

Research Paper :

Participation and time spent in dairying activities by members of dairy cooperatives

PUNAM K. YADAV AND INDU GROVER

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ABSTRACT

The study was conducted in Haryana State, India on a sample of 200 members of dairy cooperatives, comprising of 100 men and 100 women drawn from 10 villages of two-districts viz. Hisar and Mahendergarh. The gender analysis of extent of intergender involvement in twenty two dairy operations revealed that women were more involved in feed related activities, maintenance and dung management but in animal disease and management both men and women were equally involved occasionally while in marketing men had high involvement. Among six major dairy activities on the basis of weighted mean score (WMS) and ranks, it was revealed that participation varied between these activities on gender basis with women participation being higher in care and maintenance related activities, carried out mainly indoor and men with marketing and animal disease and management, carried out mainly outdoor. The total mean time spent by men in the six major activities, 2 hours 35 minutes and for women is 4 hour 21 minutes per day confirming that women spent more time than men in dairy related activities every day.

See end of the article for authors' affiliations

Correspondence to:

PUNAM K. YADAV
Department of Extension
Education, College of Home
Science, C.C.S. Haryana
Agricultural University,
HISSAR (HARYANA)
INDIA

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In our country a mixed crop-livestock farming system is generally practiced. Most families keep a few cattle for food, nutritional security, income, status and wealth. Indian women along with men counterparts are extensively involved in numerous operations in crop and animal husbandry. Women have extensive workloads with dual responsibility for farm and household production, processing and care. In an Indian Himalayas study (1988) it has been documented that a pair of bullocks works 1064 hours, a man 1212 hours and a woman 3485 hours in a year on a one-hectare farm, a figure that illustrates women's significant contribution to agricultural production.

Livestock sector is emerging as an important facet for agricultural growth and is also considered as a potential sector for export earning. Today, India ranks number one in production of milk. This sector contributes nearly 25 per cent to the gross value of agricultural output at the national level and is a potential enterprise (Tiwari and Sharma, 2007). Livestock development is emerging as a major rural development activity and more so as an activity which is likely to benefit women directly (Ramkumar *et al.*, 2004; Chaudhary, 2005).

Today in India, there are 75,000 dairy cooperative societies, spread all over the country with a membership of 10 million. The farmer in the village is now assured of a better future due to these cooperatives (NDDB, 2005). The vast majority of the dairy cooperative membership is assumed by men and lately women dairy cooperatives

are being established. Rural farmers in the state of Haryana are engaged in varied agro-based activities, as land is a limiting factor. Dairying is the best suitable alternative in this situation for ensuring regular marketing of their produce, timely payment and other benefits (Grover and Sethi, 2005; Birthal and Taneja, 2006). In Haryana, milk producers have formed 4650 dairy cooperative societies at village level out of which 730 are women cooperatives (Gayatri, 2005).

Livestock patterns differ widely among ecological zones and socio-political systems. Women are not only centrally involved in milk production, but also in collection, processing and marketing of dairy products, roles which were often overlooked by development programmes (World Bank, 1991). Despite considerable involvement and contribution, women's role in livestock production has often been underestimated or, worse ignored. Gender-blindness is partly the result of a paternalistic bias, but also of the attitudes of women themselves, who may have been conditioned by their culture and society to undervalue the worth of the work they do. During the last decade, the gender issues have attracted the attention of many researchers, as well as that of government agencies. Keeping this in view the present investigation was undertaken to study the gender analysis of profile of members of dairy cooperatives, their participation and time spent in dairying activities.

METHODOLOGY

The study was conducted in Haryana State, India on a sample of 200 members of dairy cooperative, comprising of 100 men and 100 women drawn from 10 villages of two districts. Multistage sampling procedure was adopted for the selection of milk unions, districts, villages and respondents. The selected Dairy Co-operative Societies were Baropati, Talwandi Rana, Arya Nagar, Ladwa and Dhaima from Hisar district and Balaha Kalan, Raghunathpura, Bachhod, Silarpur and Ratta Kalan from Mahendergarh district.

An interview schedule was prepared and used for primary data collection from the field. To assess the intergender involvement in dairy activities, the extent of physical involvement of men and women of the family and the mean time spent in minutes per day in different aspects of dairying in 22 activities grouped under six major activities *viz.*, feed related, maintenance, dung management, milk and milk management, animal disease and management and marketing were investigated along with time spent. Using the schedule, the participation and time spent was studied. Weighted mean for participation and time spent was calculated.

FINDINGS AND DISCUSSION

Profile of members revealed that 55 per cent of men and 70 per cent of women were in middle age group (35-50 years), all were married, cent per cent of men were literate whereas 40 per cent women were illiterate. Majority of members had nuclear family, belonged to backward caste, farming was main occupation, annual income was in middle range, had low material possession and medium mass media exposure. Majority (68.0%) of men beneficiaries had medium score for entrepreneurial traits as compared to 88.3 per cent of women who had low score. Majority of men members maintained herd size of 3 to 5 and women up to 2, both reported dairying as an economical enterprise and moderately profitable. The mean daily sale of milk by men members was 13.1 litres and by women members it was 10 litres.

The gender analysis of extent of intergender involvement for participation and mean time spent daily and occasionally in various dairy operations has been presented in Table 1. Feed related activities included bringing fodder from field, chaffing of fodder, prepare feed for animals. It was found that majority of women on a daily basis were involved in bringing fodder from field (80.0%) and mean time spent per day was 50 minutes, chaffing of fodder (90.0%) and mean time spent was 20 minutes and prepare feed for animals (95.0%) and mean time spent was 30 minutes. The corresponding

figures for men were (30.0%), (50.0%) and (0.0%), respectively and mean time spent per day was 30, 15 and 3 minutes. The weighted mean score (WMS) and rank for these activities for women for preparing feed was 2.95 (Rank I), for chaffing fodder 2.90 (rank II) and for bringing fodder from fields 2.75 (Rank III) and for men for chaffing fodder WMS was 2.15 (Rank I), for bringing fodder 2.0 WMS (Rank II) and prepare feed 1.05 WMS (Rank III). The spearman rank order correlation between ranks was -0.50 at 5% level of significance and depicts that the ranks are fairly negatively correlated.

Regarding maintenance, it was found that majority of women in comparison to men were "always" involved in cleaning of animal sheds (95.0%) and mean time spent was 40 minutes, cleaning of mangers/ water troughs (92.0%) and mean time spent was 20 minutes, bathing/ cleaning of animals ((90.0%) and mean time spent was 30 minutes and offering water to animals (80.0%) and mean time spent was 25 minutes were undertaken daily. In case of men the corresponding figures were 0.0%, 2.0%, 20.0% and 30.0%, respectively and mean time spent was 5, 15 and 18 minutes, respectively. The weighted mean score (WMS) and rank for these activities for women for cleaning of animal sheds was 2.95 (rank I), cleaning of mangers/ water troughs 2.92 (rank II), bathing/ cleaning of animals 2.90 (Rank III) and offering water to animals 2.80 (Rank IV) and for men for offering water to animals WMS was 2.00 (Rank I), bathing/ cleaning of animals 1.80 (Rank II), cleaning of mangers/ water troughs 1.09 (Rank III) and cleaning of animal sheds 1.02 (Rank IV). The spearman rank order correlation was - 1.00 and shows that the ranks are significantly negatively correlated at 5% level of significance and the involvement varies tremendously on gender basis.

As regards to dung management, it was found that the cent per cent women were "always" involved in preparation and storage of dung cakes spending mean time of 30 minutes followed by collection of dung (95.0%) daily and mean time spent was 20 minutes whereas there was no involvement of men respondents in this activity. The weighted mean score (WMS) and rank for these activities for women for preparation and storage of dung cakes was 3.00 (Rank I) and collection of dung 2.95 (Rank II). The spearman rank order correlation was -1.00 and shows that the ranks are significantly negatively correlated at 5% level of significance. Men almost had nil involvement whereas women participation is substantial.

Regarding various aspects of milking and milk management, it was found that except milking (80.0%), all the other dairying activities *viz.* boiling of milk, cleaning of utensils used for milking, churning of milk and preparing

Table 1 : Gender analysis of participation in and time spent in various dairy operations daily

Sr. No.	Operations	Men					Women						
		Frequency/ Percentage			Weighted mean score	Rank	Mean time spent (min)	Percentage/ Percentage			Weighted mean score	Rank	Mean time spent (min)
		A	S	N				A	S	N			
A.	Feed related activities												(r_s) = -0.50
1.	Bringing fodder from field	30	40	30	2.00	II	30	80	15	05	2.75	III	50
2.	Chaffing the fodder	50	15	35	2.15	I	15	90	10	00	2.90	II	20
3.	Prepare feed for animals	00	05	95	1.05	III	03	95	05	00	2.95	I	30
B.	Maintenance												(r_s) = -1.00*
4.	Cleaning of animal sheds	00	02	98	1.02	IV	02	95	05	00	2.95	I	40
5.	Cleaning of mangers/ water troughs	02	05	93	1.09	III	05	92	08	00	2.92	II	20
6.	Cleaning of animals	20	40	40	1.80	II	15	90	10	00	2.90	III	30
7.	Offering water to animals	30	40	30	2.00	I	18	80	20	00	2.80	IV	25
C.	Dung Management												(r_s) = -1.00*
8.	Collection of dung	00	05	95	1.05	I	03	95	05	00	2.95	II	20
9.	Preparing and storage of dung cakes	00	00	100	1.00	II	00	100	00	00	3.00	I	30
D.	Milking and milk management												(r_s) = -0.45
10.	Milking	30	50	20	2.10	I	15	80	15	05	2.75	III	20
11.	Boiling of milk	00	00	100	1.00	V	00	100	00	00	3.00	I	15
12.	Cleaning of utensils used for milking	00	03	97	1.03	III	02	100	00	00	3.00	I	10
13.	Churning of milk	00	05	95	1.05	II	03	100	00	00	3.00	I	20
14.	Preparing milk products	00	02	98	1.02	IV	02	90	10	00	2.90	II	10
E.	Animal disease and management												(r_s) = 0.50
15.	Health care of animals	80	20	00	2.80	I	15	75	25	00	2.75	I	15
16.	*Care of sick animals	30	45	25	2.05	II	10	60	40	00	2.60	III	15
17.	*Care of pregnant animals	25	55	20	2.05	II	10	70	30	00	2.70	II	10
18.	*Care of new born calves	25	50	25	2.00	III	10	75	25	00	2.75	I	15
F.	Marketing												(r_s) = 0.10
19.	Selling of milk	50	30	20	2.30	IV	20	25	30	45	1.80	I	10
20.	Keeping milk records	75	00	25	2.50	II	05	25	20	55	1.70	II	04
21.	*Money collection	95	05	00	2.95	I	15	30	20	50	1.80	I	05
22.	*Estimating profits/ loss	65	10	25	2.40	III	15	15	10	75	1.30	III	04

* Occasional activities

A-Always (Score 3), S-Seldom (Score 2), N- Never (Score 1)

WMS = Weighted Mean Score; Max. WMS = 3.00

(r_s) = Spearman Rank Order Correlation

milk products were performed “always” by cent per cent women respondents. Men only were involved in milking (30% “always”). The weighted mean score (WMS) and rank for these activities for women for boiling of milk, cleaning of utensils used for milking, churning of milk was 3.00 (rank I) followed by preparing milk products 2.90 (Rank II) and milking 2.75 (Rank III) and for men for milking WMS was 2.10 (Rank I), churning of milk 1.05 (Rank II), cleaning of utensils used for milking 1.03 (Rank III), preparing milk products 1.02 (Rank IV) and boiling of milk 1.00 (Rank V). The spearman rank order

correlation was – 0.45 and shows that the ranks are fairly negatively correlated at 5% level of significance.

Regarding animal disease and management, health care of animals was conducted daily and was carried out “always” by majority of men (80.0%) and women undertaken (75.0%) and mean time spent was 15 minutes for both. Majority of women carried out the activities viz., care of sick animals (60.0%), care of pregnant animals (70.0%) and care of newborn calves (75.0%) as and when needed and mean time spent on these occasions was 15, 10 and 15 minutes, respectively. In case of men

respondents the corresponding figures for “always” were 30.0%, 25.0% and 25.0%, respectively. The weighted mean score (WMS) and rank for these activities for men for health care of animals like dehorning and deworming 2.80 (Rank I), care of sick animals and care of pregnant animals 2.05 (Rank II), care of newborn calves 2.00 (Rank III) and for women for offering care of newborn calves and health care of animals like dehorning and deworming WMS was 2.75 (Rank I), care of pregnant animals 2.70 (Rank II), care of sick animals 2.60 (Rank III). The spearman rank order correlation was 0.50 and shows that the ranks are fairly consistent at 5% level of significance.

Regarding marketing, majority (95.0%) of men respondents were occasionally but “always” involved in money collection followed by daily keeping milk records (75.0%) with mean time spent as 15 and 5 minutes, respectively, estimating profits/ loss (65.0%) and selling of milk (50.0%) with mean time spent as 15 and 20 minutes. In case of women respondents the involvement in money collection was “always” of 30.0 per cent followed by selling of milk and keeping milk records (25.0%), and only 15.0 per cent were involved in estimating profits/ loss. The weighted mean score (WMS) and rank for these activities for men for money collection 2.95 (Rank I) followed by keeping milk records 2.50 (Rank II), estimating profits/ loss 2.40 (Rank III) and selling of milk 2.30 (Rank IV). The WMS for women ranged between 1.30 to 1.80. The spearman rank order correlation was 0.10 and shows that the ranks are poorly correlated at 5% level of significance.

The results obtained are similar to the findings of Anil *et al.* (1992), Narayana (1997), Rangi (2000), Yasari (2005), Grover and Sethi (2007), Sikka *et al.* (2007) who reported that in livestock management indoor jobs like milking, processing, feeding, cleaning, care and management, milking and processing, dung management are done by women while selection, breeding, treatment of animals, marketing which require outside contact,

involvement of men was significantly higher.

Details for gender analysis in participation and time spent in six major dairy operations daily are presented in Table 2. It is evident that among the six major activities the WMS and ranks for men in descending order out of 3.00 were for marketing (WMS 2.40, rank I), health care (WMS 2.05, rank II), feed related activities (WMS 1.70, rank III), maintenance (WMS 1.47, rank IV), milking and milk management (WMS 1.24, rank V) and dung management (WMS 1.02, rank VI). The women obtained highest WMS of 2.95 and rank I for dung management followed by activities of milking and milk management (WMS 2.93, rank II), feed related activities (WMS 2.86, rank III), maintenance (WMS 2.85, rank IV), health care (WMS 2.60, rank V) and marketing (WMS 1.75, rank VI). The comparison of involvement in activities on the basis of WMS and ranks revealed that participation varies between these activities on gender basis with women participation being higher in health care, dung management, feed and maintenance related activities, carried out indoor and near home and men with marketing, health care and management, mainly outdoor. The total time spent daily by men and women was 2 hours 35 minutes and 4 hours 21 minutes, respectively.

Kharole (1990), Sethi (1991), Grover and Sethi (2005) reported that on an average rural woman spent 3 hours 26 minutes, 3 hours 10 minutes and 3 hours 42 minutes, respectively per day in dairy farming. Thakur (1997) pointed out that on an average woman devotes 5 hours 35 minutes per day as compared to 1 hour 15 minutes devoted by men in animal husbandry activities.

Conclusion:

The extent of intergender involvement in various dairy operations reveals that majority of women in comparison to men were involved in bringing fodder from field, chaffing of fodder, prepare feed for animals, cleaning of animal sheds, cleaning of water troughs, bathing/ cleaning

Table 2 : Gender analysis of participation and time spent in major dairy operations daily

Sr. No.	Operations	Participation				Total mean time spent daily			
		Men		Women		Men		Women	
		WMS	Rank	WMS	Rank	Time (min)	Rank	Time (min)	Rank
1.	Feed related activities	1.70	III	2.86	III	48.0	I	100.0	I
2.	Maintenance	1.47	IV	2.85	IV	33.0	II	28.5	III
3.	Dung management	1.02	VI	2.95	I	03.0	VI	25.0	IV
4.	Milking and milk management	1.24	V	2.93	II	22.0	IV	75.0	II
5.	Animal disease and management	2.05	II	2.60	V	10.0	V	10.0	VI
6.	Marketing	2.40	I	1.75	VI	25.0	III	14.0	V
	Total	9.88		15.94		141.0		252.5	

WMS = Weighted mean score; Max. WMS = 3.00

of animals, offering water to animals, collection of dung and preparation and storage of dung cakes, boiling of milk, cleaning of utensils, churning of milk and preparing milk products, health care, care of sick animals, care of pregnant animals and care of new born calves, majority of men were involved in dehorning and deworming, marketing and money collection. As participation varied so time spent by gender on individual activities. The average mean time spent by men was less and by women was much higher confirming that women spent more time than men in dairy related activities. It is concluded that the involvement of women in various dairy activities was higher and mainly related to tender care of animals and indoor activities except fodder collection and dung management as compared to men whose participation was higher in animal disease management and marketing while these activities were outdoor ones.

Authors' affiliations:

INDU GROVER, Department of Extension Education, College of Home Science, C.C.S. Haryana Agricultural University, HISSAR (HARYANA) INDIA

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