

**RESEARCH ARTICLE :**

Role of women in agriculture as farmer and labour : An empirical evidences of farm women involvement in agriculture operations in Jaipur district of Rajasthan state

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SUMMARY : The present paper aimed to investigate the total number of days spent by women in agriculture during a year and time spent for different agricultural operations in both *Rabi* and *Kharif* seasons in Jaipur district of Rajasthan State. The study was based on random sampling method for the year 2012-2013. To ascertain the objective primary data were collected by conducting personnel interview method with help of schedules specially developed for the purpose. The study revealed that major proportion (more than 90.00 %) of the respondents participated in activities like application of fertilizers, manuring, intercultural operations, harvesting, threshing, winnowing, transportation and storage of produce. The findings also reveals in both *Rabi* and *Kharif* the maximum percentage time spent (23-26 %) was in intercultural operations as a single activity followed by harvesting. Out of all the major activities least time was spent on nursery bed, seed bed preparation and transplanting during both *Kharif* and *Rabi* season. Further, the study also indicates that the total number of average hours spent per day was 5.17 in *Kharif* and 5.47 in *Rabi* season. However, the total number of hours of work per day varied according to the nature of agricultural activities being performed by them. Hence, the study suggest that despite the fact that though women contribute more in agriculture/farm related activities than men, their involvement in decision making process is extreme disadvantage in terms of rights, pay and participation in local producers organizations. The main cause for this situation is due lack of empowerment which has repeatedly fallout in negative externalities such as poor health and less or no education for women in farm families. Thus, the study suggest that future strategies should framed in such way that women would be actively involved in farm decision process both at the government and household level.

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BACKGROUND AND OBJECTIVES

Bringing better prospects in rural areas

is possible only by rural women and agriculture is an occupation that supports livelihood of many women, especially in rural India.

Agriculture development has been acclaimed as an effective instrument capable of bringing about speedy socio-economic transformation, among the rural community by providing main occupation. Agriculture provides the main source of income in rural areas. Further, women empowerment especial for rural women other than performing routine household work also contribute to family income through their productive family labour of agriculture round the year. The role and need of women in improving agricultural growth is being recognized with increasing interest and investment. Due to change in present day agricultural scenario—including climate change increasingly degraded and marginalized land coming into production, limited water availability, increasing use of inputs, rising fuel costs, and unknown market opportunities—farmers require access to timely, reliable, and relevant information that can support the complexity within which their farm enterprises operate.

Women, if encouraged may serve as a driving tool in accelerating development and contributing substantially to economic upliftment and poverty reduction. Motivation to women entrepreneurship in turn furnishes the goal of women empowerment; is one of the millennium development goals thus stimulating government to promote women entrepreneurship through various schemes, plans, policies and programmes (Upreti and Bhardwaj, 2015).

Agriculture helped the economic release of women in many villages. Agriculture and allied sectors have provided a platform to women to demonstrate their capabilities and competence through their livelihood activities (Jayanthi, 2006).

The women is the backbone of agricultural workforce but worldwide her hard work has mostly been unpaid. She does the most tedious and back-breaking tasks in agriculture, animal husbandry and homes. The research efforts at the ICAR institutes have been tried to relieve her of the drudgery by providing time and labour saving tools. Vocational trainings are also being conducted, to impart skills to undertake different avocations. In extension activities the women is now the centre point and activities are being planned keeping her in view. Her enlightenment will change the face of rural India. Several programmes started at the National Centre for Women in Agriculture and Krishi Vigyan Kendras, are the right steps in this direction.

Women make essential contributions to the

agricultural and rural economies in all developing countries. Their roles vary considerably between and within regions and are changing rapidly in many parts of the world, where economic and social forces are transforming the agricultural sector. Rural women often manage complex households and pursue multiple livelihood strategies. Their activities typically include producing agricultural crops, tending animals, processing and preparing food, working for wages in agricultural or other rural enterprises, collecting fuel and water, engaging in trade and marketing, caring for family members and maintaining their homes. Many of these activities are not defined as “economically active employment” in national accounts but they are essential to the well-being of rural households (FAO, 2011).

The World Development Report 2012 stresses that gender equality can lead to productivity gains, that women’s increased control of household resources can improve outcomes for the next generation, and that empowering women as economic, social, and political actors can result in more representative decision making. The report also identifies areas where policy can help close the gender gap: addressing excess deaths of girls and women; improving girls’ education; equalizing access to economic opportunities and reducing productivity gaps between women and men; giving women a stronger voice in households and societies; and limiting the transmission of gender inequality across generations.

Attention to gender in agriculture is not new, but in the past it has often been limited to a few specialized programmes targeting women or “mainstreaming” efforts that embed attention to gender within programmes, with too little follow-through. That seems to be changing. A number of key development agencies and donors are drawing on gender analysis in their programming, targeting by gender, and building in accountability. For example, FAO’s 2012 gender strategy commits to allocating 30 per cent of operational budgets to interventions targeted to women and to disaggregating data in all FAO statistical databases by sex. The Bill and Melinda Gates Foundation’s policy on gender-responsive agricultural programming is summarized as “Know her, design for her, be accountable to her” (IFPRI, 2012).

RESOURCES AND METHODS

The study was conducted in Jaipur district of Rajasthan state. Among 13 tehsils of Jaipur district,

Phulera tehsil was purposively selected for the study as it ranks first for having maximum number of agricultural labourers in Jaipur district. The primary data were collected by conducting personnel interview method with help of schedules specially developed for the purpose. For the study three villages namely Bhojpura, Khirwa and Murlipura in Jaipur district were selected. A sample of 60 women respondents from different size groups of land holdings was selected on the basis of probability proportion to sample size. Further, for selection of sample respondents a separate list was prepared in consultation with village Patwaris, agricultural supervisors and local leaders. The enlisted farm households were classified into the following four size groups on the basis of size of their land holdings (Table A). While selecting the sample farmer's presence of women in the family was taken into account. Out of the truncated list of farm households, 60 families were finally selected randomly in probability proportion to the total number of families in each size group. Number of finally selected respondents from each land holding size group is depicted in Table B.

Sr. No	Category	Size of holding
1.	Small	Upto 2 hectares
2.	Semi-medium	2 to 4 hectares
3.	Medium	4 to 10 hectares
4.	Large	10 hectares and above

Sr. No.	Land holding size group (ha)	Number of families in each size group	Number of families selected in each size group
1.	Small	106	14
2.	Semi-medium	104	13
3.	Medium	236	29
4.	Large	31	4
5.	Total	477	60

OBSERVATIONS AND ANALYSIS

The distribution of respondents according to family type is presented in Table 1. It is revealed from the Table 1 that nuclear family dominated among respondents in all the sample villages. However, village Murlipura was estimated to be the relatively more modern among the selected villages with nuclear family accounting for 78.57

per cent of total selected families in that village followed by Khirwa (66.67 %) and Bhojpura (58.06 %). Overall, for the sample as a whole, 65.00 per cent of the total families were nuclear families and rest 35.00 per cent was joint. Even the present figures indicated a trend towards disintegration of the joint families in the study area. Most of the disintegrating joint families divided land holdings and thus perpetuated the problems of subdivision and fragmentation of land holdings.

The study also focused on total number of days spent by women in agriculture during a Year. The Table 2 reveals the total number of days spent by the respondent agricultural work during a whole year. The results of the analysis showed that 36.67 per cent of the respondents spent 76-100 days followed by 25.00 per cent working between 101-125 days. Similarly, 16.66 per cent respondents devoted less than 50 days in a year. Only 3.33 per cent of the respondents spent more than 150 days in a year. The village-wise pattern exhibited that village Murlipura had the highest proportion (42.86 %) of respondents who worked between 76-100 days and 28.57 per cent spent more than 100 days. In village Khirwa 73.34 per cent of the respondents worked for more than 75 days which was the highest percentage of participation and rest 26.66 per cent worked for less than 75 days.

The study focused on time spent in *Kharif* and *Rabi* season on agricultural operations. The Table 3 depicts the percentage of overall average time devoted by respondents in different agricultural operations subdivided in *Rabi* and *Kharif* seasons for all the three villages under study. Number of days spent in agricultural works was more in *Rabi* season than in *Kharif* season. For the sample as a whole woman worked more in *Rabi* season *i.e.* on an average 42.51 days in comparison to *Kharif* season (36.95 days). This looked plausible due to the more intensive nature of *Rabi* agriculture than *Kharif* agriculture. This trend was also visible in the percentage figures as 46.50 per cent the total annual time spent was accounted for by the *Kharif* and the rest was devoted to *Rabi* operations.

The findings also reveals that in both *Rabi* and *Kharif* the maximum percentage time spent (23-26 %) was in intercultural operations as a single activity followed by harvesting. Out of all the major activities listed least time was spent on nursery bed, seedbed preparation and transplanting during both *Kharif* and *Rabi* season. Most

of the above inferences drawn for the whole sample were more or less true for village-wise analysis also. Many of the activities such as marketing of agricultural produce and plant protection through chemical sprays were lumped

together for the sake of convenience and taken together. These activities combinedly consumed a large proportion of women's time.

The findings related to the average number of hours

Sr. No	Family type	Number of respondents in the selected villages						Total	
		Bhojpura		Khirwa		Murlipura			
1.	Nuclear	18	(58.06)	10	(66.67)	11	(78.57)	39	(65.00)
2.	Joint	13	(41.94)	5	(33.33)	3	(21.43)	21	(35.00)
3.	Total	31	(100.00)	15	(100.00)	14	(100.00)	60	(100.00)

Sr. No.	Family type	Number of respondents in the sample villages						Total	
		Bhojpura		Khirwa		Murlipura			
1.	1-25	2	(6.45)	Nil	Nil	Nil	Nil	2	(3.33)
2.	26-50	5	(16.13)	2	(13.33)	1	(7.14)	8	(13.33)
3.	51-75	3	(9.68)	2	(13.33)	3	(21.43)	8	(13.33)
4.	76-100	10	(32.26)	6	(40.00)	6	(42.86)	22	(36.67)
5.	101-125	7	(22.58)	4	(26.67)	4	(28.57)	15	(25.00)
6.	126-150	2	(6.45)	1	(6.67)	Nil	Nil	3	(5.00)
7.	151-175	2	(6.45)	Nil	Nil	Nil	Nil	2	(3.33)
8.	Total	31	(100.00)	15	(100.00)	14	(100.00)	60	(100.00)

Sr. No	Family type	Weighted average and percentage of average times spend in days on various agricultural operations in the sample villages								Total
		Bhojpura		Khirwa		Murlipura		Kharif	Rabi	
		Kharif	Rabi	Kharif	Rabi	Kharif	Rabi			
1.	Ploughing of land	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
2.	Manuring and fertilizer application	4.29	1.42	4.60	2.06	5.64	1.14	4.68	1.52	(3.58)
		(11.40)	(3.33)	(12.32)	(4.79)	(15.96)	(2.72)	(12.67)		
3.	Seed treatment and sowing	1.48	2.22	2.06	2.86	1.78	2.50	1.68	2.45	(5.76)
		(3.94)	(5.21)	(5.52)	(6.64)	(5.04)	(5.96)	(4.55)		
4.	Seedebed preparation and transplanting	0.98	0.64	0.47	0.86	0.85	0.64	0.82	0.70	(1.65)
		(2.61)	(1.50)	(1.26)	(1.99)	(2.41)	(1.53)	(2.22)		
5.	Irrigation	Nil	3.29	Nil	4.40	Nil	6.21	Nil	4.25	(9.99)
			(7.72)		(10.22)		(14.84)			
6.	Intercultural	8.97	12.35	8.67	11.00	8.71	9.07	8.83	11.25	(26.46)
		(23.85)	(28.96)	(23.23)	(25.26)	(24.67)	(21.68)	(23.90)		
7.	Harvesting	8.48	11.39	9.33	10.00	6.93	10.14	8.33	10.50	(24.70)
		(22.55)	(26.71)	(24.99)	(23.23)	(19.61)	(24.24)	(22.54)		
8.	Threshing	2.12	2.55	2.40	2.73	2.50	2.36	2.28	2.55	(5.99)
		(5.64)	(5.84)	(6.43)	(6.34)	(7.07)	(5.64)	(6.17)		
9.	Winnowing	1.81	2.23	1.67	1.60	2.00	1.43	1.78	2.08	(4.89)
		(4.81)	(5.23)	(4.47)	(3.72)	(5.66)	(3.42)	(4.82)		
10.	Transportation and storage of produce	2.03	2.29	1.80	1.93	2.00	2.21	1.97	2.18	(5.13)
		(5.40)	(5.37)	(4.82)	(4.48)	(5.66)	(5.28)	(5.33)		
11.	Other farm activities	7.45	4.26	6.33	5.60	4.93	6.14	6.58	5.03	(11.83)
		(19.81)	(9.99)	(16.96)	(13.01)	(13.95)	(14.67)	(17.81)		
Sum of the weighted average of number of days spent		37.61	42.64	37.33	43.04	35.34	41.84	36.95	42.51	
Total number of days spent in year		80.25		80.37		77.18		79.46		
Percentage of total time spent in Kharif and Rabi		46.87	53.13	46.45	53.55	43.79	54.21	46.50	53.50	

spent per day by the respondents in agricultural work like the total number of days also depended upon the nature of activity. It was rather the basis for estimating the number of days. Table 4 and 5 present village-wise distribution of respondents by average number of hours spent in *Kharif* and *Rabi* agricultural activities. Overall on an average each respondent spent 5.17 hours per day in *Kharif* agricultural activities and 5.47 hours in the *Rabi* agricultural activities. The village-wise averages were more or less same. 23.33 per cent respondents worked between 5 to 6 hours during *Kharif* season followed by 18.33 per cent between 6 to 7 hours and 16.67 per cent between 4-5 hours per day *i.e.* 58.33 per cent respondents worked between 4 to 7 hours per day in *Kharif*. In case of *Rabi* season 28.33 per cent respondents engaged for 5-6 hours per day followed by 15.00 per cent between 4-5 and 7-8 hours per day *i.e.* 56.66 per cent respondents worked between 4-7 hours per day in *Rabi* season. 1.67 per cent in *Kharif* and 5.00

per cent respondents in *Rabi* season worked for upto 9 hours per day.

Conclusion :

The study concludes that in the study area there was an increasing trend of disintegration in joint families which was major reason for land sub divisions and fragmentation of land holdings. In the study area it was always seen that majority of the workers spent 76-100 working days in a year. Further study also indicates that the number of days spent in agricultural works was more in *Rabi* season when compared to *Kharif* season, the possible reason was due to the more intensive nature of *Rabi* agriculture than *Kharif* agriculture. It was found that in a nutshell, on an average each respondent spent 5.17 hours per day in *Kharif* agricultural activities and 5.47 hours in the *Rabi* agricultural activities. The distribution of critical resources like land is also unevenly distributed across gender. Hence, the study states that

Table 4 : Absolute and percentage distribution of respondents by average number of hours devoted per day in *Kharif* season 2012-2013 (n=60)

Average no of hours	Number of respondents engaged in agriculture during <i>Kharif</i> in the sample villages						Total	
	Bhojpura		Khirwa		Murlipura			
1	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
2	2	(6.45)	1	(6.67)	1	(7.14)	4	(6.67)
3	4	(12.90)	2	(13.33)	1	(7.14)	7	(11.67)
4	5	(16.13)	2	(13.33)	3	(21.43)	10	(16.67)
5	7	(22.58)	3	(20.00)	4	(28.57)	14	(23.33)
6	4	(19.35)	4	(26.67)	1	(7.14)	11	(18.33)
7	4	(12.90)	2	(13.33)	2	(14.29)	8	(13.33)
8	2	(6.45)	1	(6.67)	2	(14.29)	5	(8.33)
9	1	(3.23)	Nil	Nil	Nil	Nil	1	(1.67)
Total	31	(100.00)	15	(100.00)	14	(100.00)	60	(100.00)
Weighted average	5.16		5.13		5.21		5.17	

Table 5 : Absolute and percentage distribution of respondents by average number of hours devoted per day in *Rabi* season 2012-2013 (n=60)

Average no of hours	Number of respondents engaged in agriculture during <i>Rabi</i> in the sample villages						Total	
	Bhojpura		Khirwa		Murlipura			
1	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
2	1	(3.23)	1	(6.67)	1	(7.14)	3	(5.00)
3	3	(9.68)	1	(6.67)	1	(7.14)	5	(8.33)
4	4	(12.90)	3	(20.00)	2	(14.29)	9	(15.00)
5	9	(29.03)	4	(26.67)	3	(21.43)	17	(28.33)
6	5	(16.13)	2	(13.33)	1	(7.14)	8	(13.33)
7	4	(12.90)	2	(13.33)	3	(21.43)	9	(15.00)
8	3	(9.68)	1	(6.67)	2	(14.29)	6	(10.00)
9	1	(3.23)	1	(6.67)	1	(7.14)	3	(5.00)
Total	31	(100.00)	15	(100.00)	14	(100.00)	60	(100.00)
Weighted average	5.26		5.33		5.71		5.47	

though land property ownership rights directly in their names but they don't have control over that land. Decision making in agriculture or the instruments of production remains in the hands of the men of the household. With unequal access to input resources like skills and credit creates inequality, land inequality is one area which is of crucial importance for rural women in India and goes a long way towards strengthening the unequal socio-economic relations in our society.

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