CODEN: IAASCA **ORIGINAL ARTICLE**

An Economic Analysis of Wheat and Paddy Cultivation In Kurukshetra District Of Haryana

Sunil Saini[1], Parveen Kumar Nimbrayan[2]*, Amar Jeet[1]
[1]Department of Agriculture and Farmer welfare, Govt. of Haryana
[2]Department of Agricultural Economics, CCSHAU, Hisar-125004
*Corresponding author's E-mail: parv2509@gmail.com

ABSTRACT
An attempt was made to study the economic analysis of wheat and paddy cultivation in Kurukshetra district of Haryana. Kurukshetra district was selected purposively for study. The primary data were collected by personal interviews of the selected farmers with the help of a specially designed schedule. Simple statistical tools like averages and percentages were used for processing the data. The overall findings of the study revealed that the rental value of land contributes maximum to the total cost of production in each category of the farmer followed by harvesting and threshing. The large category farmers were getting the higher returns as compare to the medium and small farmers main reason is large farmers have their own farm machinery. As the finding of study suggest that paddy is more profitable than wheat to all the three categories of farmers. To minimize the cost, farmers have to adopt improved technology, judicious use of fertilizers, crop diversification, eliminating the middlemen, fixing forming Farmers Producer Organizations
Key words: *Economic, Paddy, Wheat.*

CITATION OF THIS ARTICLE
S.Saini, P Kumar Nimbrayan, A Jeet. An Economic Analysis of Wheat and Paddy Cultivation In Kurukshetra District Of Haryana. Int. Arch. App. Sci. Technol; Vol 10 [3] September 2019 : 28-31

INTRODUCTION

Agriculture sector witnessed inconsistent growth during last several years. But it is still mainstay of Indian Economy. It is contributing about 17.32 per cent (Economic Survey) of the national income and providing employment to about 54.6 percent (Census 2011) of the total work force in the country. Wheat and Paddy are the main food grain crops grown in India as well as in Haryana. India has become self-sufficient in food grains as the production of food grains has achieved a record level of 271.98 million tonnes in 2016-17 which is quite higher as compare to the 251.57 million tonnes in 2015-16. Agricultural exports accounted 12.1 per cent of India's total exports for the year 2014-15 [1, 3-4].

Agriculture sector also plays a considerable role in the economy of Haryana and predominantly it is an agriculture economy. The area under wheat and rice is continuously increasing in the state. The increase in area under wheat in the state is on the cost of decrease in area of other *Rabi* crops such as barley, gram etc. while the increase in area under rice is on the cost of decrease in area of Jowar, bajra, maize etc. These clearly indicate that the cropping pattern in the state is skewed towards the wheat rice rotation [5, 6]. This mono cropping pattern becomes unsustainable mainly for small and marginal farmers in addition to agriculture farmers have to adopt other enterprises like dairy farming, mushroom cultivation, bee keeping, fisheries etc. the combination of more than one enterprise is helpful in pulling out of the vicious circle.

MATERIAL AND METHODS

To assess the economics of wheat and Paddy cultivation a primary survey was undertaken in Kurukshetra district of Haryana state by using the multi stage stratified random sampling technique for the study. From Kurukshetra district Thanesar and Pehowa blocks were selected randomly. Six villages were selected three from each block Jyotisar, Umri and Sunderpur were selected from Thanesar block and Malikpur, Bohr Seda, Alwa were selected from Pehowa block. All the farmers of selected villages were classified into three categories namely, small (2.0 ha.), medium (2.1-6.0 ha.) and large farmers (above 6.0 ha.). a sample size of 23 farmers i.e. 15 were small (65.21%), 06 were medium (26.08%) and 02 were large farmers (8.69%). Data was collected using pre-tested and well-structured interview schedule. Collected data corresponding to the year 2009-10.

RESULT
Economics of Wheat Production

The expenses incurred on paddy and wheat are categorized into four groups *i.e.* fixed cost, variable cost, management charges and risk factor. Fixed cost includes rental value of land, preparatory tillage and pre-sowing irrigation and variable cost included cost of seed, sowing, fertilizer, irrigation, weeding, harvesting, thrashing and other charges. Average per hectare total expenses on three specified categories of wheat farmers were computed which is presented in the table. 1.

It was observed from the table 1 that the average cost of wheat production was Rs. 57106.42 per hectare out of that 28.90 per cent was variable cost and 65.31 percent was fixed cost. Per hectare total variable cost was highest among small farmers followed by medium and large farmers but the fixed cost was comparatively highest of large farmers followed by medium and least in case of small farmers. In case of small farmers variable cost expense incurred on threshing accounted maximum share of variable cost (6.38%) followed by harvesting (5.80%) and expense on fertilizers (4.43%) among medium farmers harvesting (4.49%) accounting the maximum share of variable cost followed by fertilizers (4.82%) and then thrashing (3.89%) while fertilizers contributed maximum (5.12%) followed by harvesting (3.64%) and threshing (3.21%) for large farmers.

Among the fixed costs, rental value of land accounted for 53.61%, 59.84% and 64.67% for small, medium and large farmers respectively from total cost.

Table 1: - Economics of wheat production.(In Per cent)

Sr. No.	Particulars	Size of farm		
		Small	**Medium**	**large**
1	Variable cost			
	Seed value	2.90	2.98	2.90
	Sowing	3.52	3.15	1.56
	Fertilizers	4.43	4.82	5.12
	Irrigations	2.47	1.78	1.89
	Weeding/Hoeing	1.91	2.10	2.22
	Plant protection chemicals	1.34	1.69	2.38
	Harvesting	5.80	4.49	3.64
	Threshing	6.38	3.89	3.21
	Transportation	1.24	0.94	0.83
	Interest on working capital @ 9% for six months	2.70	2.32	2.14
	Total Variable cost	32.08	28.15	25.90
2.	Fixed costs			
	Rental value of land	53.61	59.84	64.67
	Preparatory tillage	6.95	6.15	3.98
	Pre-sowing irrigation	0.22	0.23	0.27
	Total fixed cost	60.79	66.22	68.91
3.	Management charges	3.27	2.82	2.59
4.	Risk factor	3.27	2.82	2.59
	Total cost (1+2+3+4)	100	100	100

Cost and Income measures of Wheat cultivation

Cost and Income measures are presented in Table No. 2. The gross income per hectare, on an average worked out to be Rs. 59812.71 but it was much higher in case of medium (Rs. 59225.55) followed by small (Rs. 62205.20) and least among large farmers (Rs. 58007.39). an average net income per hectare was Rs.2706.36 it was maximum in case of large farmers Rs. 3691.93, for medium it was Rs. 2612.48 and least in case of small farmers Rs. 1814.66. Similar findings were also reported by Chandra (2006) and Kaur (2010).

The average wheat production was 54.37 qtl/ha production of wheat was obtained highest by small farmers (56.55qtl/ha) followed by medium (53.84qtl/ha) and least for large farmers (52.73 qtl/ha). Benefit Cost Ratio maximum in case of large farmer's i.e.1.06, for medium 1.04 and 1.03 for small farmers.

Table No.2: - Cost and Income measures of Wheat cultivation (In Rs/Hectare)

Particulars	Small	Medium	Large
Total variable cost	19733.60	15937.90	14070.28
Total fixed cost	36710.30	37487.60	37431.24
Total cost	60390.60	56613.10	54315.56
Gross return	62205.20	59225.55	58007.39
Net return	1814.66	2612.48	3691.93
Benefit Cost Ratio	1.03	1.04	1.06

Economics of Paddy Production

It was observed from the table no 3. that the average cost of Paddy production was Rs. 56970.97 per hectare out of that 28.14 per cent was variable cost and 66.23 percent was fixed cost. Per hectare total variable cost was highest among small farmers (Rs.17945.36) followed by medium (Rs. 15842.12) and least in case of large farmers (Rs. 14379.80) but the fixed cost was comparatively highest of large farmers (Rs.38140.38) followed by medium (Rs. 37981.70) and least in case of small farmers (Rs. 36990.05). Harvesting and Threshing accounted maximum share of variable cost (11.25%) for small farmers and (7.37%) for medium farmers followed by transplanting (5.34%) for small and (5.07%) for medium farmers.

In case of large farmers maximum share of expenditure was on harvesting and threshing Rs, 3125.00 (5.64%) followed by fertilizers Rs.2850.00 (5.14%) respectively. The minimum share was expense on seed treatment for all the three categories i.e. small, medium and large farmers. Among the fixed costs, rental value of land accounted for 55.32%, 59.44% and 63.41% to the total cost for small, medium and large farmers respectively. Preparatory tillage was comparatively highest in case of small farmers which decrease as the size of the farm increases.

Table 1: - Economics of Paddy production.(In Per cent)

Sr. No.	Particulars	Size of farm		
		Small	Medium	Large
1	Variable cost			
	Seed value	0.96	1.32	1.47
	Seed Treatment	0.12	0.13	0.14
	Transplanting	5.34	5.07	4.96
	Fertilizers	3.15	4.47	5.14
	Irrigations	2.89	1.94	1.85
	Weeding/Hoeing	1.28	1.49	1.58
	Plant protection chemicals	1.45	1.84	2.03
	Harvesting & Threshing	11.32	7.37	5.64
	Transportation	1.62	1.18	0.99
	Interest on working capital @ 9% for six months	2.53	2.98	2.14
	Total Variable cost	30.66	27.80	25.96
2.	Fixed costs			
	Rental value of land	55.32	59.44	63.41
	Preparatory tillage	7.71	6.99	5.24
	Pre-sowing irrigation	0.17	0.22	0.21
	Total fixed cost	63.20	66.64	68.85
3.	Management charges	3.07	2.78	2.60
4.	Risk factor	3.07	2.78	2.60
	Total cost (1+2+3+4)	100	100	100

Cost and Income Measures of Paddy cultivation

Cost and Income measures are presented in Table No. 4. The gross income per hectare, on an average worked out to be Rs. 62272.87 but it was much higher in case of medium (Rs. 62512.14) followed by small (Rs. 62320.24) and least among large farmers (Rs. 61986.25). an average net income per hectare was Rs.5301.92 it was maximum in case of large farmers Rs. 6590.08, followed by medium Rs. 5519.90 and least in case of small farmers Rs. 3795.77.

The average Paddy production was 46.07 qtl/ha production of paddy was obtained highest by small farmers (57.57qtl/ha) followed by medium (43.08qtl/ha) and least for large farmers (37.55 qtl/ha). Benefit Cost Ratio maximum in case of large farmer's *i.e.*1.12, for medium 1.09 and 1.06 for small farmers. Similar findings were also reported by Sheokand *et al.* [7] and Devi *et al.* [2].

Table No.2: - Cost and Income measures of Paddy cultivation (In Rs/Hectare)

Particulars	Small	Medium	Large
Total variable cost	17945.36	15842.12	14379.80
Total fixed cost	36990.05	37981.70	38140.38
Total cost	58524.47	56992.24	55396.20
Gross return	62320.24	62512.14	61926.25
Net return	3795.77	5519.90	6590.08
Benefit Cost Ratio	1.06	1.09	1.12

CONCLUSION

The study clearly depicted that the rental value of land contributes maximum to the total cost of production in each category of the farmer followed by harvesting and threshing. Price of the crop not increase in the same proportion as the input cost increases. The large category farmers were get the higher returns as compare to the medium and small farmers main reason is large farmers have their own farm machinery. As the finding of study suggest that paddy is more profitable than wheat to all the three categories of farmers. To minimize the cost farmers, have to adopt improved technology, judicious use of fertilizers, crop diversification, eliminating the middlemen, fixing forming Farmers Producer Organizations.

REFERENCES
1. Chandra, N. (2006). Economics of wheat production in the farmers' fields in Uttaranchal. *Indian Res. J. Ext. Edu.* **6**(3): 44-46.
2. Devi, K. S. and Ponnarasi, T. (2009). An economic analysis of modern rice production technology and its adoption behavior in Tamil Nadu. *Agril. Econ. Res. Review.* **22**: 341-347.
3. Kaur, M., Mehal, A.K., Sekhon, M.K. and Kingra, H. S. (2010). Technical efficiency of wheat production in Punjab: a regional analysis. *Agril. Econ. Res. Review.* **23**(1): 173-180.
4. Khan, S., Khan, M. A and Latif, N. (2010). Energy requirements and economic analysis of wheat, rice and barley production in Australia. *Soil & Environ.* 29(1): 61 – 68.
5. Nirmala, B. and Muthuraman, P. (2009). Economic and constraint analysis of rice cultivation in Kaithal District of Haryana. *Indian Res. J. Ext. Edu.* **9**(1): 47-49.
6. Olekar, J. N., Venkatraman, Naik, A. D., Kerur, N. M., Hiremath, G. M. 2000. An economic analysis of rice-based crop sequences. *Karnataka J. of Agril. Sci.* **13**(4): 897-900.
7. Sheokand, R. S. Narinder, S. Sheoran, O. P. (2000). Comparative economics of different farming systems under paddy-wheat farming sequence in rice-belt of Haryana. *Haryana Agril. Univ. J. Res.* **30**(1/2): 49-53.