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Anuradha Ranjan Kumari
SMS, Home Science, Krishi Vigyan Kendra (ICAR-IIVR) Malhana Deoria U.P., India.

Correspondence
Anuradha Ranjan Kumari
SMS, Home Science, Krishi Vigyan Kendra (ICAR-IIVR) Malhana Deoria U.P., India.

Role of farm women in agriculture and their involvement in decision making - A study in Deoria district of Uttar Pradesh

Anuradha Ranjan Kumari

Abstract
In Indian Society both husband and wife participate in different household activities. Their role are generally complementary not only in physical participation in farm but also in the decision making process concerning major land use activities. She influences the farmer in selection of crop, developing the farm with irrigation and other facilities, adoption of latest technologies, timely harvesting, assisting the farmer in post harvesting and storage, timely marketing of the produce and in savings for the future. Inspite of all these, women are not given proper attention. But the globalization has provided many ways and means for the overall development and empowerment of women. The study was conducted in Deoria district of Uttar Pradesh during the year 2015-16 and 2016-17, out of sixteen blocks three blocks i.e. Salempur, Bhatni and Bhatpar Rani were selected for this study. From each block three villages were selected purposively. From these villages 15 farm women selected. Hence total sample size was 135 farm women. The data were collected from each respondent through personal interview method with the help of structured schedule. The findings of this study revealed that majority of the women participated regularly in activities like grading and storage, animal husbandry activities, weeding, drying and cleaning of grains, cutting, sowing operations and shifting production to threshing floor activities are the operations in which farm women participate regularly. Majority of the women perceived that losses at storage pests and diseases attack are the major causes for food grain losses. Empowerment of women in agriculture field is one of the major strategies for achieving food security. There is a need for empowerment of farm women to take care of food production and post harvest production losses for global food security through extension strategies.

Keywords: Farm Women, Agriculture, Decision Making, Women Empowerment.

Introduction
Food Security and Nutritional diversity is one of the key areas that a developing country should address. With varying local opportunities and challenges, the Kitchen Garden forms a panacea that can address food insecurity and bring in self reliance, sovereignty and dignity. Households have labour power the physical ability of household members to generate income (Christopher, 2006), when this labour power is used in the kitchen garden, it has the ability to improve Food Security and Nutritional diversity of the household.
Empowerment is the phenomena of nineties and is defined as 'giving power to' creating power within and enabling. Power is a relative concept, which describes a relationship between people, a powerful person has power over others, Empowerment entails power sharing, a change in the balancing of power between people. An increase in power of one party necessarily implies reduction in power of the other or others. Therefore, empowerment involves negotiation of the balance of power between the more and less powerful.
Women influence the farmer in many ways. She influences the farmer in selection of crop, developing the farm with irrigation and other facilities, adoption of latest technologies, timely harvesting, assisting the farmer in post harvesting and storage, timely marketing of the produce and in savings for the future. Inspite of all these, women are not given proper attention. But the globalization has provided many ways and means for the overall development and empowerment of women. For sustainable food security and development women empowerment is crucial in the present situation.

Methodology
The study was conducted in Deoria district of Uttar Pradesh during the year 2015-16 and 2016-17. Deoria district was purposively selected based on the farm women exposed to training and demonstration programmes. Out of sixteen block of Deoria district three blocks were selected. From each block three villages were selected for this study. Fifteen respondents

were identified from each village by following simple random sampling technique. Thus, the total sample size for the study was 135 farm women. Ex-post facto research design was employed in the present investigation. The data were collected personally from the respondents using a pre-tested structured interview schedule. The gathered information was analyzed by using appropriate statically methods i.e. Mean, Frequency, percentage, mean deviation and standard deviation.

Results and Discussion

Table 1: Socio-economic profile characteristics of respondents N=135

Particulars	Frequency	Percentage
Age		
Young (Up to 30 years)	36	26.66
Middle (31 to 50 years)	89	65.92
Old (Above 50 years)	10	7.40
Educational qualification		
Illiterates	35	25.92
Primary and middle school (1 to 7th std)	63	46.66
High school (8 to 10th std.)	28	20.74
Intermediate	07	5.18
Graduation	02	1.48
Family size		
Small (1 to 6 members)	18	13.33
Medium (7 to 10 members)	72	53.33
Large (10 members and above)	45	33.33
Land holding		
Marginal farmers (< 2.5 acres)	63	46.66
Small farmers (2.5 to 5.0 acres)	57	42.22
Big farmers (> 5.0 acres)	15	11.11
Extension participation		
Low (Mean – 0.425*SD)	35	25.92
Medium (Mean + 0.425*SD)	68	50.37
High (Mean + 0.425*SD)	32	23.70
Mass media utilization		
Low (Mean – 0.425*SD)	37	27.40
Medium (Mean + 0.425*SD)	69	51.11
High (Mean + 0.425*SD)	29	21.48
Risk orientation		
Low (Mean – 0.425*SD)	40	29.62
Medium (Mean + 0.425*SD)	62	45.92
High (Mean + 0.425*SD)	33	24.44
Scientific orientation		
Low (Mean – 0.425*SD)	42	31.11
Medium (Mean + 0.425*SD)	69	51.11
High (Mean + 0.425*SD)	24	17.77

Socio-economic profile characteristics of respondents: The socio-economic characteristics of respondents were analyzed and presented in Table 1. The table 1 depicts that majority (65.92%) of the respondents belonged to middle aged category followed by young (26.66 %) and old (7.40 %) age categories. With respect to educational qualification, majorities (46.66%) of them were educated up to primary and middle school, 25.92 percent of them were illiterates and smaller per cent of them were educated up to high school (20.74%), Intermediate (5.18 %) and graduation (1.48%).

It was also revealed that majority (53.33 %) were belonged to medium family size followed by large (33.33%) and small (13.33%) family size. With regard to land holding, majority (46.66%) of the respondents belonged to marginal farmer's category with a land holding of less than 2.5 acres. 42.50 percent of them were small farmers with a land holding of 2.5 to 5 acres. Only 11.11 per cent of them were big farmers with a land holding of more than 5 acres. In case of extension participation, majority (50.37%) of the respondents belonged to medium extension participation category followed by low (25.92%) and high (23.70%) categories respectively.

With regard to mass media utilization, majority (51.11%) of them belonged to medium category followed by low (27.40%) and high (21.48%) mass media utilization categories respectively. It was also revealed that the majority (45.92%) per cent of the respondents were in medium risk orientation category followed by low (29.62%) and high (24.44%) risk orientation categories respectively. Slightly more than fifty (51.11%) per cent of the respondents belonged to medium scientific orientation category followed by low (31.11%) and 17.77 per cent of them were high scientific orientation categories respectively.

Table 2: Participation of farm women in agriculture and other allied activities N=135

Activity	Regularly		Occasionally		Never	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Land preparation	37	27.40	40	29.62	58	42.96
Selection of crop and variety	15	11.11	32	23.70	88	65.18
Sowing operations	93	68.88	14	10.37	28	20.74
Procurement of inputs	17	12.59	12	8.88	106	78.51
Weeding	104	77.03	11	8.14	20	14.81
Manure application	18	13.33	32	23.70	85	62.96
Irrigation	21	15.55	36	26.66	78	57.77
Plant protection measures (Insecticide, Pesticide used)	14	10.37	31	22.96	90	66.66
Cutting	98	72.59	19	14.07	18	13.33
Shifting production to threshing floor	89	65.92	24	17.77	22	16.29
Drying and cleaning of grains	101	74.81	29	21.48	5	13.70
Grading and storage	111	82.22	17	12.59	7	5.18
Transportation and marketing	13	9.62	19	14.07	103	76.29
Animal husbandry activities	107	79.25	21	15.55	7	5.18

Participation of farm women in agriculture and allied activities:- Women participate in various agricultural activities. The level of participation of women in agricultural and allied activities varies greatly depending on the nature of the activity and also skill required for the activity. Other agricultural operations in which the women participate regularly are land preparation (27.40%), Irrigation (15.55%), Manure application (13.33%), Procurement of inputs (12.59%), Selection of crop and variety (11.11%), Plant protection measures (10.37%) and Transportation and marketing (9.62%) respectively. In most of the cases, women carry out the operations requiring great skills like sowing, grading, cleaning of grains, cutting, picking, drying of grains, storage and processing are the major farm operation. Singh et.al. (2004) also reported that the operations in which the participation of women was 100 percent were cleaning and produces cutting, picking, storage and processing. It was also observed from table 2 that as high as 82.22, 79.25, 77.03, 74.81,72.59, 68.88 and 65.92 per cent of the women respondents participate regularly in grading and storage, animal husbandry activities, weeding, drying and cleaning of grains, cutting, sowing operations and shifting production to threshing floor, respectively. It might be due to the fact that, these are the operation that required great skill and expertise and also these are the crucial operations in agricultural production. Chayal and Dhaka (2010) also reported that majority of farm women participate in harvest and post harvest operations and other operations like sowing, manure application and irrigation were performed on field by farm women. It is also evident from the table 2 that, the farm women participate occasionally in operations like land preparation (29.62%), irrigation (26.66%), manure application (23.70%), plant protection measures (22.96%). Drying and cleaning of grains (21.48%), shifting production to threshing floor (17.77%), animal husbandry activities (15.55%), cutting, transportation and marketing (14.07%), respectively. It might be due to lack of strength and ability of farm women to carry out ploughing and other land operation activities including inter cultivation operations. Similar results were also reported by Meti et.al. (2014).

It is also clear from table 2 that, procurement of inputs (78.51%), transportation and marketing (76.29%), plant protection measures (66.66%), selection of crop and variety (65.18%), manure application (62.96%), irrigation (57.77) and land preparation (42.96%) are the some of the agricultural operations in which farm women never participate.

Table 3: Participation of farm women in capacity building program Training/Demonstration N=135

Training/Demonstration	Frequency	Percentage
Use and importance of Vermi compost	110	81.48
Use of agriculture waste as organic matter	94	69.62
Nutritional Garden	130	96.29
Beekeeping	91	67.40
Demonstration on production of organic manure	62	45.92
Fodder production technologies	55	40.74
Dairy training	104	77.03
Clean milk production technologies	99	73.33
Demonstration on milk by product preparation	73	54.07
Soyabean processing training	59	43.70
Demonstration on maize seller	47	34.81
Demonstration on improved sickle	57	42.22

Extent of participation of farm women in capacity building programs (training/ demonstration)- It is clear from the results of table 3 that out of twelve training programs majority (96.29%) of farm women actively participated in trainings/demonstrations on nutritional garden, use and importance of vermin compost (81.48%), Dairy training (77.03%), Clean milk production technologies (73.33%), Use of agricultural waste as organic matter (69.62%), Beekeeping (67.40%), Demonstration on milk by product preparation (54.07%), Demonstration on production of organic manure (45.92%), Soyabean processing training (43.70%), Demonstration on improved sickle(42.22%), Fodder production technologies (40.74%) and demonstration on maize seller (34.81%). This is because of importance and case of practical adoptability by the farm women. The findings indicate that majority of farm women have realized the importance of participation in trainings/demonstrations resulting in higher aspiration for economic returns, higher achievement motivation for improved standard of living provoked by the organization during training and demonstration on agro based entrepreneurship.

Table 4: Overall impact of vermi compost and dairy training on knowledge status of farm women

Impact	Vermi compost	Nutritional garden	Beekeeping	Dairy
High (Mean +0.425*SD)	32 (23.70)	89(65.92)	19 (14.07)	34 (25.18)
Medium (Mean + 0.425*SD)	81 (60.00)	35 (25.92)	65 (48.14)	58 (42.96)
Low (Mean - 0.425*SD)	22 (16.29)	11 (8.14)	51 (37.77)	43 (31.85)

Impact of Vermi compost, Nutrition garden, Beekeeping and Dairy training on knowledge status of farm women – Table 4 shows that the majority of farm women belonged to high. Knowledge category with respect to Nutrition garden (65.92%) followed by medium (25.92%) and Low (8.14%) knowledge categories respectively. In case of vermi compost training programme maximum (60.00%) of respondents belonged to medium knowledge category followed by high and low. It is also indicated that the majority of farm women belonged to medium knowledge category with respect to both beekeeping (48.14%) and Dairy (42.96%). Remaining percent of them belonged to Low and high knowledge categories respectively. It might be due to their interest and active participation in trainings and demonstrations. The interest and active participation of individuals in training and demonstrations improves the knowledge status.

Perceived causes of food grain losses- It is clear from table 5 that losses at storage on pests attack is the major causes for the loss of food grains as expressed by majority (77.03%) of the farm women. Insect pest attack during crop production stage was also one of the major causes of food grain loss as expressed by 76.29 percent of the respondents. Other reasons for food grains losses as per perceived by farm women are diseases attack (73.33%), poor handling during harvesting and post harvesting operations (51.85%), Use of low quality inputs (45.92%) and weed infestation (28.88%). This might be due to the fact that farmers generally store the food grains in traditional storage structures without following any scientific methods and also they don't take up any scientific control measures against storage pests.

Table 5: Perceived causes of food grain losses

Causes	Frequency	Percentage
During production		
Use low quality inputs	62	45.92
Weeds infestation	39	28.88
Insect and pests attack	103	76.29
Diseases attack	99	73.33
During harvesting and post harvesting		
Poor handling during harvesting and post harvesting operations	70	51.85
Losses at storage (Storage pests attack)	104	77.03

Table 6: Relationship between Profile characteristics of respondents with their participation in agriculture and other allied activities.

Variables	Correlation Coefficient (r)
Age	-0.260*
Educational qualification	0..057NS
Family size	-0.312*
Land holding	0.350*
Extension participation	0.276*
Mass media utilization	0.104 NS
Risk orientation	0.468*
Scientific orientation	0.513

*Significant at 1 per cent level of significance NS – Non significant

Relationship between Profile characteristics of respondents with their participation in agriculture and other allied activities – It is clear from table 6 that the variables like land holding, extension participation, risk orientation and scientific orientation exhibited positive and significant relationship with the extent of participation of respondents in agricultural and allied activities. Whereas, variables like age and family size showed negative and significant relationship with the extent of participation of respondents in agricultural and allied activities. Other variables like educational qualification and mass media utilization did not show any relationship with the extent of participation of the farm women in agricultural and allied activities. Hence, there is a need for empowerment of farm women through extension education activities for effective and efficient participation in agricultural activities.

Conclusion

The present study concluded that the women play a significant and crucial role in agriculture and allied activities. Rural women constitute the most important work force in Indian economy and majority of the agricultural operations were carried out by the farm women. It is concluded from the study that grading and storage, animal husbandry activities, weeding, drying and cleaning of grains, cutting, sowing operations and shifting production to threshing floor activities are the operations in which farm women participate regularly. Participation of farm women in capacity building programmes like demonstration, trainings, field visits etc. enhances the knowledge level and their standard of living. Procurement of inputs, transportation and marketing, plant protection measures, selection of crop and variety, manure application, irrigation and land preparation are the operations in which farm women never participate. Development of entrepreneurship among farm women through appropriate extension strategies like group discussion, demonstration, training and exposure visit is crucial for sustainable development of farm women. Further, the participation of farm women in all the agro based enterprises through convergence of all stakeholders and facilitators is required. Hence government has to make a policy for all round development of women. There is a need for empowerment of farm women to take care of food production and post harvest production losses for global food security through extension strategies.

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