

Gender Roles in Crop and Animal Husbandry Practices and Household Activities with Respect to Changing Climate in Arid Ecosystem

Rajesh Bishnoi¹, Premlata Singh², S. K. Dubey³ and V. Sangeetha⁴

ABSTRACT

Women in rural India play a major role in shaping country's economy. The study focussed on the different roles of women and men in order to understand what they do in crop husbandry practices, in animal husbandry practices as well as in routine household activities. The study was conducted in arid ecosystem of Bikaner district of Rajasthan. Two stage stratified random sampling procedure was followed for selection of respondents. Total sample size was 120, comprising of 60 men and 60 women farmers. This study used gender analysis to document and interpret how men and women farmers ensured their livelihood and food security. The findings revealed that in crop husbandry activities, women were doing mainly field work like harvesting; intercultural operations and these activities are affected by climate change. Hence, their work load and drudgery needs to be addressed. Women farmers' role in economic activities like selling of crop produce, selling of livestock produce *etc.* were considerably less compared to men farmers in crop and animal husbandry practices. Majority of the work in animal husbandry activities and routine household activities were done by the women farmers as compared to men farmers. Closing the gender gap is not only the right thing to do, it is crucial for agricultural development and food security.

Key words: Gender roles, climate change, crop and animal husbandry practices and routine household activities

INTRODUCTION

Climate change is posing the greatest challenge to mankind at global as well as local levels. Climate refers to the statistics of the atmosphere over a period of time, usually several decades in length or longer. The American Meteorological Society defines the term climate change as follows: It is any systematic change in the long term statistics of climate elements (such as temperature, pressure or winds) sustained over several decades or longer. The United Nations Framework Convention on Climate Change (UNFCCC) defines 'climate change' as a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods. Agriculture today is increasingly becoming a women activity. As per the 2011 census, the women work force in agriculture and allied sectors is around 98 million, which amounts to about 37 per cent of the total agricultural workers in the country. The ratio between women and men agricultural labour and cultivators has gone up. Rural India is thus witnessing an intriguing process described as 'feminization of agriculture'. With shrinking land holding size and decreasing family income, there are high men out migration to seek better jobs. This leaves the women who are already over burdened and not so well equipped with the technical knowhow due to lack of literacy and extension contacts, with greater responsibilities of

managing both the household and farm. Women's contribution to agriculture has been found to be considerable, the major contribution being in livestock based activities (60-90%). However, their access to allocative resources and income is negligible. Increasing women's access to land, livestock, education, functional services, extension, technology in rural areas would increase their productivity and generate gains in agricultural output, food security, economic growth and social welfare. In the changing scenario, the participation of women work force in agriculture is going to increase 50 per cent by 2020. Thus, it is necessary to identify and address gender issues and roles in agriculture, especially in changing climate change scenario.

METHODOLOGY

The study was undertaken in the arid ecosystem of the Bikaner district of Rajasthan state. Total sample size was 120 comprising of 60 men and 60 women farmers. Men and women respondents were selected through two stage stratified random sampling. The respondents' perception was assessed through interview schedule covering different dimensions of their work in crop husbandry, animal husbandry and in routine household activities. The selected respondents were interviewed personally with the help of a structured interview schedule and their responses were recorded. The data thus collected were tabulated and statistically analysed to interpret the results.

¹ Ph.D Research Scholar, ² Professor and ³ Senior Scientist, ZPD, Kanpur ⁴ Scientist, Division of Agricultural Extension, ICAR Indian Agricultural Research Institute, New Delhi

Descriptive statistics were used to characterize respondents' perceptions. Non-parametric tests like Mann Whitney U Test and Wilcoxon Signed Ranks Test were used to test the statistical significance.

RESULTS AND DISCUSSION

Men and women farmers' role in the crop husbandry practices, animal husbandry practices and routine family activities were analysed. The results are presented in Table 1 to Table 4. The result revealed that land preparation (61%), sowing (72.54%), manure and fertilizer application (59.58%), irrigation (70.33%), plant protection measures (63.75%), threshing (57.66%), winnowing (55.83%) and marketing of produce (82.5%) were the crop husbandry practices mainly done by the men members of the family. Activities like inter-cultural operations (59.25%), harvesting (55.25%), and storing of food grains for consumption purpose (58.58%) were the crop husbandry activities mainly done by the women members of the family. These findings show that there was significant difference in participation of men and women farmers in all the crop husbandry practices. Climate change can increase women farmer's work load in the field as they are mainly responsible for post harvest activities such as the storage of food grains. They have very less participation and access to the marketing practices. In future women farmers will be required to play a greater role in agriculture and therefore, it is necessary to identify and address drudgery and farm mechanization issue so as to reduce drudgery, enhance safety and increase earning and efficiency.

Table 1: Comparative participation and role analysis (%) in crop husbandry practices as perceived by men and women respondents

Activities	n=120						Mann Whitney U Test
	Perception of men		Perception of women		Overall Perception		
	Men	Women	Men	Women	Men	Women	
Land preparation	62.00	38.00	60.00	40.00	61.00	39.00	-4.454**
Sowing	84.25	15.75	60.83	39.16	72.54	27.45	-8.302**
Manure and fertilizer application	61.66	38.33	57.50	42.50	59.58	40.41	-3.814**
Inter-cultural operations	39.33	60.66	42.16	57.83	40.75	59.25	-5.693**
Irrigation	80.00	20.00	60.66	39.33	70.33	29.66	-6.899**
Plant protection measures	75.00	25.00	52.50	47.50	63.75	36.25	-5.720**
Harvesting	45.00	55.00	44.50	55.50	44.75	55.25	-2.229*
Threshing	55.50	44.50	59.83	40.16	57.66	42.33	-2.716**
Winnowing	61.00	39.00	50.66	49.33	55.83	44.16	-2.851**
Storing grains	42.00	58.00	40.83	59.16	41.41	58.58	-5.476**
Marketing of produce	90.00	10.00	75.00	25.00	82.50	17.50	-9.659**

**significant at p<0.01 level, *significant at p<0.05 level

Table 2: Comparative participation and role analysis (%) in animal husbandry practices as perceived by men and women respondents

Activities	n=120						Mann Whitney U Test
	Perception of men		Perception of women		Overall Perception		
	Men	Women	Men	Women	Men	Women	
Fodder cutting	45.66	54.33	43.50	56.50	42.80	54.08	-2.342**
Transportation of fodder	35.00	65.00	49.66	50.33	42.33	57.66	-2.562**
Offering fodder to the animals	30.00	70.00	29.07	70.93	29.50	70.46	-6.374**
Cleaning of sheds	15.00	85.00	31.50	68.50	23.25	76.75	-9.009**
Offering water to the animals	40.00	60.00	37.00	63.00	38.50	61.5	-4.444**
Milking	14.00	86.00	24.66	75.33	19.33	80.66	-7.452**
Livestock product selling	73.50	26.50	60.83	39.16	67.16	32.83	-7.185**
Raising of goats and sheep	70.00	30.00	60.00	40.00	65.00	35.00	-6.058**
Animal health care	45.00	55.00	40.00	60.00	42.50	57.50	-3.846**
Artificial insemination	65.00	35.00	58.00	42.00	61.50	38.50	-4.790**

**significant at p<0.01 level, *significant at p<0.05 level

The data in the Table 2 show that livestock product selling (67.16%), raising of goat and sheep (65%), and artificial insemination (61.5%) were the animal husbandry practices mainly done by the men members of the family. Activities like fodder cutting (54.08%), transportation of fodder (57.66%), offering fodder to the animals (70.46%), cleaning of sheds (76.75), offering water to the animals (61.5%), milking (80.66%), and animal health care (57.5%), were the animal husbandry activities mainly done by the women members of the family. These findings showed that there was significant difference in all the animal husbandry practices between men and women farmers.

The data in the Table 3 show that all the routine household activities like collection of fuel and fire wood (72.25%), preparation of food (92.5%), child care (57.16%), care for elders and sick (62.5%), cleaning and repair (80%), collecting water for domestic purpose (73.5%) and collection of vegetables and fruits (61.58%) were performed by the women members of the family. These findings showed that except for caring for elders and sick, there was significant difference in all the routine family practices.

The participation of women farmers in routine family activities was found to a greater extent in collection of water for food preparation, washing of clothes *etc.* They had major role in caring of elder members of family but in economic activities their participation were very low. Livelihood security was assessed by taking five essential components as human, social, physical, natural and financial assets.

Table 3: Comparative role analysis (%) in routine household activities as perceived by men and women respondents n=120

Activities	Perception of men		Perception of women		Overall Perception		Non-parametric test
	Men	Women	Men	Women	Men	Women	
Collection of fuel and fire wood	35.50	64.50	20.00	80.00	27.75	72.25	-7.226**
Preparation of food	10.00	90.00	5.00	95.00	7.50	92.50	-9.584**
Child care	47.83	52.16	37.83	62.16	42.83	57.16	-2.931**
Care for elders and Sick	40.00	60.00	35.00	65.00	37.50	62.50	-.096
Cleaning and repair	25.00	75.00	15.00	85.00	20.00	80.00	-7.997**
Collecting water	23.00	77.00	30.00	70.00	26.50	73.50	-5.858**
Collection of vegetables and fruits	40.33	59.66	36.50	63.50	38.41	61.58	-4.447**

**significant at p<0.01 level, *significant at p<0.05 level

Table 4: Changes in livelihood security of men and women farmers n=120

Livelihood Security Parameter	Men		Women	
	Z	Asymp. Sig. (2-tailed) ^a	Z	Asymp. Sig. (2-tailed) ^a
Human assets	-1.768	.07	-3.394**	.001
Natural assets	-2.463**	.01	-.354	.723
Social assets:	-2.633**	.00	-4.400**	.000
Physical assets	-.545	0.58	-4.228**	.000
Financial assets	-1.017	0.30	-3.099**	.00

**significant at p<0.01 level, a. Wilcoxon Signed Ranks Test

The data in the Table 4 showed that, for men farmers there was significant difference in the natural assets and social assets, while for human, physical and financial assets, there were no significant differences when compared with their role in these assets, a decade ago. Present livelihood security of men farmers in the human assets, when compared with their role a decade ago, shows non-significance. The result found that, for women farmers there was significant difference in the human assets, social assets, physical assets and financial assets when compared with a decade ago in terms of livelihood security. Present status of women farmers in the natural assets, when compared a decade ago, shows non-significance. Wilcoxon Signed Ranks Test was used for comparison of result between earlier and changing livelihood security. The study found that women had high participation in livestock activities and substantial participation in the crop husbandry activities, but less participation in the financial activities like marketing of produce, livestock product selling, etc. Tibbo *et al.*, 2009 also found that in terms of access to and control over the agriculture-derived incomes, males have more access and control over these incomes and resources than women.

CONCLUSION

The study revealed that men and women respondents played different roles in crop animal husbandry practices and routine family activities. Their livelihood security assets were significantly changing. In this era of global competition, if we want to combat challenges of food security and climate change, we have to focus on the women farmers. Development of strategies for supporting adaptation and responding to the consequences of climate change will require collaboration at local, regional and global level and between different sectors of society.

Paper received on : November 03, 2014
Accepted on : December 04, 2014

REFERENCES

FAO, 2010. Gender website. (www.fao.org/gender/gender/home/gender), 25 October, 2012.

Lambrou, Y. and Nelson, S., 2010. Farmers in changing climate does gender matter. Report of Food and Agriculture Organization of the United Nations, Rome.

Tibbo, M., Abdelali M. M., Rischkowsky, B. and Hassan, A. A., 2009. Gender sensitive research enhances agricultural employment in conservative societies: the case of women livelihoods and dairy goat programme in Afghanistan and Pakistan. Paper presented at the FAO-IFAD-ILO Workshop on Gaps, trends and current research in gender dimensions of agricultural and rural employment: differentiated pathways out of poverty. 31 March - 2 April 2009 at Rome, Italy.