GENDER PARTICIPATION AND TIME UTILIZATION PATTERN IN EQUINE REARING IN MIDDLE HIMALAYAN REGION OF INDIA

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ABSTRACT

Animal sector is said to be women oriented but one field, Equine rearing, is still predominantly in hands of males. The study was conducted in Chamoli and Uttarkashi districts of Uttarkhand, taking a total of 80 respondents using snowball sampling method. The study discusses about the family labour participation, time utilisation and employment generated through the different activities in rearing of pack animals. The activities were divided as regular and occasional activities and activities like taking animal for grazing, taking animal to work, grooming, treatment, training of animal and marketing were principally the job of males. Taking the animal for grazing consumed most of the time, i.e 4 hours a day. The employment generated for male, female, and child were calculated to be about 289.89, 56.91, and 7.56 man days respectively with a pooled value of 354.66 man days on an average.

Key words: gender participation, employment generation, time utilisation, pack animal rearing, Himalayan region.

INTRODUCTION

The agricultural sector engages about 57 per cent of the total working population and about 73 per cent of the rural labour force (Birthal, 2008). Livestock employes 8.8per cent of the agricultural work force (Livestock Census, 2012). Animal husbandry promotes gender equity. More than three-fourth of the labour demand in livestock production is met by women. (GOI, 2012). A report by National Task Force on Technological empowerment stated that gender divisions in agriculture are such that the activities involving manual labour are assigned to women while all operations involving machinery are generally performed by men, with only 6 per cent of independent participation by women in livestock management. In India, women's involvement in livestock management is a longstanding tradition. Rural women, who constitute nearly 77 per cent of the total female population of the country, play an important role in agriculture and animal husbandry besides the household responsibilities (Kanwat and Singh, 2014). DAHD (2006)reported that the involvement and participation of rural women were more in animal husbandry than in agriculture. In contrast to all these findings, Annual Report 2004-05 of National Research Centre for women in Agriculture revealed that in livestock owning households participation of men in livestock related activities were found to be more than that of women.

The identification of gender roles in equine rearing can help Government and research institutions to develop appropriate extension and

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research programs which shall enhance scientific rearing of these animals. Hence the present study was undertaken to estimate the gender participation and time utilization by equine rearing family members for performing various activities of pack animals and employment generated through it.

Materials and Methods

The study was conducted in two districts of Uttarakhand, viz., Chamoli and Uttarkashi. A total of 80 respondents were selected, using snowball sampling technique, 40 from each district. The activities were classified as regular and occasional activities. Regular activities were the daily care activities which included grazing of the animal, preparation of feed, feeding and watering, cleaning of shed, collection of dung, taking animal for work and grooming of the animal. Occasional activities included taking animal to hospital, preparation and administration of medicines, care of sick animal, marketing and training of the animal. The family members'participation in the activities and the time utilized in the completion of the activity was enquired. The employment generated by the activities was calculated on relative basis taking into consideration the pack size and labour unit equivalents. According to the FAO standards, the labour unit equivalent for adult person with an age of 15+ year up to 59 was 1 whereas for youth (age 9-15years) and old person (age 59 or more), the labour unit equivalent is 0.5 (Manual of Animal Husbandry Statistics, 2011).

Result and discussion

The results obtained regarding the extent of participation of equine farmers and their family members in the management of pack animals is presented here. Family labour participation refers to the participation of various family members in different activities of pack animal rearing. Table 1 depicts the family labour participation by the family members of the pack animal owners for the different activities of the pack animal rearing. It is evident from the table that mostly men were involved in activities of taking the animals for grazing (73.75%), preparation of feed (52.5%) and feeding and watering (61.25%) of the animal followed by females and children. This is in oppose to the rearing of other livestock as stated by Gupta *et al.,* (1986); Rangnekar*et al.,*(1992), and Rathod*et al.,* (2011). Children were not at all involved in preparation of feed. This may be due to the reason that they didn't have knowledge about the kind of feed and amount to be fed. Cleaning of the shed and collection of dung was mostly done by females (88.75%). Studies on other livestock also suggest that the farm women were actively involved in cleaning of animal sheds and disposal of cow dung (Kumar and Singh, 2002; Gurjar and Pathodiya, 2006; Rathod, *et al.,* 2011; Ramesh and Meena, 2012). Grooming of the animal was done mostly by males (91.25%) followed by children (8.75%). Females did not groom the animal which differs from the findings in other livestock as stated by Rathod*et al.,* (2011). Taking animal to work was the sole activity of males. Pack animal rearing was the primary occupation and also the males have to travel afar for work, therefore, it was done cent per cent by males. Among the occasional activities, taking the animal to the veterinary hospital (88.75%) and preparation and administration of medicines (82.5%) were predominantly activities of males. Females did not take them to veterinary hospitals may be because handling of these animals and moving for distances is somewhat difficult for them. Ramesh and Meena(2012) and Gurjar and Pathodiya (2006) also reported that deworming and taking care of sick animals was mainly men oriented activities in other livestock species. However, some of the literature indicated that females were actively involved in medication and treatment (Rathod, *et al.,* 2011 and Tripathi and Bhanja, 2000). Care of sick animal was done jointly by both males (63.75%) and females (36.25%) which was in concordance with reporting of Ramesh and Meena, 2012. Children were not involved in both preparation and administration

of medicines and care of the sick animal may be due to lack of technical experience and knowledge. Marketing and training of the animal was done cent per cent by males which was in consonance with the study of Adams and Ohene-Yankyera, 2014; Ramesh and Meena, 2012; Rathod*et al.,* 2011 and Tripathi and Arya, 1995. As clearly seen, the males were mostly involved in the activities related to the pack animals.

Table 1: Extent of Participation of the Equine farmers and their family members in the management of pack animal.

Activities	Chamoli (n=40)			Uttarkashi (n=40)			Total (N=80)		
Regular activities	**Male**	**Female**	**Child**	**Male**		**Child**	**Male**		**Child**
Grazing	29 (72.5)	6 (15)	5 (12.5)	30 (75)	10 (25)	0 (0)	59 (73.75)	16 (20)	5 (6.25)
Preparation of feed	19 (47.5)	21 (52.5)	0 (0)	23 (57.5)	17 (42.5)	0 (0)	42 (52.5)	38 (47.5)	0 (0)
Feeding and watering	23 (57.5)	16 (40)	1 (2.5)	26 (65)	12 (30)	2 (5)	49 (61.25)	28 (35)	3 (3.75)
Cleaning of shed	2 (5)	36 (90)	2 (5)	1 (2.5)	35 (87.5)	4 (10)	3 (3.75)	71 (88.75)	6 (7.5)
Collection of dung	2 (5)	36 (90)	2 (5)	1 (2.5)	35 (87.5)	4 (10)	3 (3.75)	71 (88.75)	6 (7.5)
Taking animal for work	40 (100)	0 (0)	0 (0)	40 (100)	0 (0)	0 (0)	80 (100)	0 (0)	0 (0)
Grooming	36 (90)	0 (0)	4 (10)	37 (92.5)	0 (0)	3 (7.5)	73 (91.25)	0 (0)	7 (8.75)
Occasional activities									
Taking animal to hospital	35 (87.5)	0 (0)	5 (12.5)	36 (90)	0 (0)	4 (10)	71 (88.75)	0 (0)	9 (11.25)
Preparation and administration of medicines	34 (85)	6 (15)	0 (0)	32 (80)	8 (20)	0 (0)	66 (82.5)	14 (17.5)	0 (0)
Care of sick animal	24 (60)	16 (40)	0 (0)	27 (67.5)	13 (32.5)	0 (0)	51 (63.75)	29 (36.25)	0 (0)
Marketing	40 (100)	0 (0)	0 (0)	40 (100)	0 (0)	0 (0)	80 (100)	0 (0)	0 (0)
Training of animal	40 (100)	0 (0)	0 (0)	40 (100)	0 (0)	0 (0)	80 (100)	0 (0)	0 (0)

Figures in parenthesis indicate percentage.

The table 2 depicts the time utilization pattern by the pack animal owners. About 62.5 per cent of the respondents said that they grazed the animals for 4-5 hours/day and the average time for grazing was found to be 4 hours per day. Majority of the respondents said that it took them 10-20 minutes/ day for preparation of feed and 5-10 minutes/day for feeding and watering the animal. Majority took the animals for 2-3 hours of work per day. About 75 per cent of the owners told that they took their pack animal at least once a year to veterinary hospital for treatment followed by 17.5 per cent who had taken twice. Cent per cent respondents said that they needed 15-20 minutes/ day for preparation and administration of medicines and taking care of sick animal (taking that the animal is sick for 20 days in a year). Majority of the respondents opined that they cleaned the shed for 20-25 minutes/ day and spent 10 minutes/day in dung collection. Majority opined that grooming of animal needed 1 hour/day. 65 per cent of the respondents did marketing once in five years whereas 35 per cent did once in 2 years. Purchase of accessories and feed of the animal took 15 minutes per week for all the respondents whereas 83.75 per cent respondents said that they spent 2-3 hours/ day for training of the new animal, giving training for 180 days. As evident from the table 2 that maximum time consuming activity was grazing of the animal which consumes about 4 hours for about 270 days in a year.

Table 2.: Distribution of pack animal owners according to the time involved in different activities in rearing of pack animals.

Activity	Time required/ day	Chamoli (n=40)	Uttarkashi (n=40)	Total (N=80)	Average time required
Grazing	3-4 hours	19 (47.5)	11 (27.5)	30 (37.5)	4 hours/day
	4-5 hours	21 (52.5)	29 (72.5)	50 (62.5)	
Grazing days/ year	260-280 days	40 (100)	40 (100)	80 (100)	270 days/ year
Preparation of feed	10-20 minutes	33 (82.5)	33 (82.5)	66 (82.5)	20 minutes/day
	20-30 minutes	7 (17.5)	7 (17.5)	14 (17.5)	
Feeding and watering	5-10 minutes	27 (67.5)	27 (67.5)	54 (67.5)	10 minutes /day
	10-15 minutes	13 (32.5)	13 (32.5)	26 (32.5)	
Cleaning of the shed	15-20 minutes	6 (15)	7 (17.5)	13 (16.25)	
	20-25 minutes	18 (45)	20 (50)	38 (47.5)	25 minutes /day
	Upto 30 minutes	16 (40)	13 (32.5)	29 (36.25)	
Collection of dung	5 minutes	0 (0)	0 (0)	0 (0)	
	10 minutes	40 (100)	40 (100)	80 (100)	10 minutes/day
Grooming	30 minutes/animal	4 (10)	9 (22)	13 (16.25)	
	1 hour/ animal	32 (80)	31 (77)	63 (78.75)	1 hour/ day
	1.5 hours/animal	4 (10)	0 (0)	4 (5)	
Taking animal for work	2-3 hours	30 (75)	21 (52.5)	51 (63.75)	3 hours/ day
	3-4 hours	10 (25)	19 (47.5)	29 (36.25)	

Taking animal to hospital	Once/ year	31 (77.5)	29 (72.5)	60 (75)	
	Twice /year	5 (12.5)	9 (22.5)	14 (17.5)	Twice/year
	Thrice or more/ year	4 (10)	2 (5)	6 (7.5)	
Preparation and administration of medicines	15 -20 minutes/ day for 20 days in a year	40 (100)	40 (100)	80 (100)	20 minutes/day for 20 days in a year
	20-25 minutes /day for 20 days in a year	0 (0)	0 (0)	0 (0)	
Care of sick animal	15-20 minutes/ animal/ day for 20 days/ year	40 (100)	40 (100)	80 (100)	17.5 minutes/ animal/ day for 20 days/ year
Marketing of animal	Once / two years	15 (37.5)	13 (32.5)	28 (35)	Once/ 3.5 years
	Once/ five years	25 (62.5)	27 (67.5)	52 (65)	
Purchase of feed and accessories	15 minutes/ week	40 (100)	40 (100)	80 (100)	15 minutes/ week
Training	2-3 hours/day for 180 days	35 (87.5)	32 (80)	67 (83.75)	3 hours/day for 180 days
	3-4 hours/day for 180 days	5 (12.5)	8 (20)	13 (16.25)	

Figures in parenthesis indicate percentage.

Table 3.a shows the employment generation through pack animal rearing. The employment generated for male, female, and child were calculated to be about 289.89, 56.91, and 7.56 man days respectively with a pooled value of 354.66 man days. This was found to be higher than the one stated by Chauhan, 2008. In Chamoli, the employment generated were calculated to be about 299, 49 and 12 man days respectively. In Uttarkashi, it was 280, 56 and 3 man days for male, female and child respectively.Thus, the total employment generated was found to be 360 and 348 man days in Chamoliand Uttarkashi, respectively. Hence it is clearly observed that labour utilization in pack animal rearing by male was more followed by females and child. It is because most of these activities are performed by males exclusively. Most of the activities were mostly done by males viz; training of the animal, marketing, grooming, grazing, etc. Females mostly did the job cleaning the shed with feeding and watering of the animal. Equine husbandry is labour intensive and income generation mainly involves the work done by these animals. Migration is need of the people because of seasonal effect and tourism, which generates the substantial amount of income. Transportation of commodities in difficult heavy terrains is solely based on these pack animals. The movement of the owner with these animals is a necessity and therefore, the equine husbandry involves more of labour participation by men. For women, it is not possible to travel such a long distance and migrate for months without family, so they are involved only in sedentary jobs which require less of labour. Besides, women were involved in other livestock farming activities.

Table 3.a Employment generated in man days from pack animal rearing

Individual	Average Employment generated in man days		
Range	Chamoli (n=40)	Uttarkashi (n=40)	Total (N=80)
Male (93.89-473.89)	299.06 ± 22.57	280.72 ± 76.93	289.89 ± 57.08
Female (0.4-202.5)	49.23 ± 56.65	56.65 ± 56.65	56.91 ± 62.23
Child (0-75.9)	11.99 ± 22.67	3.12 ± 7.51	7.56 ± 17.36
Total (281-581)	**360.28 ± 66.2**	**348.44 ± 50.08**	**354.66 ± 58.65**

Figures in parenthesis indicate percentage.

Table 3.b depicts the level of employment generated through pack animal rearing. It is evident from the table that majority (85%) of the owners had low (281-381 man days) level of employment through pack animal rearing. About 8.75 per cent respondents had medium (381-481 man days) level and only 7.5 per cent had high level (481-581 man days) of employment generation. Average employment generated through pack animal rearing was 354.66 man days. Chauhan (2008) reported that200 human- days per annum employment was availed of by the equine rearers.

Table 3.b Distribution of pack animal owners according to level of employment generated

Total Man days/year	Chamoli (n=40)	Uttarkashi (n=40)	Total (N=80)
Low (281-381)	32 (80)	36 (90)	68 (85)
Medium (381-481)	5 (12.5)	2 (5)	7 (8.75)
High (481-581)	3 (7.5)	2 (5)	6 (7.5)
Mean ± S.D.	360.28 ± 66.2	348.44 ± 50.08	354.66 ± 58.65

Figures in parenthesis indicate percentage.

CONCLUSION

Pack animal rearing is the primary occupation with the participation of the family members in their management. Animal husbandry is becoming feminized but Equine sector is still predominantly taken care of by men. The results indicated that activities like grazing, taking animal to work, grooming, treatment, training of animal and marketing were principally the job of males. Joint participation of males and females were seen in feeding and watering and taking care of the sick animals however, cleaning of the shed was exclusively the task of females. Children were least involved in equine rearing. Taking the animal for grazing consumed most of the time, i.e 4 hours a day. The time required for daily activities in ascending order was like feeding and watering (5-10 minutes); collection of dung (10 minutes); preparation of feed (10-20 minutes) cleaning of the shed (20-25 minutes) grooming of animal (1 hour) and taking animal to work (3 hours). The pack animal rearing provided a relative gainful employment of 354.66 man days on an average for the pack animal owners of which males had 289.9 man days.

As the males were more involved in pack animal activities, the other members of the family viz., females and child, can be taught to rear other domestic animals. This will increase the income of the family and will provide a continuous income throughout the year even in lean seasons. The identification of gender roles

in pack animal rearing could help extension, veterinary and research institutions to develop appropriate educational programs and research. Training about the scientific management of these equines should be given as per the defined roles performed by the family members. There is need for appropriate technologies which reduces the manual burden of owners and also increases the equine health. Women's access to services should also be improved through appropriate training / extension programmes as to enhance their capacity and reduce the gender biasness.

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