Original Research Article

Current status of farmers in kharar, Punjab: An Economic Approach

Abstract

An important segment of the population relies on agriculture for their living, and it has long been a key contributor to the GDP of India. India is a big producer of crops like rice and wheat due to its diversified agro-climatic conditions and fertile soil. In addition to helping to ensure the nation's food security, agriculture is essential for the employment market. While growing a crop, farmers strive for the best possible outcome. This paper deals with the economic aspect of the farmers that is his return on investment. A survey was conducted in five villages viz Shakrullapur, Rora, Batta, Bibipur and Theri; where 125 farmers information was gathered regarding their land holdings, cost of cultivation and yield to determine the profit earn by them in a season. The total input cost is calculated on the basis of total amount of money invest per hectare by the farmers. In average a farmer spends around Rs. 38,000 per hectare as total input cost and in return they get around Rs. 4,17,800 per hectare which makes them a profit of Rs. 3,79,800. This price includes the cultivation of rice as well as wheat crop.

Keywords: *Economics, Agriculture, Farmers, Crops, Profit.*

Introduction

India is regarded as a global agricultural powerhouse, and agriculture is important to the country's economy. (Balkrishna et al., 2021).Agriculture is the most important aspect and is the biggest contributor in the Indian economy. States like Punjab, Haryana and Uttar Pradesh are known as the “Agricultural Hub of India”. Agriculture, which employs half of all workers worldwide, is the primary source of employment in rural India (Singh et al., 2020). Indians rely on agriculture for almost 58% of their income, and their population is still growing rapidly (Agarwal & Sinha, 2017). India's economy receives $400 billion from agriculture, which ranks second behind China (Singh et al., 2020). The most significant cereal crop in the world is wheat (*Triticum aestivum L.*), which is a staple diet for around one-third of the world's population (Husnain et al., 2011). Around 35% of the nation's total food production—98.38 million tonnes—and 21% of all cultivated land—30.597 million hectares—come from it (2016–17) (Nath et al., 2019). Rice (*Oryza sativa*), a staple crop, is crucial to India's food security and economic development (Devkota et al., 2020). It supplies more than one-fourth of all calories consumed and is grown on more than one-fifth of all gross cropped land (Mohanty & Yamano, 2017). This paper deals with these two major crops- wheat and rice. The survey was conducted on 125 famers from five villages in Kharar, Punjab. These farmers mostly grow these major crops.

The main objective of this paper is to learn the current status of farmers from Kharar, Punjab. To get knowledge about the land holdings, total input cost, total yield produced and the profits earned.

Materials and Method

This study was conducted in five villages viz. Shakrullapur, Rora, Batta, Bibipur and Fatehpur theri (also known as theri) which are located in Kharar Block, Mohali district (Punjab). This paper focuses on the two major crops grown in these villages- wheat and rice.

In total 125 farmers were selected randomly from these villages for interview. The total number of respondents for each village is mentioned in table 1. A detailed interaction was conducted with the farmers where they were asked about the land holdings, cost of seeds/fertilizers/machineries, wages given to labours and the total yield produced by them. This helped to analyse the current status of the farmers and the profits earned by them.

Table 1: Name of the villages and the total number of Respondents from each village.

Name of the Village	Number of Respondents
Shakrullapur	26
Rora	27
Batta	27
Bibipur	26
Theri	19

Analytical tools used

Total input cost = wages (if present) +cost of seed+ mechanical cost+ cost of fertilizers+ miscellaneous cost
Gross Return= Total production of crop+ Average price received by the producer for the crop
Cost A: Material cost + bullock/ tractor charges + interest on working capital.
Cost B: Cost A + interest on fixed capital + rental value of owned land.
Cost C: Cost B + imputed value of family labour.
Cost D: Cost C + 10 per cent of Cost C.

Result and discussion

Rice and wheat play an important role for feeding the mass population in India and also is stated as the staple food of India. These crops are considered to be the leading food crops in the world and are important source of carbohydrates.
In this section we will discuss about the cost that is required cultivate these crops and also estimate the profitability of them for small to medium range farmers

1. ***Area under wheat and rice cultivation***
   The 125 farmers that were interviewed in this survey, almost all of them cultivate wheat and rice. In order to estimate their production its important to know about the area they cultivate the crops solely.

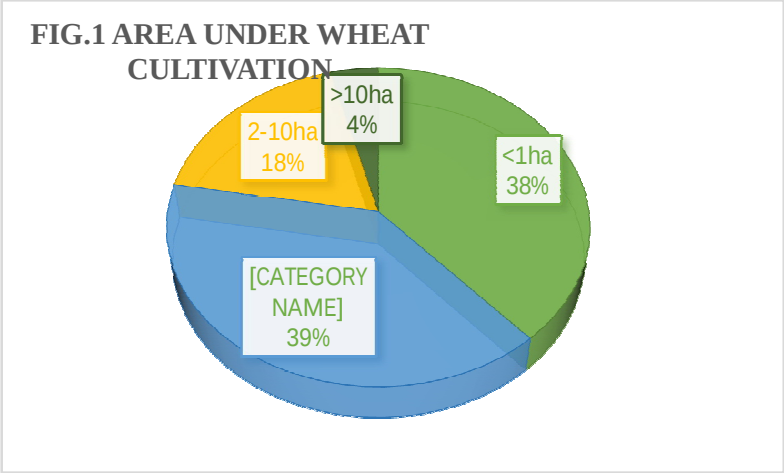
a. Area under wheat cultivation:

The data from the interview of 125 farmers shows that (table 2): around 38% farmers cultivate wheat in land less than 1 hectares, 39% grow wheat in land between 1-2 hectares, 18% grow wheat in land between 2-10 hectares while 4% farmers grow wheat in land more than 10 hectares.

Most popular variety of wheat grown were PBW 725 and PBW 760.

Table 2: Area under Wheat cultivation

Area (ha)	Shakrullapur (n=26)	Rora (n=27)	Batta (n=27)	Bibipur (n=26)	Theri (n=19)	Overall N=125
<1ha	14(54%)	9(33%)	7(26%)	9(34%)	9(53%)	48(38%)
1-2ha	9(34%)	11(41%)	14(52%)	9(34%)	6(26%)	49(39%)
2-10ha	2(8%)	5(19%)	5(18%)	7(27%)	4(21%)	23(18%)
>10ha	1(4%)	2(7%)	1(4%)	1(4%)	0(0%)	5(4%)



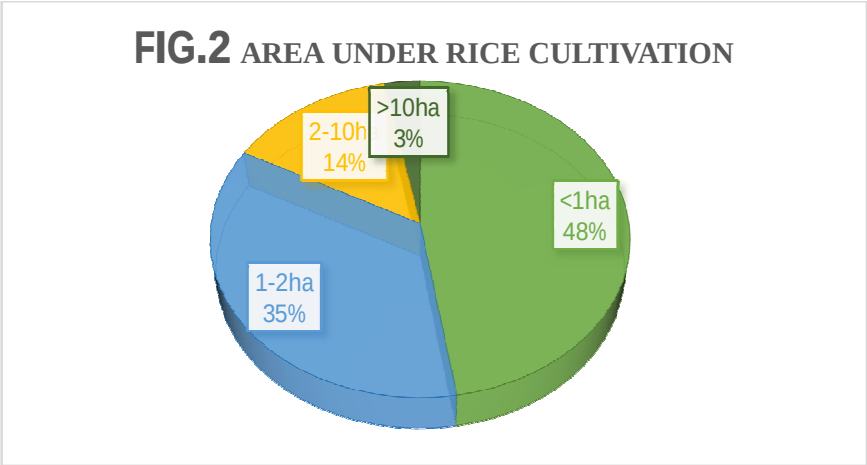
b. Area under rice cultivation:

According to table 3: Around 47% farmers cultivate rice in land less than 1 hectares, 35% grow rice in land between 1-2 hectares, 14% grow rice in land between 2-10 hectares while 3% farmers grow rice in land more than 10 hectares.

Most popular variety of rice grown were PR130, PR131, PR127 and PR126.

Table 3: Area under Rice cultivation

Area (ha)	Shakrullapur (n=26)	Rora (n=27)	Batta (n=27)	Bibipur (n=26)	Theri (n=19)	Overall N=125
<1ha	15(58%)	9(33%)	11(41%)	12(46%)	12(63%)	59(47%)
1-2ha	8(31%)	14(52%)	9(33%)	8(31%)	5(26%)	44(35%)
2-10ha	2(8%)	3(11%)	6(22%)	5(19%)	2(11%)	18(14%)
>10ha	1(4%)	1(4%)	1(4%)	1(4%)	0(0%)	4(3%)



2. ***Total input cost***

The total input cost includes the cash cost, variable cost and cash cost. This is also called the cost of production. Variable cost included the cost of human labour, mechanical power, seed, manure, fertilizers, insecticides, irrigation, and machine charge (Rahman et al., 2009)

a. Human labour

In the table 4: we found that out of 125 farmers that we interviewed -77% of farmers did work in their own field and didn't hire anyone while 23% farmers hired skilled/unskilled workers.

Table 4: Human labour

Human labour	Shakrullapur (n=26)	Rora (n=27)	Batta (n=27)	Bibipur (n=26)	Theri (n=19)	Overall N=125
Own	21(81%)	20(74%)	21(78%)	19(73%)	15(79%)	96(77%)
Hired	5(19%)	7(26%)	6(22%)	7(27%)	4(21%)	29(23%)

Minimum wage for workers: 1. Unskilled: Rs. 411 2. Skilled: Rs. 488 (as per link mentioned in reference 9).

For this paper we have considered the wage to be rs.450 per day. And labours are required during land preparation, sowing, application of fertilizers, manures, pesticide, insecticide; irrigation, harvesting and post harvesting practices. Total wages from each village are mention in table 5 and 6.

Total no. of days labours is required in wheat cultivation=70

Table 5: Average wages given to labours working in wheat field from each village

Average Wages	Shakrullapur (n=26)	Rora (n=27)	Batta (n=27)	Bibipur (n=26)	Theri (n=19)

(Rs/village)					
Total no. of labour	5	7	6	7	4
Wages (Rs.)	1,57,500	2,20,500	1,89,000	2,20,500	1,26,000

Total no. of days labours is required in rice field=110

Table 6: Average wages given to labours working in Rice field from each village

Average Wages (Rs/village)	Shakrullapur (n=26)	Rora (n=27)	Batta (n=27)	Bibipur (n=26)	Theri (n=19)
Total no. of labour	5	7	6	7	4
Wages (Rs.)	2,47,500	3,46,500	2,97,000	3,46,500	1,98,000

b. Cost of seed

Most of the farmers purchase the seeds from the market or the private company. The total cost of the seeds on an average is between Rs. 100-1000 depending upon the land holdings.

Wheat

Table 7: Cost of wheat seeds

Cost of total seed (Rs.)	Shakrullapur (n=26)	Rora (n=27)	Batta (n=27)	Bibipur (n=26)	Theri (n=19)	Overall N=125
100-500	21(81%)	19(70%)	15(56%)	16(62%)	15(79%)	86(69%)
500-1000	5(19%)	8(30%)	11(41%)	9(35%)	4(21%)	37(30%)
>1000	0(0%)	0(0%)	1(4%)	1(4%)	0(0%)	2(2%)

Rice

Table 8: Cost of Rice seeds

Cost of total seed (Rs.)	Shakrullapur (n=26)	Rora (n=27)	Batta (n=27)	Bibipur (n=26)	Theri (n=19)	Overall N=125
100-500	20(77%)	19(70%)	15(56%)	16(62%)	15(79%)	85(68%)
500-1000	6(23%)	8(30%)	12(44%)	8(31%)	4(21%)	38(30%)
>1000	0(0%)	0(0%)	0(0%)	2(8%)	0(0%)	2(2%)

c. Mechanical cost

Most of the farmers already own the major machineries like tractor, ploughs, disk harrow etc. Table 9 includes any maintenance cost, cost of diesel and other cost related to equipments.

Table 9: Mechanical cost from each village

Mechanical cost (Rs.)	Shakrullapur (n=26)	Rora (n=27)	Batta (n=27)	Bibipur (n=26)	Theri (n=19)	Overall N=125
<10,000	24(92%)	20(74%)	21(78%)	19(73%)	12(63%)	96(77%)
10,000-20,000	2(8%)	5(19%)	5(19%)	6(23%)	7(37%)	25(20%)
>20,000	0(0%)	2(7%)	1(4%)	1(4%)	0(0%)	4(3%)

d. Fertilizer cost

Major Fertilizers used by farmers includes urea, MOP and DAP. The table_ includes the total cost of fertilizers used by farmers.

Table 10: Total Fertilizer cost from each village

Total Fertilizer cost (Rs.)	Shakrullapur (n=26)	Rora (n=27)	Batta (n=27)	Bibipur (n=26)	Theri (n=19)	Overall N=125
<1000	4(15%)	1(4%)	2(7%)	0(0%)	1(5%)	8(6%)
1000-5000	20(77%)	20(74%)	21(78%)	18(69%)	15(79%)	94(75%)
>5000	2(8%)	6(22%)	4(15%)	8(31%)	3(16%)	23(18%)

e. Miscellaneous cost

It includes cost of irrigation, intercultural practices and transportation charges.

Table 11: Total Miscellaneous cost

Total miscellaneous cost (Rs.)	Shakrullapur (n=26)	Rora (n=27)	Batta (n=27)	Bibipur (n=26)	Theri (n=19)	Overall N=125
<5000	4(15%)	1(4%)	2(7%)	1(4%)	1(5%)	9(7%)
5000-10,000	20(77%)	20(74%)	21(78%)	19(73%)	15(79%)	95(76%)
>10,000	2(8%)	6(22%)	4(15%)	6(23%)	3(16%)	21(17%)

Overall: **total input cost**

The total input cost is based on the total amount of money spend by the farmer on their land holdings in per hectare.

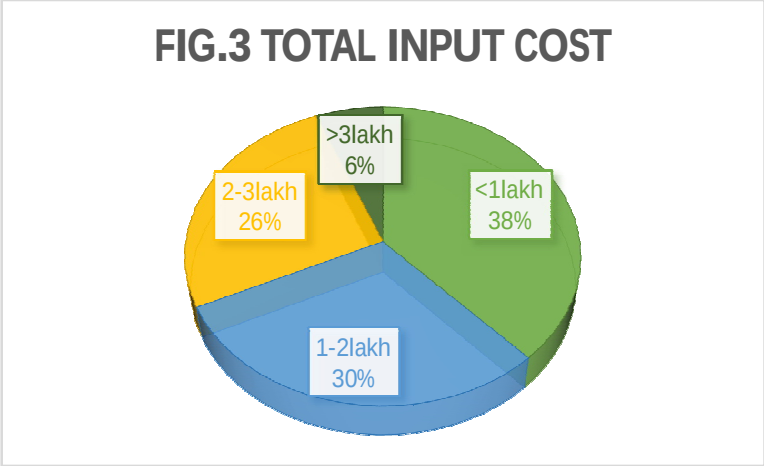
According to table 12: Out of 125 farmers interviewed from the 5 villages: 38% farmers spend less than 1 lakh, 30% farmers spend 1-2 lakh, 26% farmers spend 2-3 lakh and 6% farmers spend more than 3 lakhs in total input cost.

Total input cost = wages (if present) +cost of seed+ mechanical cost+ cost of fertilizers+ miscellaneous cost. the table 12 is same for both rice as well as wheat. The average total input cost comes out to be Rs. 19,000 per hectare. This is calculated twice (once for wheat and once for rice), this comes to a total of Rs. 38,000.

Table 12: Total input cost

Total input cost (Rs/ha)	Shakrullapur (n=26)	Rora (n=27)	Batta (n=27)	Bibipur (n=26)	Theri (n=19)	Overall N=125

<10,000	10(38%)	11(41%)	9(33%)	8(31%)	9(47%)	47(38%)
10,000-20,000	10(38%)	5(19%)	8(30%)	10(38%)	5(26%)	38(30%)
20,000-30,000	4(15%)	10(37%)	9(33%)	6(23%)	4(21%)	33(26%)
>30000	2(8%)	1(4%)	1(4%)	2(8%)	1(5%)	7(6%)



3. ***Total yield produce*:**

The table 13and 14 includes the total yield produced by the farmers from the five villages.

Wheat

Table 13: Total yield produced in Wheat

Total yield produced (kg/ha)	Shakrullapur (n=26)	Rora (n=27)	Batta (n=27)	Bibipur (n=26)	Theri (n=19)	Overall N=125
<1000kg	3(12%)	5(19%)	2(7%)	1(4%)	2(11%)	13(10%)
1000-2500kg	10(38%)	12(44%)	9(33%)	10(38%)	8(42%)	49(39%)
2500-5000kg	12(46%)	8(30%)	14(52%)	12(46%)	8(42%)	54(43%)
>5000kg	1(4%)	2(7%)	2(7%)	3(12%)	1(5%)	9(7%)

Rice

Table 14: Total yield produced in Rice

Total yield produced (kg/ha)	Shakrullapur (n=26)	Rora (n=27)	Batta (n=27)	Bibipur (n=26)	Theri (n=19)	Overall N=125

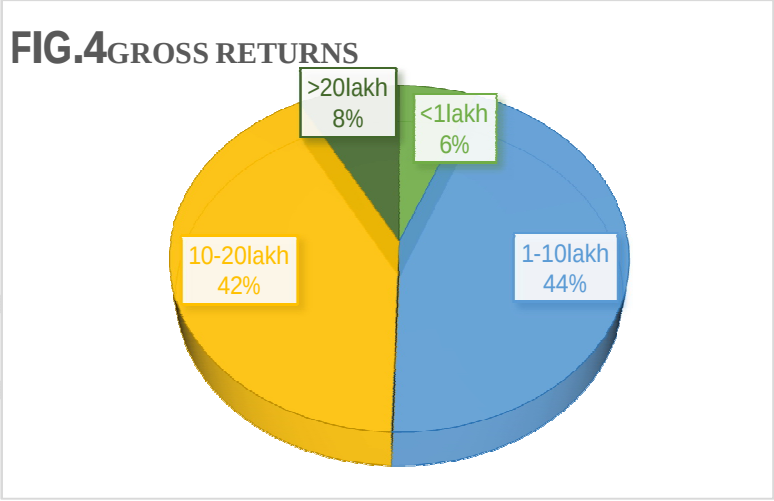
<1000kg	1(4%)	2(7%)	1(4%)	1(4%)	2(11%)	7(6%)
1000-2500kg	9(35%)	9(33%)	10(37%)	9(35%)	7(37%)	44(35%)
2500-5000kg	14(54%)	14(52%)	14(52%)	12(46%)	9(47%)	63(50%)
>5000kg	2(8%)	2(7%)	2(7%)	4(15%)	1(5%)	11(9%)

4. ***Gross returns***

Th gross return of the farmers are calculated on the basis of their total production (rice+ wheat). The selling price depends upon the variety of rice and wheat produced. Gross Return= Total production of crop+ Average price received by the producer for the crop

Table 15: Gross returns

Gross Returns (Rs/ha)	Shakrullapur (n=26)	Rora (n=27)	Batta (n=27)	Bibipur (n=26)	Theri (n=19)	Overall N=125
<1lakh	2(8%)	1(4%)	2(7%)	1(4%)	1(5%)	7(6%)
1-5lakh	12(46%)	11(41%)	11(41%)	12(46%)	10(53%)	56(50%)
5-10 lakh	10(38%)	12(44%)	12(44%)	11(42%)	7(37%)	52(39%)
>10 lakh	2(8%)	3(11%)	2(7%)	2(8%)	1(5%)	10(6%)
Average net returns	**5,35,000**	**5,55,000**	**6,50,000**	**4,35,000**	**4,40,000**	5,23,000



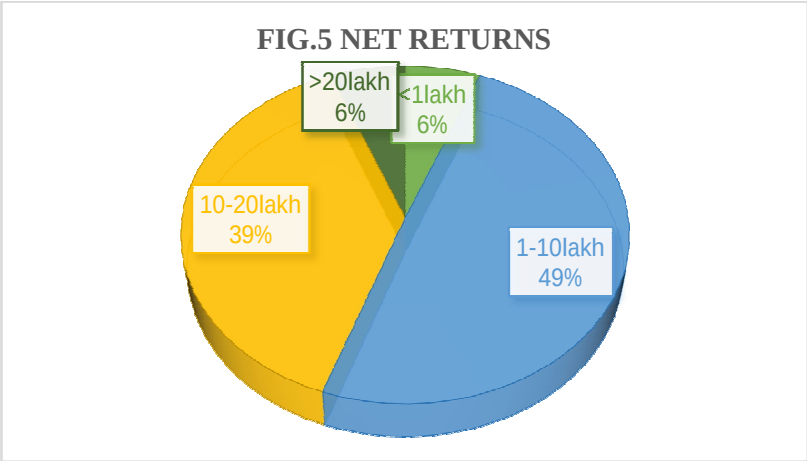
5. ***Net returns***

The net return calculated is based on the total input cost per hectare subtracted with gross return (table 16).

Net Return= Total Input cost – Gross Returns

Table 16: Net returns

Net Returns (Rs/ha)	Shakrullapur (n=26)	Rora (n=27)	Batta (n=27)	Bibipur (n=26)	Theri (n=19)	Overall N=125
<1lakh	2(8%)	1(4%)	2(7%)	1(4%)	1(5%)	7(6%)
1-5lakh	12(46%)	14(52%)	12(44%)	12(46%)	12(63%)	62(50%)
5-10 lakh	11(42%)	10(37%)	12(44%)	11(42%)	5(26%)	49(39%)
>10 lakh	1(4%)	2(7%)	1(4%)	2(8%)	1(5%)	7(6%)
Average net returns	**3,40,000**	**4,30,000**	**5,45,000**	**4,34,000**	**3,40,000**	4,17,800



Conclusion:

On the basis of this study, it is concluded that the major crops grown in these villages (wheat and rice) actually is highly profitable crops. As for most of the farmers the return to investment is quite high. The total input cost consists of total cost of seed, human labour, cost of pesticide, mechanical cost and the miscellaneous cost. The total input cost is calculated on the basis of total amount of money invest per hectare by the farmers. In average a farmer spends around Rs. 38,000 per hectare as total input cost and in return they get around Rs. 4,17,800 per hectare which makes them a profit of Rs. 3,79,800. This price includes the cultivation of rice as well as wheat crop.

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