



An Economic Analysis of Female Labour Participation in Rice Cultivation in Raigarh District of Chhattisgarh

Ram Patel P* and Pathak H

Department of Agricultural Economics, IGKV, Raipur, Chhattisgarh, India, IGKV, Raipur, Chhattisgarh, India

*Corresponding author: Ram Patel P, Department of Agricultural Economics, IGKV, Raipur, Chhattisgarh, India, IGKV, Raipur, Chhattisgarh, India, Tel: 073276 61110; E-mail: parasrampatel555@gmail.com

Received: July 21, 2017; Accepted: August 30, 2017; Published: September 04, 2017

Abstract

The present study examines the economic analysis of female labour participation in rice cultivation in Raigarh district of Chhattisgarh state. The survey for this purpose was conducted in three blocks i.e. Dharamjaigarh, Pussore and Baramkela block of Raigarh district. Primary data were collected from 148 farmers from 11 villages of these three selected blocks through personal interview method with the help of a pre-structural schedule for the crop year 2015-16. The simple mean and average methods was used to calculate the cost of cultivation. The human labour contribution was estimated to be 108 man-days, which was 36 (33.33%) and 72 (66.67%) man-days in case of male and female labour contribution, respectively. The total economic contribution of labour participation including both male and female in terms of cost incurred for performing various agricultural operations was ₹ 16017.23 per farm. On an average, the cost of female labour participation was estimated much higher ₹ 9771.28 (61.00 per cent) than male labour at ₹ 6245.95 (39 per cent).

The decision making in different farming operations was taken by the male members across all farm size groups in the study area. However, it was observed that the female participation was comparatively higher in marginal (43.74 per cent) and small farmers (44.12 per cent) as compared to medium (33.19 per cent) and large farmers (14.93 per cent) in rice cultivation. 48.65 per cent female have ownership of agricultural productive resources. It was found that 100 per cent female labour earned lower wage rate than male labour.

Keywords: *Female labour participation; Economic of labour in terms of cost incurred; Constraints in decision making*

Introduction

Women produce between 60 per cent and 80 per cent of the food in most developing countries and are responsible for half of the world food production (Dommati Devender and Reddy Chittedi Krishna 2011). In general, women do not produce food separately from men and it is impossible to disaggregate men and women contribution either in terms of labour supplied or in

terms of output produced. It is enough to recognize that women are important to agriculture and agriculture is important to women (Cheryl Doss 2011). Labour is one of the most important factors of production. Labour contributes to the production process through its productivity and by activating the other factors of production. The size of labour force in a country is determined by the number of people in the age group of 15-59 as generally children below 15 yrs and old people above 59 do not participate in the production process (Bill Grami). Moreover, it is also widely recognized that women activities are changing rapidly in high income and technologically advanced countries. On the contrary in less developed countries women works diversification is more noticeable (Paul Schultz 1990). Rice is the principal crop in Chhattisgarh and Raigarh district in kharif season. Most of the farm operation in rice cultivation is done by employment of human labour dominated by female labour. In this background, it is imperative to examine an economic analysis of female labour participation in rice cultivation in Raigarh district of Chhattisgarh. Specifically, the objectives are [1] to examine the role of women in various operations in rice crop, [2] To work out the economic contribution of women labour in terms of cost incurred in the production of rice crop and [3-5] To identify the main constraints in women participation in decision making in different operation of rice production and suggest measures for improvement of women labour participation.

Methodology

The present study pertains to Raigarh district of Chhattisgarh state. To accomplish the objectives of the study, three blocks of the district, namely Dharamjaigarh, Pussore and Baramkela block were purposively selected. Accordingly, eleven villages were selected randomly from these three blocks on the basis of probability proportion to the size method, 148 respondents were considered for the present study. Compiled data was subjected to simple mathematical tool for fulfilment of different objectives.

The primary data were collected from the farmers through personal interview with the help of well-prepared schedule and questionnaire. The farmers were classified into different categories based on their land holding i.e. marginal (up to 1.00 ha), small (1.01 ha to 2.00 ha), medium (2.01 ha to 4.00 ha) and large (above 4.00 ha) farmers. The whole information is related to the crop year 2015-16.

Results and Discussion

The labour participation was analysed for 17 operations including summer ploughing, nursery preparation, transplanting, inter culture and weeding, harvesting and threshing etc. It can be seen from the TABLE 1, of all the operations, the maximum labour force participation was observed in case of harvesting at 26 man-days (24.07%) which was nearly one fourth of the total labour force participation. It may further be noted that more than three fourth, man-days 20 (76.92%) of labour force participation in this operation was contributed by female labour participation. It was also observed that the female labour participation was dominant in case of transportation to home operation at man-days 11 (10.19%), threshing man-days 10 (9.26%) and interculture man-days 8 (7.41%). It is important to mention that farm operation like seed sowing, biasi (biushning) did not have any female labour participation and was solely contributed by male labour force in rice production.

TABLE 1. Operation wise average labour participation in production of rice (man-days).

S. No	Operations	Family human	Hired human	Total male	Family human	Hired human	Total female	Total human (M+F)
		Male			Female			
1	Summer ploughing	1	0	1	1	0	1	2
2	Nursery preparation	1	1	2	1	0	1	3
3	Field preparation	1	1	2	1	0	1	3
4	Manure and fertilizer	2	2	4	1	0	1	5
5	Seed sowing	1	0	1	0	0	0	1
6	Transplanting	0	1	1	0	4	4	5
7	Biasi (biushning)	0	1	1	0	0	0	1
8	Chalai	0	0	0	2	2	4	4
9	Interculture & weeding	1	1	2	4	4	8	10
10	Irrigation & drainage	1	0	1	1	0	1	2
11	Plant protection	6	0	6	1	0	1	7
12	Removal of inert plant	0	0	0	1	2	3	3
13	Harvesting	3	3	6	10	10	20	26
14	Home transportation	1	2	3	3	8	11	14
15	Threshing	1	1	2	5	5	10	12
16	Winnowing	1	1	2	2	2	4	6
17	Mandi transportation	1	1	2	1	1	2	4
	Total	21	15	36	34	38	72	108
		(19.44)	(13.89)	(33.33)	(31.48)	(35.19)	(66.67)	(100)

Note: Parenthesis indicates the percentage of the labour participation of rice crop
(M-male, F-female)

Economic contribution of human labour in terms of cost incurred in production of rice crop

The economic contribution of labour participation in terms of cost incurred in rice is presented in TABLE 2. The table reveals that total economic contribution of labour participation including both male and female in terms of cost incurred for performing various agricultural operations was ₹ 16017.23 per farm. On an average, the cost of female labour participation was estimated much higher ₹ 9771.28 (61.00 per cent) than male labour at ₹ 6245.95 (39 per cent). It is clear from the table that the cost of labour force participation was found highest in case of harvesting operation at ₹ 4000 (24.97 per cent) consisting of female labour cost at ₹ 3000 (18.73 per cent) and male labour cost at ₹ 1000 (6.24 per cent) followed by transportation to home (11.86 per cent), threshing (11.86 per cent) and interculture/weeding (9.05 per cent). The cost of female labour participation in these operations was estimated to be ₹ 1500 (9.36 per cent), ₹ 1500(9.36 per cent) and ₹ 1050 (6.56 per cent) respectively.

TABLE 2. Economic contribution of human labour in terms of cost incurred in production of rice crop (₹/ha.).

S.N.	Operation	Marginal		Small		Medium		Large		Average		Total (M and F)
		M	F	M	F	M	F	M	F	M	F	
1	Summer ploughing	0	0	400	150	200	0	0	0	159.46	38.51	197.97
2	Nursery preparation	0	0	0	0	400	150	400	0	148.65	42.57	191.22
3	Field preparation	400	0	200	300	400	0	400	0	348.65	77.03	425.68
4	Manure & fertilizer	1000	0	600	450	600	0	600	0	748.65	115.54	864.19
5	Seed sowing	400	0	200	0	200	0	0	0	256.76	0.00	256.76
6	Transplanting	0	0	0	0	200	750	600	1500	109.46	344.59	454.05
7	Biasi (Biushning)	200	0	0	0	0	0	0	0	74.32	0.00	74.32
8	Chalai	0	900	0	1050	0	300	0	0	0.00	689.19	689.19
9	Interculture/weeding	400	1050	400	1050	400	1050	400	1050	400.00	1050.00	1450.00
10	Irrigation	200	0	200	150	200	0	200	0	200.00	38.51	338.51
11	Plant protection	1200	0	1200	450	1200	0	1200	0	1200.00	115.54	1315.54
12	Inert plant removal	0	450	0	300	0	450	0	450	0.00	411.49	411.49
13	Harvesting	1000	3000	1000	3000	1000	3000	1000	3000	1000.00	3000.00	4000.00
14	Home transportation	400	1500	400	1500	400	1500	400	1500	400.00	1500.00	1900.00
15	Threshing	400	1500	400	1500	400	1500	400	1500	400.00	1500.00	1900.00
16	Winnowing	400	600	400	450	400	600	400	450	400.00	548.31	948.31
17	Mandi transportation	400	300	400	300	400	300	400	300	400.00	300.00	700.00
	Total	6400	9300	5800	10650	6400	9600	6400	9750	6245.95	9771.28	16017.23
		(40.8)	(59)	(35.2)	(64.7)	(40)	(6)	(39.63)	(60.37)	(39.00)	(61.00)	(100.00)
	GT	15700		16450		16000		16150		16017.23		16017.23
		(100)		(100)		(100)		(100)		(100)		(100)

Note: Figures in the parentheses indicate percentages to the economic contribution of the farmer in terms of cost incurred

Constraints faced by farmers in decision making and production of rice at sample farms

The female labour participation in decision making in various operations of different crops under study has been presented in the TABLE 3 and TABLE 4. The decision making in different farming operations was taken entirely by the male members, across all farm size groups in the study area. However, it was observed that the female participation was comparatively higher in marginal (43.74 per cent) and small farmers (44.12 per cent) as compared to medium (33.19 per cent) and large farmers (14.93 per cent) in rice cultivation.

TABLE 4 reveals the constraints faced by rice crop growers in the study area. Only 48.65% females have holding of agricultural productive resources such as land, animal and machinery. Overall, 17.57% female suffered from illiteracy from the sample farms. 100% female labour earned lower wage rate than male labour, in the production of rice crop in the study area.

TABLE 3. Operation wise role of women in decision making in rice crop (n=148).

s.no	particulars	MARGINAL		SMALL		MEDIUM		LARGE		TOTAL	
		M	F	M	F	M	F	M	F	M	F
1	Summer ploughing	32	23	25	13	35	7	11	2	103	45
		(58.18)	(41.82)	(65.79)	(34.21)	(83.33)	(16.67)	(84.62)	(15.38)	(69.59)	(30.41)
2	Nursery preparation	20	35	18	20	30	12	9	4	77	71
		(36.36)	(63.64)	(47.37)	(52.63)	(71.43)	(28.57)	(69.23)	(30.77)	(52.03)	(47.97)
3	Field preparation	36	19	21	17	22	20	11	2	90	58
		(65.45)	(34.55)	(55.26)	(44.74)	(52.38)	(47.62)	(84.62)	(15.38)	(60.81)	(39.19)
4	Manure and fertilizer	38	17	20	18	23	19	11	2	92	56
		(69.09)	(30.91)	(52.63)	(47.37)	(54.76)	(45.24)	(84.62)	(15.38)	(62.16)	(37.84)
5	Seed sowing	35	20	20	18	22	20	10	3	87	61
		(63.64)	(36.36)	(52.63)	(47.37)	(52.38)	(47.62)	(76.92)	(23.08)	(58.78)	(41.22)
6	Transplanting	40	15	21	17	23	19	12	1	96	52
		(72.73)	(27.27)	(55.26)	(44.74)	(54.76)	(45.24)	(92.31)	(7.69)	(64.86)	(35.14)
7	Biyashi (biushning)	55	0	35	3	42	0	12	1	144	4
		(100.00)	(0.00)	(92.11)	(7.89)	(100.00)	(0.00)	(92.31)	(7.69)	(97.30)	(2.70)
8	Chalai	20	35	18	20	32	10	10	3	80	68
		(36.36)	(63.64)	(47.37)	(52.63)	(76.19)	(23.81)	(76.92)	(23.08)	(54.05)	(45.95)
9	Interculture & weeding	22	33	20	18	22	20	10	3	74	74
		(40.00)	(60.00)	(52.63)	(47.37)	(52.38)	(47.62)	(76.92)	(23.08)	(50.00)	(50.00)
10	Irrigation & drainage	27	28	19	19	35	7	13	0	94	54
		(49.09)	(50.91)	(50.00)	(50.00)	(83.33)	(16.67)	(100.00)	(0.00)	(63.51)	(36.49)
11	Plant protection	28	27	21	17	39	3	13	0	101	47
		(50.91)	(49.09)	(55.26)	(44.74)	(92.86)	(7.14)	(100.00)	(0.00)	(68.24)	(31.76)
12	Removal of inert plant	25	30	20	18	32	10	12	1	89	59
		(45.45)	(54.55)	(52.63)	(47.37)	(76.19)	(23.81)	(92.31)	(7.69)	(60.14)	(39.86)
13	Harvesting	20	35	25	13	19	23	12	1	76	72
		(36.36)	(63.64)	(65.79)	(34.21)	(45.24)	(54.76)	(92.31)	(7.69)	(51.35)	(48.65)
14	Transportation to home	35	20	20	18	22	20	11	2	88	60
		(63.64)	(36.36)	(52.63)	(47.37)	(52.38)	(47.62)	(84.62)	(15.38)	(59.46)	(40.54)
15	Threshing	27	28	20	18	22	20	10	3	79	69
		(49.09)	(50.91)	(52.63)	(47.37)	(52.38)	(47.62)	(76.92)	(23.08)	(53.38)	(46.62)
16	Winnowing	21	34	18	20	35	7	9	4	83	65
		(38.18)	(61.82)	(47.37)	(52.63)	(83.33)	(16.67)	(69.23)	(30.77)	(56.08)	(43.92)
17	Transportation to mandi	45	10	20	18	22	20	12	1	99	49

		(81.82)	(18.18)	(52.63)	(47.37)	(52.38)	(47.62)	(92.31)	(7.69)	(66.89)	(33.11)
	Average	30.94	24.06	21.24	16.76	28.06	13.94	11.06	1.94	91.29	56.71
		(56.26)	(43.74)	(55.88)	(44.12)	(66.81)	(33.19)	(85.07)	(14.93)	(61.69)	(38.31)
		55.00		38.00		42.00		13.00		148.00	
		(100)		(100)		(100)		(100)		(100)	
Note: Figures in the parentheses indicate percentages to the labour participation in decision making at various operations											

TABLE 4. Constraints in female labour participation in rice crop.

(n=148)	
1. Lack of involvement in decision making	54
	(36.48)
2. Lack of holding of agricultural productive resources	72
	(48.65)
3. Suffer from illiteracy	26
	(17.57)
4. Earned less wage by the female labour	148
	(100)

Conclusion

Only 48.65% women had holding of agricultural productive resources such as land, animals, and machinery. Very less 37.84% women involved in decision making process, either inside or outside home for performing farm operations in rice cultivation. Women perform all un-mechanized agricultural operations and performed multiple tasks, which added more burden to them, women workers in agriculture 17.57% suffer from illiteracy. Women earned less wages. 100% female labour earned lower wage rate than male. Though, the economic contribution of female labour participation in terms of costs incurred was higher than the male labour, the wages earned by the female labour force was much lower than the male labour. On an, average, It was 25 per cent lower than the male labour force in the study area. It was ₹ 150 and ₹ 200 for female and male labour respectively. Keeping in view the comparatively lower wages earned by the female labour force there is need to increase the same by at least 10 per cent. There is need to educate, train, create awareness, arrange field and exposure trips to the farming community, particularly the women folk by the government and non-government agencies.

REFERENCES

1. Dommami D, Reddi CK. Socio-economic conditions of agricultural labour in Andhra Pradesh: A case study in Karimnagar district. International Journal of Business Economics and Management Research. 2011; 2:115-34.
2. Doss C. If women hold up half the sky, how much of worlds food they produce. Agricultural Development Economics Division. The Food and Agriculture Organizations of the United Nations. 2011; 11.
3. Billgrami SAR. An Introduction to Agricultural Economics. Himalaya Publishing House. 2008; 12.
4. Patel PR. An economic analysis of female labour participation in major kharif crops of Raigarh district of Chhattisgarh. M.Sc (Ag) Agricultural Economics. Thesis submitted to Indira Gandhi Krishi Vishwavidyalaya. 2017.

5. Schultz TP. Women's Changing Participation in Labour Force : A world Perspective, Economic Development and Cultural Change. 1990; 38:457-88.