

Cost and Returns of Wheat Crop in Agra District of Western U.P.

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Abstract

An attempt has been made in this paper to examine the Cost and Returns from wheat crop in Agra District of western Uttar Pradesh. The study was conducted in Agra District of western Uttar Pradesh with 72 farmers who were selected randomly from selected village to collect the required information. The primary data were collected from the wheat producers through personal interview method with the help of well prepared schedule for the year 2013-14. The overall cost of cultivation of wheat crop came to Rs. 46816.13, which was about Rs. 45924.94, Rs. 466677.46 and Rs.46987.13 on small, medium and large farms respectively. Production of wheat crop per hectare overall was 55.48 quintals, which was highest as 70.00 quintals on large farms and lowest as 51.54 quintals on small farms. The study further revealed that gross income per hectare on small, medium and large farms came to Rs. 75268.68, Rs. 88071.43 and Rs. 105000.00 respectively and the overall average gross income came to Rs. 80781.84. The input/output ratio came to 1:1.64 and 1:1.95 on small, medium and large farm size groups respectively and the overall ratio came to 1:1.73. Thus it can be said that large farmers were more efficient in wheat production since the input/output ratio came highest on such farm. It may be due to the facts that large farmers were having more resources. It can also be concluded that wheat crop is more beneficial on all categories of farms.

Key words: Cultivation, Production, gross income, Cost and Returns,

Introduction

Wheat is one of the most important food crops of the world and is usually accorded a premier place among cereals because of the vast acreage devoted to its cultivation and its high nutritive value. It is claimed that if rice is the staple food of half of the world wheat is the chief sustenance of other half. Wheat compared with other important cereals in its nutritive value. It contains more proteins than other cereals. Wheat has a relatively high content of Niacin and Thiamin. Besides, staple food for human beings, wheat and straw are good source of feed and fodder to a large population of cattle. In our country, the yield of wheat has increased from 1.31 to 3.17 tons per hectare, rice from 1.13 to 2.39 tons per hectare, Jowar from 0.46 to 0.96 tons per hectare and maize increased from 1.28 to 2.48 tons per hectare in 2011-12 in comparison to 1970-71, but the productivity of wheat crop is quite low as compared to other countries. In order to

open up new yield and income possibilities on the farms, one needs detailed information on the level and distribution of farm resources, their utilization pattern and the production and income levels. This is essential for identification of structural weakness needing amelioration. Similarly, information on cropping pattern, cost and returns from wheat crop on farms of different size groups essential for evaluating the scope of introduction new crop production technologies in the area. The study entitled, "Cost and Returns in Wheat in Kirauli Tehsil of District Agra" attempts to provide a detailed account of those parameters with reference to wheat crop.

Objectives of the Study

The specific objectives of the study were:

- To estimate the cost of cultivation of wheat crop.
- To analysis the returns from wheat crop, and
- To know the input-output ratio on the farms.

Methodology

One village namely Mai was selected purposively since village was having more area under wheat cultivation in the Achhanera Block of Agra

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District. First of all a list of the farmers growing wheat was taken from the village Lekhpal. These farmers were divided into three categories viz. small, medium and large, the total number of farmers was 182, 23 and 8 respectively. 72 cases were selected randomly. Thus, 61, 8 and 3 cases were selected in small, medium and large farm size groups respectively. The primary data were collected by direct personal interview method with the help of pre-tested schedules. During the course of investigation several visits were made to collect the reliable data from the farmers. The primary data were related to the year 2013-14.

Results and Discussion

The table 1 shows economic status of selected households in different farm size groups:

The table 1 reveals that the overall number of earners, helpers and dependents was 1.77, 1.96 and 2.23 respectively on small, medium and large farms. Within the size groups the number of earners was the highest on large farms followed by small and medium farm size groups. The number of dependents per

earner was the highest on large farms.

The overall average cropped area per farm was 2.19 hectares being 1.51, 4.67 and 8.16 hectares on small, medium and large farms respectively. Out of total cropped area kharif and rabi both season crops occupied about 44.08 and 54.20 percent respectively, while only about 1.72 percent of cropped area was occupied by zaid crops (Table 2).

The per hectare operation wise cost of wheat cultivation has been worked out on different farm size groups and presented in table 3. The table shows that overall per hectare operation wise total cost came to Rs. 23377.05, which varies from Rs. 22805.44 on small, Rs. 23441.07 on medium and Rs. 27825.00 on large farm size groups.

The item wise cost of cultivation was also estimated and shown by the following table 4. The table reveals that per hectare overall total cost of cultivation of wheat crop came to Rs. 46816.13, which was about Rs. 45924.94 on small farms, Rs. 46667.46 on medium and Rs. 46987.13 on large farm. Machine

Table 1: Economic status of Families on the farms

Farm Size Group	Earners	Helpers	Dependents	Total	Dep./Earner
Small	1.77	1.95	2.23	5.95	1.26
Medium	1.67	2.00	1.67	5.33	1.00
Large	2.00	2.00	4.00	8.00	2.00
Overall	1.77	1.96	2.23	5.96	1.26

Table 2: Cropping pattern on different farm size groups (Area in hect.)

Crops	Small	Medium	Large	Overall
Kharif Crops:				
Bajra	0.27 (18.06%)	0.55 (11.79%)	1.00 (12.25%)	0.34 (15.68%)
Cotton	0.02 (1.44%)	0.00 (0.00%)	0.00 (0.00%)	0.02 (0.88%)
Jwar	0.02 (1.38%)	0.13 (2.86%)	0.00 (0.00%)	0.03 (1.55%)
Paddy	0.37 (24.68%)	1.65 (35.36%)	1.00 (12.25%)	0.56 (25.53%)
Sugar Cane	0.01 (0.72%)	0.00 (0.00%)	0.00 (0.00%)	0.01 (0.44%)
Total	0.70 (46.29%)	2.33 (50.00%)	2.00 (24.51%)	0.96 (44.08)
Rabi Crops:				
Barley	0.02 (1.33%)	0.00 (0.00%)	0.00 (0.00%)	0.02 (0.81%)
Bar seem	0.00 (0.00%)	0.00 (0.00%)	0.16 (1.96%)	0.01 (0.32%)
Mustard	0.00 (0.00%)	0.07 (1.43%)	0.00 (0.00%)	0.01 (0.35%)
Potato	0.04 (2.83%)	0.40 (8.57%)	4.00 (49.02%)	0.24 (10.87%)
Wheat	0.70 (46.68%)	1.87 (40.00%)	2.00 (24.51%)	0.92 (41.85%)
Total	0.77 (50.89%)	2.33 (50.00%)	6.16 (75.49%)	1.19 (54.20%)
Zaid Crops	0.04 (2.83%)	0.00 (0.00%)	0.00 (0.00%)	0.04 (1.72%)
Total Cropped Area	1.51 (100%)	4.67 (100%)	8.16 (100%)	2.19 (100%)

(Figures in parenthesis indicate percentage)

Table 3: Operation wise cost of wheat crop per hectare in Rupees

Crops	Small	Medium	Large	Overall
Preparatory Tillage	3651.02 (16.01%)	3955.36 (16.87%)	6822.0 (24.51%)	3989.07 (17.06%)
Sowing	3851.14(16.89%)	3928.57 (16.76%)	4250.0 (15.27%)	3902.90 (16.70%)
Manuring	3500.93(15.35%)	4164.29 (17.76%)	4350.00(15.63%)	3728.46 (15.95%)
Irrigation	1556.52 (6.83%)	1285.71 (5.48%)	2400.00 (8.63%)	1563.68 (6.69%)
Interculture	148.24 (0.56%)	160.71 (0.69%)	525.00 (1.89%)	182.85 (0.78%)
Harvesting	7109.33(31.17%)	7214.29(30.78%)	5880.00(21.13%)	7030.69 (30.08%)
Threshing & Winnowing	2988.26(13.10%)	2732.14 (11.66%)	3600.00(12.94%)	2979.40 (12.74%)
Total	22805.44 (100%)	23441.07 (100%)	27825.00 (100%)	23377.05 (100%)

Table 4: Item wise cost of cultivation per hectare in Rupees

Item	Small	Medium	Large	Overall
Family Labour	6470.29(14.09%)	6775.00(14.52%)	3655.00(7.78%)	6305.34(13.47%)
Casual Labour	5046.94(10.99%)	5000.00(10.71%)	6160.00(13.11%)	5302.65(11.33%)
Value of Seed	2638.97(5.75%)	2821.43(6.05%)	3200.00(6.81%)	2729.09(5.83%)
Value of Fertilizer	3500.93(7.62%)	4164.29(8.92%)	4000.00(8.51%)	3728.46(7.96%)
Value of Insecticides	148.24(0.32%)	160.71(0.34%)	525.00(1.21%)	182.85(0.39%)
Interest of Working Capital	518.58(1.13%)	530.67(1.14%)	754.13(1.60%)	541.23(1.16%)
Variable Cost	27731.92(60.39%)	28532.46(61.14%)	27814.13(59.20%)	28495.58(60.87%)
Dep. On Fixed Capital	1189.81(2.59%)	1875.00(4.02%)	2139.00(4.55%)	1350.53(2.88%)
Interest on Fixed Capital	1989.81(4.33%)	838.98(1.80%)	994.00(2.12%)	1635.06(3.49%)
Land Revenue	13.59(0.03%)	10.36(0.02%)	40.00(0.09%)	15.05(0.03%)
Rental Value	15000.00(32.66%)	15410.71(33.02%)	16000.00(34.05%)	15319.92(32.72%)
Fixed Cost	18193.02(39.61%)	18135.00(38.86%)	19173.00(40.80%)	18320.55(39.13%)
Total Cost (Cost C₂)	45924.94(100%)	46667.46(100%)	46987.13(100%)	46816.13(100%)

Table 5: Cost Concepts wise Cost of Cultivation per hectare on the farms (In Rs)

Cost Concept	Small	Medium	Large	Overall
Cost A ₁	22465.02	23462.81	33098.13	23555.81
Cost A ₂	22465.02	23462.81	33098.13	23555.81
Cost B ₁	24454.65	24481.74	34092.13	25190.87
Cost B ₂	39454.65	39892.46	50092.13	40510.79
Cost C ₁	30924.94	31256.74	37747.13	31496.21
Cost C ₂	45924.94	46667.46	53747.13	46816.13
Cost C ₃	50517.43	51334.20	59121.84	51497.74

charges (tractor, tube well and thresher) and rental value of land were the items occupying maximum share in per hectare total cost of wheat cultivation followed by value of manure and fertilizers and cost of human labour use.

All the costs in cost concept vary directly with the farm size depending upon the area under wheat

crop. In all the cases cost A₁ and A₂ were the same because no case of leased-in land was exist in the sample.

Table 5 shows that per hectare overall total cost (C₃) of wheat came to about Rs. 51497.74. The cost per farm was estimated to be about Rs. 50517.43, Rs. 51334.20 and Rs. 59121.84 on small, medium and large farm size groups respectively. Table further reveals that all the cost concepts cost were found highest on large farm size group followed by medium and small.

The physical production of wheat crop and monetary value of production in case of different farm size groups of sample farms has been estimated and is presented in table 6. The table pertains per hectare production of main product, by-product and gross income from wheat crop. It can be observed from the table that the per hectare overall production of wheat grain was 41.70 quintal, which was highest as 52 quintals on large farms as low as 38.60 quintals on small farms. The table further reveals that per hectare

Table 6: Production of Wheat Crop per hectare and value of production on the farms

Particulars	Small	Medium	Large	Overall
Wheat Grain (Quintals)	38.60	46.96	52.00	41.70
Value of Wheat Grains (Rs.)	56830.48	67089.29	78000.00	60718.79
Bhusa (Quintals)	43.17	49.64	60.00	46.11
Value of Straw (Rs.)	18888.20	20982.14	27000.00	20063.05
Gross Income (Rs.)	75268.68	88071.43	105000.00	80781.84
Grain Equivalent (Quintals)	12.93	14.93	18.00	13.78

Table 7: Income measures and input-output ratio on the farms (Per hectare)

Particulars	Small	Medium	Large	Overall
Gross Income	74268.68	88071.43	105000.00	80781.84
Farm Business Income (Rs)	22873.46	34628.97	47597.88	27660.37
Family Labour Income (Rs)	52395.23	53442.46	57402.13	53121.47
Net Income Over C_1 (Rs)	30924.94	31256.74	37747.13	31496.21
Net Income Over C_2 (Rs)	45924.94	46667.46	53747.13	46816.13
Net Income Over C_3 (Rs)	50517.43	51334.20	59121.84	51497.74
Cost of Production (Quintal)	891.11	756.95	767.80	843.89
Input-Output Ratio	1:1.64	1:1.89	1:1.95	1:1.73

gross income on small, medium and large farms was about Rs. 18888.00, Rs. 20982.00 and Rs. 27000.00 respectively and the overall was Rs. 20063.00.

The various income measures and input-output ratio were examined on the farms and shown by the table 7. The table enumerates the net income over cost C_1 increases with increase in farm size. The input-output ratio also increases with increase in farm size. Thus, it can be concluded that with the investment of one rupee in wheat cultivation, small, medium and large farms earned Rs. 1.64, Rs. 1.89 and Rs. 1.95, respectively.

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