0, and large size Rs 1844.0 respectively. Improved variety seeds resulted in increased production and return as required by farmers. To build storage facilities to safeguard farmers against forced sales and to increase the value of their goods.*

Keywords: Wheat cost and return, cost concept, income: output ratio, benefit: cost ratio gross return, net return

1. Introduction

According to the Economic Survey, 2017-18, the agriculture sector has taken enormous importance in our economy, contributing roughly 17% of India's gross domestic product and about 10% of Indian exports (Sunder, 2018). Wheat, the most important cereal crop in North India, accounts for around 34.6 percent of the country's total food grain production. India is the world's second-largest wheat grower, with an annual output of 997 lakh tonnes (FAO Trade Statistics, 2018). Global wheat output and consumption were 732 million mt and 738 million mt, respectively, in the 2018/2019 season, down 30 million mt in production and 5 million mt in utilization from the previous season. The USDA announced its projected projections for the 2019/2020 season in May 2019, expecting world output at 777 million mt and global consumption at 759 million mt, up from 777 million mt and 759 million mt for the previous season. (U.S. Wheat Associates).Due to excess domestic supply, India's wheat consumption is expected to rise to 93 million tonnes in 2020-21, following a period of stagnation. According to the USDA, wheat utilization for feed and residue is projected to be 6.5 million tonnes, up from 6 million tonnes the previous year (Food and agriculture organization of united nation).

The Government of India has developed a system of institutions with the goal of supporting, controlling, and stabilizing food grain prices in India, as well as ensuring basic food availability at reasonable prices to the people, as a result of the severe food grain crisis of the mid-1960s and past experience. The Commission on Agricultural Costs and Prices (CACP), Food Corporation of India (FCI), and State Civil Supplies Corporations/Departments are all part of the system. The CACP researches costs, prices, and markets and makes recommendations to the government. The FCI is primarily responsible for the national government's grain management, which includes acquisition, transportation, storage, and release of grain (Vasant P. Gandhi 2006).

Objective - To estimate the costs and return of wheat in Seoni district of Madhya Pradesh

2. Methodology

In Madhya Pradesh having 52 districts out of which Seoni district was selected Purposely avoid the operational in convenience of the investigator. Out of 8 blocks of Seoni district, one block kurai selected purposively because it covers the maximum production of wheat than that of other blocks. A sample of 12% respondents from each category of farm size was selected in village using probability proportional to size techniques. Out of 866 farmers 104 farmer were selected for the study. The primary data includes information on the demographic characteristics of sampled farmers, land use patterns, irrigation sources, agricultural patterns, and cultivation costs. The secondary data was collected from various sources i.e. District administrative office Seoni. Agriculture statistic, and other government and non-government agencies.

Cost of cultivation

To work out the cost of cultivation standard Cost concept were used which includes cost A1, cost A2, cost B1, cost B2, cost C1, cost C2 and cost C3.
Cost A1: Consist of following 16 items of costs.

1) Value of hired human labor (permanent & casual).
2) Value of hired and owned bullock labor.
3) Value of hired and owned machinery.
4) Value of seed (both farm-produced and purchased).
5) Value of manure (produced on farm and purchased) and fertilizers.
6) Value of insecticides and fungicides.
7) Irrigation charges.
8) Land revenue and other taxes.
9) Depreciation.
10) Interest on the working capital.
11) Miscellaneous expenses (wages of artisans, and repairs to small farm implements)

Cost A2 = Cost A1 + rent paid for Leased-in Land.

Cost B1 = Cost A1 + interest on value of Owned Capital assets (excluding land).

Cost B2 = Cost B1 + rental value of owned land + rent for leased in land

Cost C1 = Cost B1 + imputed value of Family Labor.

Cost C2 = Cost B2 + imputed value of Family labor.
Cost C3 = Cost C2 + 10 percent of cost C2 as managerial cost

- Interest on working capital It was calculated @ 4% per annum for half of the crop period.
- Interest on fixed capital It was calculated @ 10% per annum for the crop period.
- Rental value of owned land It was calculated based on the prevailing rates in the sampled villages.

Input: output ratio:

It is ratio between input and output and computed by dividing value of total output by value of total input.
Input output ratio = O/I
Where, I = Total input and O = Total output.

3. Result and Discussion

In table it is shown that overall variable cost was found to be 25416.3 (66.84%) over total cost Rs. 38026.90. Overall Fixed cost was found to be Rs. 12609.9(33.16%) over total cost Rs. 38026.9. Total cost of cultivation was found to be the highest in case medium size of farm is 37078.47 followed by small size 36856.10, marginal size 35281.06 and large size 35043.0 respectively. Hence, overall total cost of cultivation was found to be Rs. 38026.9 0 per hectar.

Table 1: Cost of wheat cultivation in Seoni district (Rs/ha)

S.no.	Items	Farm size				
		Marginal	Small	Medium	Large	Overall
a.	Variable cost					
1.	Family human labor	2952.0 (8.36)	2758.4 (7.48)	2214.7 (5.97)	1801 (5.13)	2469.5 (6.49)
2.	Hired human labor	1590.5 (4.50)	1573.4 (4.26)	1930.3 (5.20)	1527. 5 (4.35)	1835.2 (4.82)
3.	Bullock labor	2049.0 (5.80)	2126.5 (5.76)	0.0	0.0	1091.4 (2.87)
4.	Machine charge	8984.2 (25.46)	10349.0 (28.07)	10535.2 (28.41)	8375.9 (23.91)	10817.1 (28.44)
5.	Seed cost	3580.2 (9.80)	3624.1 (9.83)	3789.5 (10.22)	4025.2 (11.48)	4036.8 (10.61)
6.	Fertilizer and Manure	1781.9 (5.05)	2647.1 (7.18)	3911.6 (10.54)	4735.9 (13.51)	3239.1 (8.51)
7.	Plant protection	285.2 (0.82)	378.2 (1.02)	351.2 (0.94)	411.2 (1.17)	353.1 (0.92)
8.	Irrigation charge	716.8 (2.03)	655.9 (1.77)	566.8 (1.52)	664.2 (1.89)	812.2 (2.13)
9.	Interest on working capital	707.2 (2.01)	745.6 (2.02)	796.4 (2.14)	797.9 (2.27)	762.7 (2.00)
10.	Sub Total	22946.3 (65.05)	24857.5 (67.45)	24095.5 (64.99)	21927.8 (62.58)	25416.3 (66.84)
b.	Fixed Cost					
1.	Depreciation	437.2 (1.23)	270.2 (0.73)	171.2 (0.46)	98.6 (0.28)	246.3 (0.64)
2.	Revenue on land	42.5 (0.12)	18.6 (0.05)	10.0 (0.02)	4.9 (0.01)	19.1 (0.05)
3.	Rental value	10507.3 (29.78)	10411.9 (28.25)	11478.2 (30.95)	11450.3 (32.67)	10977.0 (28.86)
4.	Miscellaneous charges	485.9 (1.37)	287.3 (0.77)	177.6 (0.47)	207.5 (0.59)	284.4 (0.74)
5.	Interest on fixed capital	861.5 (2.44)	1011.5 (2.74)	1145.8 (3.09)	1353.8 (3.86)	1083.2 (2.84)
6.	Sub Total	12334.1 (34.95)	11999.5 (32.55)	12982.7 (35.01)	13115.2 (37.42)	12609.9 (33.16)
7	Grand total (a+b)	35281.1 (100.0)	36856.1 (100.0)	37078.4 (100.0)	35043.0 (100.0)	38026.9 (100.0)

(Figures in brackets indicate percentage to the total)

The production of wheat in terms of yield per hectare was found to be the highest in large size farm 35.5 quintal per hectare followed by 34.5, 33.0 and 32.0 q/ha in medium, small and marginal size farm respectively. The value of grain yield per hectare was Rs. 65976.1 in large size farm followed by small size farm Rs64063.27, medium size Rs. 63651.4 and marginal size Rs 61929.7 respectively.

Net return over C1 is maximum in large size Rs 46663.0 followed by marginal size Rs 42554.8, medium size Rs 41142.5, and small size Rs 40559.2 respectively and net return over C2 is maximum in large size Rs 356156.0 followed by marginal size Rs 32047.5, medium size Rs 30147.7, and small size Rs 29664.3 respectively while net return over C3 is maximum in large size Rs 32229.1 followed by marginal size Rs 27139.4, medium size Rs 25996.3, and small size Rs 25336.9 respectively. Overall net return over cost concept was found to be Cost A1/A2 Rs 46677.9, Cost B1 was Rs. 46585.8, Cost B2 was Rs 35608.9, Cost C1 was Rs. 44136.5, Cost C2 was Rs. 33158.8 and Cost C3 was Rs. 28962.8 Per hectare.

Table 2: Net return over cost concept of wheat production of different size farms (Rs/ha)

| Particulars	Size group				
	Marginal	Small	Medium	Large	Overall
Net return over cost A1/A2	46368.7	44329.1	44504.1	50220.0	46677.9
Net return over cost B1	45506.8	43317.6	43357.2	48866.6	46585.8
Net return over cost B2	34999.5	32905.7	31879.0	37416.6	35608.9
Net return over cost C1	42554.8	40559.2	41142.5	46663.0	44136.5
Net return over cost C2	32047.5	30147.7	29664.3	35615.6	33158.8
Net return over cost C3	27139.4	25336.9	25996.3	32229.1	28962.8
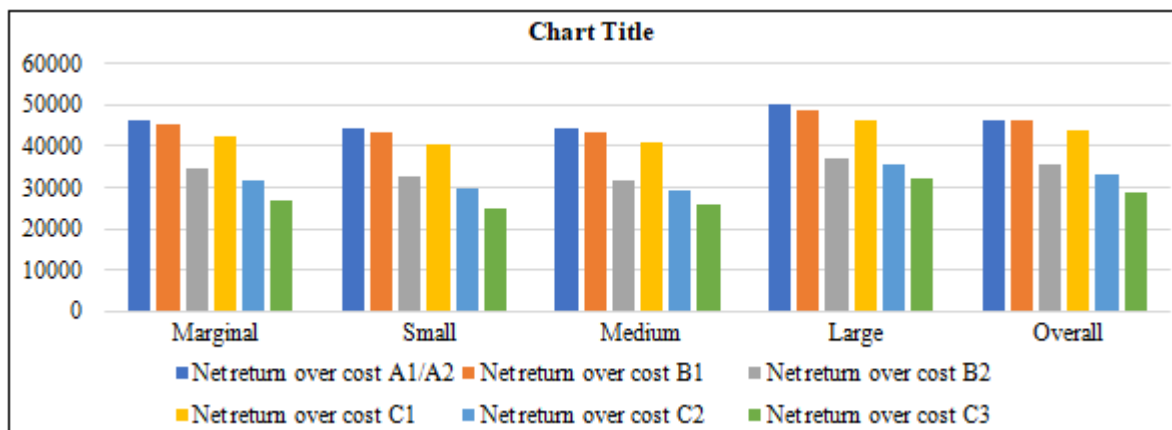
Figure 2: Net return over cost concept of wheat production of different size farms (Rs/ha)

Showed, Net income is maximum in large size Rs 32229.1 followed by marginal size Rs 27139.4, medium size Rs 25996.3, and small size Rs 25336.9 respectively. Per quintal cost of production is maximum in marginal size farm Rs 1941.0 followed by small size Rs 1935.0, medium size Rs 1869.0, and large size Rs 1844.0 respectively. Benefit cost ratio for marginal, small, medium and large size farm is 1:1.96, 1:1.84, 1:1.80 and 1:2.00 respectively.

Table 3: Aggregate profitability of wheat production on various farm size (Rs/ha)

| S. No	Farm size	Net income	Family labor income	Farm business income	Farm investment income	Cost of production (Rs/q)	B:C Ratio
1.	Marginal	27139.4	34999.5	46368.7	27139.5	1941.0	1:1.96
2.	Small	25336.9	32905.2	44329.2	25337.0	1935.0	1:1.84
3.	Medium	25996.3	31879.0	45494.2	25996.3	1869.0	1:1.80
4.	Large	32229.1	37416.6	50220.4	30722.5	1844.0	1:2.00
5.	Overall	28962.8	35608.9	46677.9	28962.8	1880.0	1:1.93
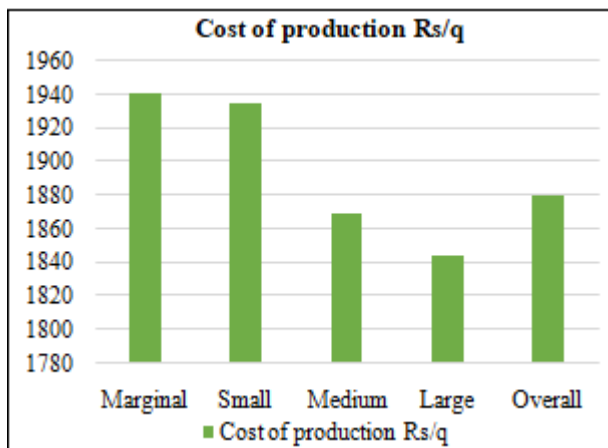
Figure 3: Cost of production for wheat cultivation of different size of farms (Rs/q)

marketed and marketable surplus of wheat production in Gwalior district of Madhya Pradesh. Indian Journal of Extension Education Vol. 54, No.

4. Conclusion

The main objective of this study to estimate the costs and return of wheat in the study area. Total cost of cultivation was found to be the highest in case medium size of farm is 37078.47 followed by small size 36856.10, marginal size 35281.06 and large size 35043.00 respectively. Hence, overall total cost of cultivation was found to be Rs. 38026.90 per hectare. Gross income a sum of value of main product and value of by-product of wheat had maximum Rs. 71070.40 in case of large size farm followed by medium size farm (Rs. 66344.20), small size farm (Rs. 66004.00) and marginal size farm (Rs. 65127.60) respectively in study area. The average productivity and gross return of study area of wheat was recorded 34.90 q/ha and Rs. 68543.98 respectively. Overall net income is 28962.8, Family labor income is 35608.90, Farm business income is 46677.90, Farm investment income is 28962.80 and B:C Ratio is 1:1.93.Per quintal cost of production is maximum in marginal size farm Rs 1941.00 followed by small size Rs 1935.00, medium size Rs 1869.00, and large size Rs 1844.00 respectively.

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