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Gender Analysis of Crop and Animal Husbandry Practices in Hill Agriculture

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ABSTRACT

Women farmers have been the vital workforce in agriculture, as they manage agricultural activities along with the household chores. The study was conducted in purposively selected Almora and Nainital districts of Uttarakhand, India. The two blocks each from Almora (Takula and Hawalbagh) and Nainital (Betalghat and Dhari) were selected randomly. Further, two villages from each block were selected randomly. Fifteen women and five men farmers from each village were selected through simple random sampling. Thus, a total of 120 women and 40 men respondents from two districts constituted the sample for the study. The study revealed gender gap in crop husbandry, animal husbandry and daily routine practices in hill agriculture. The gender analysis in crop husbandry practices revealed that a majority of the women farmers were engaged in weeding (94.60%) followed by thinning and gap filling (87.82%), storage (82.23%), threshing and winnowing (74.77%), irrigation (70.52%), loading and unloading (63.58%) were the major activities done by women farmers. Agricultural activities like sowing (66.46 %), seed treatment (51.42%) and harvesting (52.33%) were done by women farmers with a significant help from men farmers. The activities like fodder cutting (88.27%) and cleaning animal shed (86.75%) were the activities demand larger time share of women farmers. Other activities like feed and fodder to the animals (70.47%), milking (75.67%) and animal care (77.50%) were also majorly done by women. Most of the activities like food preparation (99.00%) followed by collection of fuel and fodder (97.00%), collecting water (89.40%) and family care (88.20%) were the major time consuming activities done by the women farmers as compared to their male counterpart.

Key words: Gender analysis, hill agriculture, animal husbandry

INTRODUCTION

Women farmers have been the most important pillar of Indian agriculture, as they manage agricultural activities along with the household tasks. In hills, men members of the family go to plains in search of job leaving women counterparts to look after agriculture and house. They are left to survive on the meager resources. As per 2011 census, women workforce in agriculture and allied sectors is 98 million, which is 37 per cent of total wage workers. Research on women in agriculture shows that on an average women work for 15 to 16 hours a day and 4 to 5 hours more than their men counterparts. Rural women are much more overburdened than men owing to their multiple occupations, but worldwide their hard work has mostly been unpaid. Dash and Srinath (2013) reported that there is a need for expansion of non-formal education, especially in respect of knowledge and technological empowerment of a vast section of the work force in rural areas that includes major share of women. Doss (2011) revealed that labour burden of rural women exceeds that of men, and includes a higher proportion of unpaid household responsibilities related to preparing food and collecting fuel and water. The contribution of women to agricultural and food production is significant but it is impossible to verify empirically the share produced by women. IFAD (2010) presented with the facts that women's participation in off-farm paid activities can be considered as an important pathway out of poverty in rural areas, not only because of their direct contribution to family incomes, but also because of the positive impact on child nutrition. It was reported that weeding (1110 hrs/

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year), transplantation (591 hrs/ year), cutting and uprooting (493 hrs /year), threshing (737 hrs/ year) were drudgery prone among farm activities due to their time consumption and difficulty perceived on 5 point rating scale. Except ploughing, cart driving, and arranging inputs and marketing farm produce, women help in carrying out all other farm operations like compost making, sowing, weeding, application of fertilizer and manure, application of irrigation, protection from birds, harvesting, threshing, manuring, winnowing, drying, stacking and carrying were well documented (Borah and Kalita,2002). They do the most tedious and back-breaking tasks in agriculture, animal husbandry and at home. Studies have shown that nine operations in which women actively participate were seed storage, winnowing, care of animals, harvesting, weeding, soak pit, sowing, transplanting, applying manure in the field using implements, respectively (Sharma and Singh, 1970). They further found that women participate in large proportions in four farm operations, viz., seed storage (75%), winnowing (75%) care of animals (74%) and harvesting (71%) in comparison to others. While in another study Shashikala (1990) reported that women participated in farm activities like, harvesting, weeding, transplanting and threshing and participated less in the activities like application of manure, digging trenches, irrigation and channel making.

Whereas in another study (Kavita and Reddy,2002) documented that farm women from the marginal land group spent 34.3 per cent of the time in total farm activities followed by small (33.7%), medium (33.1%) and big (31.1%) land holding groups with significant difference between the farm groups regarding time utilization pattern in total farm activities. A majority of the women respondents in both the areas (rainfed and irrigated) participated regularly in activities like weeding, harvesting, winnowing and transplanting. Women in hills are at a more disadvantaged stage, as their counterpart work in army, industries or other income generating avenues in plains. It becomes compulsion to the women to handle both family and agriculture. They have to work throughout the day starting with their household chores, nurturing children, livestock, going out to bring feed, fuel, fodder and drinking water to sustain their livelihood. The role of women in the agricultural economy of Himachal Pradesh revealed that among the farm workers the proportion of females was higher than males. The level of illiteracy was higher among females as compared to males. Two-thirds of their time was utilized for tending of cattle and one-third for crop production activities. This necessitated a serious thinking to plan the appropriate extension design to study on women farmers in hill agriculture.

METHODOLOGY

The study was conducted in purposively selected Almora and Nainital districts of Uttarakhand, India. In Almora district, two blocks *viz.* Takula and Hawalbagh were selected through simple random sampling method. Further, two villages each *i.e.* Basauli and Harauli from Takula block and Mehatgaon and Udiyari villages from Hawalbagh block were selected randomly. In Nainital district, two blocks *viz.* Betalghat and Dhari were selected. Further, two villages each i.e. Bargal and Basgaon from Betalghat block and Gajar and Gunigaon villages from Dhari block were selected randomly. Twenty (20) respondents (15 women & 5 men) were drawn randomly from each of the selected eight villages. There were 60 women and 20 men respondents each from Almora and Nainital districts. Thus, a total of 160 respondents (120 women & 40 men) constituted sample for the study. The collected data were coded and tabulated for statistical analysis.

RESULTS AND DISCUSSION

The summary of the significant findings of the study is presented below:

Gender analysis in crop husbandry practices as perceived by men and women respondents

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

Activities	Perception of men (n=40)		Perception of women (n=40)		Overall Perception (%)		Mann Whitney U test score
	Men	Women	Men	Women	Men	Women	
Land preparation	62.00	38.00	40.00	60.00	51.00	49.00	124
Sowing	35.25	64.75	31.83	68.17	33.54	66.46	132*
Seed treatment	61.66	38.34	35.5	64.50	48.58	51.42	126
Thinning and gap filling	11.2	88.8	13.17	86.83	12.18	87.82	133*
Irrigation	41.3	58.7	17.66	82.34	29.48	70.52	128*
Pesticide application	78.00	22.00	42.5	57.50	60.25	39.75	135*
Weeding	6.30	93.7	4.50	95.50	5.40	94.60	137*
Harvesting	55.50	44.5	39.84	60.16	47.67	52.33	126
Threshing and winnowing	32.8	67.2	17.66	82.34	25.23	74.77	129*
Loading and unloading	42.00	58.00	30.84	69.16	36.42	63.58	124
Storage	20.00	80.00	15.54	84.46	17.77	82.23	135*
Chasing away wild animals	75.5	24.5	47.57	52.43	61.53	38.47	122

*Higher than 127 score is significant

Gender analysis was done to have an idea of the participation of men and women in various agricultural practices in hill agriculture. The gender analysis in crop husbandry practices depicted in table 1 revealed that a majority of the women farmers were engaged in weeding (94.60%) followed by thinning and gap filling (87.82%), storage (82.23%), threshing and winnowing (74.77%), irrigation (70.52%), loading and unloading (63.58%) were the major activities done by women farmers. Agricultural activities like sowing (66.46 %), seed treatment (51.42%) and harvesting (52.33%) were done by women farmers with a significant help from men farmers. Also the activities like land preparation (51%), pesticide application (60.25%) and chasing away wild animals (61.53%) i.e. monkey, wild boar were the major farm activities done by the men farmers. In the pre sowing activities women had marginal help from men. Similar findings were observed by (Borah and Kalita, 2002). Mann Whitney U test score showed that sowing, thinning and gap filling, irrigation, pesticide application, weeding, threshing and winnowing and storage activities have found significant difference between perception of men and women respondents.

Gender analysis in animal husbandry practices as perceived by men and women respondents

The data related to gender analysis in animal husbandry practice in hill agriculture depicted in table 2. It is found that all the animal husbandry practices in hill were mainly done by women farmers. Among those activities, fodder cutting (88.27%) and cleaning animal shed (86.75%) were the activities demand larger time share of women farmers. Other activities like feed and fodder to the animals (70.47%), milking (75.67%) and animal care (77.50%) are also majorly done by women. These findings are in consistent with Rais *et al.* (2014). Mann Whitney U test score showed that fodder cutting, feeding fodder to the animals, cleaning shed, milking, animal care activities have been found significant difference between perception of men and women respondents.

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

Activities	Perception of Men (n=40)		Perception of women (n=40)		Overall Perception (%)		Mann Whitney U test score
	Men	Women	Men	Women	Men	Women	
Fodder cutting	5.60	94.40	17.87	82.13	11.73	88.27	131*
Feeding fodder to the animals	30.00	70.00	29.07	70.93	29.53	70.47	135*
Cleaning shed	15.00	85.00	11.50	88.50	13.25	86.75	136*
Milking	24.00	76.00	24.67	75.33	24.33	75.67	131*
Animal care	15.00	85.00	30.00	70.00	22.50	77.50	129*

Gender analysis in routine family practices as perceived by men and women respondents

The result of data related to gender analysis in routine family practices are given in table 3 revealed that routine family practices also demand much time from women. Most of the activities like food preparation (99.00%) followed by collection of fuel and fodder (97.00%), collecting water (89.40%) and family care (88.20%) were the major time consuming activities done by the women farmers as compared to their male counterpart. Mann Whitney U test score showed that collection of fuel and firewood, preparation of food, family care, collecting water activities have found significant difference between perception of men and women respondents.

Table 3: Comparative role analysis (%) in routine family practices as perceived by men and women respondents

Activities	Perception of men (n=40)		Perception of women (n=40)		Overall Perception (%)		Mann Whitney U test score
	Men	Women	Men	Women	Men	Women	
Collection of fuel and firewood	6.00	94.00	0	100.00	3.00	97.00	135*
Preparation of food	2.00	98.00	0	100.00	1.00	99.00	136*
Family care	8.60	91.40	15.00	85.00	11.80	88.20	133*
Collecting water	7.60	92.40	13.60	86.40	10.60	89.40	132*

*Higher than 127 score is significant

CONCLUSION

The study revealed gender gap in crop husbandry, animal husbandry and daily routine practices in hill agriculture. Gender analysis when performed on the hilly men and women respondents, it revealed that all the intercultural operations and post harvest operations were performed by majority of the women farmers. In animal husbandry activities and routine family practices, women were the flag bearers. In hills, women were engaged fulltime in animal husbandry activities and routine family practices, with negligible help from men, as they move to plains to augment their family income. Hence, gender friendly technologies related to hill agriculture need to be demonstrated to the women farmers in hills so that they can take decision for adoption of gender friendly technologies. Also awareness, availability and accessibility of gender friendly tools need to be ensured by the government to the women farmers in hill agriculture.

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