

Participation of Farm Women in Agriculture

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1. Introduction

Farm women are considered as 'invisible work force' in agriculture even though they participate in most of the agricultural operations. They constitute so significant part of the working women population in our country that fuller understanding of their contribution becomes necessary. Their participation in agriculture is substantial but till now it has remained undercounted and undervalued.

Women participate in most of the agricultural operations like manuring, land preparation, sowing of seeds, transplanting, weeding, hoeing, applying fertilizers, taking care of the standing crops, harvesting, threshing, storage of food grains etc. Studies support that by and large hard jobs are assigned to farm women. They are usually found doing low prestige, hazardous and repetitive job. Tedious and laborious jobs such as transplanting, weeding, harvesting and processing are mostly done by women. An understanding of role profile of farm women is essential for improving their conditions.

Present study was conducted in village Shikarpur, Nazafgarh block, Delhi with the objective of investigating the participation of farm women in agriculture. An attempt was also made to relate the participation of women in agriculture to size of land holding.

2. Methodology

Shikarpur village was selected purposively for the study. Majority of the families are land owning farm families. Women of the village are actively involved in agriculture. Stratified random sampling technique was used for sample selection on the basis of size of land holding and all the 201 farming families of the village were classified into four groups.

An equal number of 15 families was selected from the four groups at random giving a total sample of 60 families. The respondents were farm women between the age group of 20-5 years. Farm women from the selected families were interviewed using pre-structured interview schedule. Data were tabulated and statistically treated.

Groups	Land size (acres)	No. of families
I.	<5	97
II.	2.5-5	44
III.	5-7	30
IV.	7-10	30

3. Result and Discussion

Large majority of women were involved in all agricultural operations for food grains as well as for vegetable crops production and produce handling and their sub-activities except in some sub-activities such as land preparation operations involving more strenuous physical labour e.g. use of plough/harrow/leveller and driving the transport media for marketing of vegetable and food grain crops.

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However, level of participation differed with the sub-activities of different operations. Percentage involvement of women in different major agricultural operations is given in Table 1.

Table 1 Percentage Involvement of Women in Major Agricultural Operations

Activities	Percentage involvement	
	Food grains crops	Vegetable crops
Land preparation	53.6	63.7
Showing and fertilizer application	57.7	72.4
Transplanting	—	74.1
Irrigation	60.8	65.5
Weeding/inter-cultural crop protection	80.4	81.4
Harvesting	82.4	86.2
Threshing	79.3	—
Storage	71.1	—
Marketing	59.0	31.0

For rest of the activities which were common for both food grain as well as vegetable crops like procurement, storage of seeds and fertilizer and maintenance of implements were 25.7 per cent, 96.9 per cent and 59.7 per cent respectively.

Participation of farm women was different for sub-activities of different agricultural operations and different sizes of land holding groups in terms of level of involvement and nature of involvement.

3.1. Land Preparation

Land preparation activities in which women were involved were watering fields before ploughing, breaking clods/digging, manure application and supervising. Only activity in which women do not participate was the physical operation of plough/harrow/leveller. As the size of land holding increases the involvement of women in physical activities decreased but supervisory work increased e.g. most of the women involved in digging and manure application belong to small size of land holding families.

3.2. Sowing and Fertilizer Application

Sowing and fertilizer application activities include pre-sowing treatment, carrying seeds and fertilizer to fields, putting seeds into seed drill, sowing seeds, pre-preparation and application of fertilizer/manure, supervising and watch and ward of fields after sowing and women were involved in all these. More women were involved in carrying seeds and fertilizer to fields than in application of fertilizer/manure, putting seeds into seed drill and sowing seeds.

The data given in Table 2 shows that maximum participation of women was from families holding above 10 acres of land. They were involved in pre-sowing treatment for vegetable crops and also in supervising labour/children, helping in the sowing and fertilizer application activities. But no woman from this size of holding family was involved in the application of fertilizers/manure.

3.3. Transplanting (Vegetable crops)

Women were involved in transplanting activities like taking care of seedlings, transplanting seedlings and supervising the work of labour/children. Maximum of them i.e. 37.2 per cent were involved in supervising the work of labour/children followed by taking care of seedlings and actually performing the task of transplanting.

Table 3 Participation of Farm Women in Transplantation

Particulars	Size of land holding (acres)				
	Total	Upto 2.5	2.5-5	5-10	Above 10
Number of farm women	58	5	13	16	24
Women involved in transplantation	433(100) (74.1)	2 (4.7)	11 (25.5)	14 (32.5)	16 (37.3)
Involvement in sub-activities					
Taking care of seedlings	30 (69.7)	2(6.6)	11(36.7)	11(36.7)	6(20.0)
Transplanting	23(53.4)	2(8.6)	7(30.5)	8(34.8)	6(26.1)
Supervising	43(100)	2(4.7)	11(25.6)	4(32.5)	16(37.2)
Total	97	9	29	33	28

As the size of land holding increases the percentage involvement of women in transplanting vegetable crops increases although the nature of work changes. Maximum number of women involved in transplanting were from families holding more than 10 acres of land and their involvement was more in terms of supervising labour/children and minimum in the physical work of transplanting seedlings. (Table 3).

3.4. Irrigation

As seen in Table 4, women are involved in all irrigation activities which include starting tubewell, handling water for proper distribution and maintenance of irrigation channels and tubewells. Majority of women were involved in maintenance of irrigation channels and holding water for proper distribution.

Participation of women in irrigation of food grain crops was highest from families holding less than 2.5 acres of land whereas for vegetable crop, involvement of women in irrigation is much higher from families holding larger size of land than for food grain crops.

3.5. Weed and Crop Protection

Weeding and crop protection includes activities like weeding and insecticide storage, preparation, application and hand weeding and women are involved in all of these. However, maximum number of women were involved in hand weeding and very few were involved in application of weedicide/insecticide.

It is evident from Table 5 that more number of women were involved in weeding and crop protection from families holding more than 10 acres of land, both for vegetables as well as for food grain.

3.6. Harvesting

Table 6 reveals that involvement of women in harvesting for food grain crops was more for cutting, staking and disposal of waste than in transporting the produce near threshing floor. Involvement of women in harvesting vegetable crops was more in terms of picking vegetables, cutting undesirable parts, washing vegetables and grading them.

Involvement of women from small holding i.e. less than 2.5 acres was maximum for transporting the harvested crop to threshing floor and minimum from farm families holding more than 10 acres of land. Supervising labour/children involved maximum number of women from larger size of land holding families and nil for women from families holding less than 2.5 acres of land for vegetable crops.

3.7. Threshing

Threshing includes sub-activities like opening up bundles and handling over small bundles of harvested crop to person operating and threshing, grain collection and filling containers, storage and disposal of waste, hand threshing and supervising. Women were involved in all of these activities.

Size of land holding wise majority of those doing physical work of opening up bundles and handling them/or feeding the thresher were from families holding less than 2.5 acres of land. No one from families holding more than 10 acres of land was involved in the activity of feeding thresher.

3.8. Storage

Storage of food grain crops includes sub-activities like transporting grain to storage room, putting into storage bin/room and women were involved in all of these. All of the women who were involved in storage of food grain were in terms cleaning the storage bin/room. More number of women (71%) were involved in putting grain into storage bin, once the produce reaches home, than in transporting grain to storage place were holding wise more of those involved in transport grain from fields. Size of land holding wise more of those involved in transport grain to storage place were from families holding less than 2.5 acres of land. Number of women involved in fumigation of storage bin/room decreased as the size of land holding increase.

3.9. Marketing

Marketing of food grain crops as well as vegetables crops includes loading the transport vehicle, unloading at market place and supervising labour/children and women were involved in all of these. All those involved in marketing were involved more in loading the transport vehicle than in unloading at market place and unloading at market place is done only by women from small land holding families.

3.10. Procurement of Seeds and Fertilizers

The number of women who go outside the village for purchase of seeds and fertilizers is much less than the number of women who are involved in purchasing seeds and fertilizers from the village itself. Maximum percentage of women were involved in procurement of seeds and fertilizers from families holding less than 2.5 acres of land and minimum from families holding above 10 acres of land.

3.11. Storage of Seeds and Fertilizers

Storage of seeds and fertilizers includes storage and seed treatment and women were involved in both of these activities. Maximum percentage of women involved in seeds and fertilizers storage were from families holding above 10 acres of land.

3.12. Maintenance of Implements

Maximum involvement of women was in storage and cleaning of implements whereas in the case of greasing the implements minimum number of women were involved. More number of women were involved in maintenance of implements from families holding size of land below 2.5 acres and as the size of holding increases women's involvement in this activity decreases.

4. Conclusion

The study has shown that large majority of women were involved in all agricultural operations for food grain as well as for vegetable crops production except in some sub-activities in the case of land preparation and marketing. However, level of participation was different for sub-activities of different agricultural operations.

Size of land holding category wise contribution of women in terms of proportion in total labour force and time spent for most of the activities both for food grain crops and vegetable crops remained the same but nature of work changed i.e, as the farm size increased involvement of women in physical work decreased and in supervising work increased.

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Table 2 Participation of Farm Women in Sowing and Fertilizer Application (Frequency Distribution)

Particulars	Size of land holding (acres)/crops									
	Total	Upto 2.5		2.5-5		5-10		Above 10		
	Food grain	Veg.	Food grain	Veg.	Food grain	Veg.	Food grain	Veg.	Food grain	Veg
Total number of farm women	97	58	23	5	19	13	22	15	33	24
Women involved in sowing and fertilizer application	56 (100) (57.7)	42 (100) (72.4)	18 (32.1)	4 (9.6)	15 (26.8)	10 (23.8)	10 (17.9)	12 (28.5)	14 (23.2)	16 (38.1)
Involvement in sub-activities										
- Pre-sowing treatment	-	36 (85.7)	-	2 (5.5)	-	6 (16.7)	-	12 (33.4)	-	16 (44.4)
- Carrying seeds and fertilizers to field	54 (96.4)	36 (85.7)	18 (33.3)	4 (11.1)	15 (27.7)	10 (27.8)	9 (16.7)	12 (33.3)	12 (22.3)	10 (27.8)
- Putting seeds into seed drill/sowing seeds	24 (42.8)	36 (85.7)	12 (50.0)	4 (11.1)	8 (33.3)	10 (27.8)	3 (12.6)	12 (33.3)	1 (4.2)	10 (27.8)
- Application of fertilizer/manure	19 (33.9)	38 (90.4)	11 (57.8)	4 (10.6)	6 (31.6)	10 (26.4)	2 (10.2)	12 (31.6)	-	10 (26.4)
- Supervising/watch and ward of fills	51 (91.0)	36 (85.7)	16 (31.3)	2 (5.5)	15 (29.5)	6 (16.7)	10 (19.6)	12 (33.4)	10 (19.6)	16 (44.4)
Total	148	182	57	16	44	42	24	48	23	52

*Figures in brackets denote percentages.

Table 4 Participation of Farm Women in Irrigation (Frequency Distribution)

Particulars	Size of land holding (acres)/crops									
	Total		Upto 2.5		2.5-5		5-10		Above 10	
	Food grain	Vege-table	Food grain	Vege-table	Food grain	Vege-table	Food grain	Vege-table	Food grain	Vege-table
Total number of farm women	97 (100)	58 (100)	23 (100)	5 (100)	19 (100)	13 (100)	22 (100)	15 (100)	33 (100)	24 (100)
Women involved in irrigation	59 (60.8)	38 (65.5)	19 (32.2)	4 (10.5)	15 (25.4)	11 (28.9)	11 (18.6)	12 (31.5)	14 (23.8)	12 (28.9)
Involvement in sub-activities										
- Starting tubewell	22 (37.2)	27 (71)	6 (27.2)	4 (14.8)	7 (31.8)	7 (25.9)	5 (22.8)	7 (25.9)	4 (18.2)	9 (33.3)
- Maintenance of irrigation channels	56 (49.9)	38 (100)	19 (33.9)	4 (10.6)	15 (26.8)	11 (28.9)	9 (16.0)	12 (31.5)	13 (23.3)	11 (28.9)
- Handling water for proper distribution	58 (98.3)	38 (100)	19 (32.7)	4 (10.6)	15 (25.8)	11 (28.9)	10 (26.3)	12 (31.6)	14 (24.2)	11 (28.9)
- Maintenance of tubewell	1 (1.6)	1 (2.6)	-	-	1 (100.0)	1 (100.0)	-	-	-	-
Total	136	103	44	12	37	29	24	31	31	31

Figures in brackets denote percentage

Table 5 Participation of Farm Women in Weeding / Intercultural Operations/Crops Protection (Frequency Distribution)

Particulars	Size of land holding (acres)/crops									
	Total	Upto 2.5		2.5-5		5-10		Above 10		
	Food grain	Vege- table	Food grain	Vege- table	Food Grain	Vege- table	Food grain	Vege- table	Food grain	Vege- table
Total number of farm women	97	58	23	5	19	13	22	16	33	24
Women involved in weeding/ intercultural/ operations crop protection	78 (100) (80.4)	47 (100) (81.0)	20 (25.7)	5 (10.7)	18 (23.0)	12 (25.5)	20 (25.7)	15 (31.9)	20 (25.7)	15 (31.9)
Involvement in sub-activities										
- Weeding/insecticide storage	27 (34.6)	10 (21.2)	3 (11.2)	2 (20.0)	9(33.3)	3 (30.0)	6 (22.2)	3 (30.0)	9 (33.3)	2 (20.0)
- Pre-preparation activities	10 (12.8)	23 (48.9)	5 (50.0)	3 (13.0)	2 (20.0)	7 (30.4)	2 (20.0)	8 (34.8)	1 (10.0)	5 (21.7)
- Application	10 (12.8)	23 (48.9)	5 (50.0)	3 (13.0)	2 (20.0)	7 (30.4)	2 (20.0)	8 (34.8)	1 (10.0)	5 (21.8)
- Hand weeding	73 (93.5)	47 (100)	20 (10.6)	5 (10.6)	15 (25.6)	12 (25.6)	18 (24.7)	15 (31.9)	20 (27.4)	15 (31.9)
Total	120	103	33	13	28	29	28	34	31	27

Figures in brackets denote percentages

Table 6 Participation of Farm Women in Harvesting (Frequency Distribution)

Particulars	Size of land holding (acres)/crops									
	Total	Upto 2.5		2.5-5		5-10		Above 10		
	Food grain	Vege- table	Food grain	Vege- table	Food grain	Vege- table	Food grain	Vege- table	Food grain	Vege- table
Total number of farm women	97	58	23	5	19	13	22	16	33	24
Women involved in harvesting	80 (100)	50 (100)	22	5	18	1	20	15	20	19
	(82.4)	(86.2)	(27.5)	(10.0)	(22.5)	(2.0)	(25.0)	(30.0)	(25.0)	(38.0)
Involvement in sub-activities										
- Cutting /picking vegetables	67 (83.7)	41 (82.0)	22 (32.8)	5 (12.2)	16 (23.9)	11(26.8)	18 (26.8)	15 (36.6)	11 (16.50)	10 (24.3)
- Staking/ cutting undesirable parts	67 (83.7)	41 (82.0)	22 (32.8)	5 (12.3)	16 (23.9)	11 (16.5)	18 (26.9)	15 (36.7)	11 (16.4)	10 (24.5)
- Transporting near threshing floor/ washing vegetable	54 (67.5)	37 (74.0)	22 (40.7)	5 (13.5)	13 (24.0)	11 (29.7)	18 (33.3)	15 (40.5)	11 (20.0)	6 (15.3)
- Grading and putting vegetable in containers	-	37 (74.0)	-	5 (13.6)	-	11 (29.7)	-	15 (40.5)	-	6 (16.2)
- Storage /disposal of waste	60 (75.0)	23 (46.0)	16 (26.6)	5 (21.7)	15 (25.0)	6 (26.1)	18 (30.0)	6 (26.1)	11 (18.4)	6 (26.1)
- Supervising	(74 (92.5)	41 (82.0)	16 (21.6)	-	18 (24.4)	10 (24.4)	20 (27.0)	12 (29.3)	20 (27.0)	19 (46.3)
Total	322	220	98	25	78	60	92	77	64	57

Figures in brackets denote percentage