

Original Research Article

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## Extent of Participation of Rural Women and Men in Dairy Farming Practices in Bikaner District of Rajasthan, India

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### ABSTRACT

India is the world's largest milk producer and primarily an agricultural society where animal husbandry is the backbone of the national economy. In Rajasthan, dairying provides millions of marginal farmers and landless labourers for their livelihood so it is a major economic activity of rural people. The state faces constant drought and famine, which often leads to crop failure because most of the agriculture is fed with rain. In this climate scenario, the dairy sector provides permanent annual income to a large number of farmers. It is in rural areas that domestic activities are performed by female family members. Apart from this, there is a lot of participation and contribution of women; there are also significant gender inequalities in Indian villages. Therefore, there is a need to fix gender injustice in the livestock sector. Efforts are needed to increase women's ability to communicate confidently and meet their strategic needs. The present study was conducted in Bikaner district. Out of seven panchayat samities two panchayat samities, one having highest milk production i.e. Khajuwala and other having lowest milk production i.e. Sri Dungargarh was selected for this investigation. Five gram panchayats from each panchayat samiti were selected with lottery method. Thus selected total ten gram panchayats. One village from each gram panchayat was selected so comprised total ten villages by using simple random sampling. From Khajuwala – Pahalwan ka bera, Barala, Poogal, Dhodha, Shiv nagar and from Sri Dungargarh – Bapeu, Sheruna, Toliyasar, Bhojas and Jhanjheu. Fifteen women and fifteen men were selected from each village on the basis of having two or more than two milking animals and who have actively involved in dairy farming activities. Overall three hundred respondents were selected in which one hundred fifty women and one hundred fifty were men included respectively by simple random sampling technique. Data were collected with the help of pre tested Interview schedule. The findings revealed that in general information majority of respondents belonged to the age group of 37 to 60 years, other back ward caste, belonged to nuclear family, up to primary education, 1 to 2 hectare of land and monthly income from 8001 to 10,000. Finding further reveals that majority of women had no membership while majority of men had membership in one social organization. More than half of men had high level and women had medium level of mass media exposure and had 2 to 4 milking animals. Study revealed that majority of women were mainly participated in various daily dairy activities i.e. cow dung collection and management, milking, care of new born calves and preparing milk products whereas men were mainly participated in various activities i.e. selling of milk, keeping record of milk and money, health care of animals, cleaning and bathing of animal. So findings revealed although women had high participation in dairy farming activities but they had less participation in marketing related activities.

#### Keywords

Dairy farming,  
Gender analysis,  
Livelihood,  
Drought and  
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### Introduction

India is the world's largest milk producer and consumer, and by now it is the world's largest milk-giving herd due to the increase in demand as high income milk and dairy

products are consumed more. India has its own special place in the international market and it is the second largest producer of milk producer and milk products in the world. There is a mutually dependent relationship between agriculture and dairy-farming.

Food and fodder are available for cattle from agricultural products, while providing livestock nutritional security goods, along with various type of milk products produces milk, ghee, butter, paneer, condensed milk, milk powder, curd etc. With triple increase over the next 10 years in milk cost at international platform, India will be the leading country to prepare milk products in the world. Like the mineral water industry the milk processing industry has adequate possibilities to grow very fast.

Rajasthan is India's largest geographical area, which covers the tenth of the country's land, in which only 5.7% of the country's population is covered. In Rajasthan, 75.1% of the total 68.5 million human population live in rural areas and 24.9% resides in urban areas. The state is second in milk production in the country of the total milk produced, 53 percent of buffaloes are milk, 36 percent are milk of cattle and 11 percent goat's milk. Rajasthan is a major economic activity of rural people, especially in dry and semi-arid regions. The state faces constant drought and famine, which often leads to crop failure because most of the agriculture is fed with rain. In this climate scenario, the dairy sector provides permanent annual income to a large number of farmers. (Daring in Rajasthan, a Statistical Profile Sept 2016)

Many research studies have indicated that the responsibilities of dairy are almost entirely women's shoulders. There is enough evidence to show that livestock and management related activities are primarily the responsibility and domain of rural women. Generally women are responsible for feeding, feed collection, milking, processing, dung management and while men who usually manage the sale of milk and milk products. They are actively participating in various dairy farming practices, including harvesting of crops and feeding from the fields,

preparing the sick animal, preparing the feed, feeding the animals, cleaning animal sheds, giving milk, giving cow dung collection and cake Making etc. are included.

Gender roles, positions and relationships vary according to place (countries, regions and villages), groups (class, ethnic, religious and caste), generation cycle and life cycle. Gender relationships determine domestic security, family well-being, planning, production and many other aspects of life. In India, the production of livestock is largely in the hands of women. In fact, animal husbandry is becoming feminine. More than two-third of the workforce is women in agricultural production. Most of the livestock farming activities such as fodder collection, feed, water and health care, management, milking and processing at home level, value addition and marketing are done by women. Despite their considerable involvement and contribution, significant gender inequalities are also available in access to technology, loans, information, inputs and services, as there are probably inequalities in the ownership of productive assets including land and livestock.

### **Materials and Methods**

The study was conducted in Bikaner district of Rajasthan purposely as dairy farming is the first occupation for livelihood as majority of area in district is rain fed. Rural men and women play an important role in various activities related to dairy farming. There are seven panchayat samities out of them two panchayat samities; one having highest milk production i.e. Khajuwala and other having lowest milk production i.e. Sri Dungargarh were selected for the present investigation. Out of forty four gram panchayats in Khajuwala panchayat samiti five gram panchayats were selected with lottery method namely Amarpura, Karnisar bhatiyar, Poogal,

Tharoosar, Shiv nagar and out of forty one gram panchayats in Sri Dungargarh panchayat samiti five gram panchayats were selected with lottery method namely Sheruna, Bapeu, Toliyasar, Benisar, Jhanjheu.

Thus one village from ten gram panchayat was selected so comprised total five villages were taken from each gram panchayat by using simple random sampling. Thus ten villages were selected for the present investigation i.e. Khajuwala – Pahalwan ka bera, Barala, Poogal, Dhodha and Shiv nagar. Sri Dungargarh – Bapeu, Sheruna, Toliyasar, Bhojas and Jhanjheu.

Fifteen women and fifteen men were selected from each village on the basis of having two or more than two milking animals and who have active participation in dairy farming activities. Overall three hundred respondents were selected in which one hundred fifty respondents were women and one hundred fifty respondents were men included respectively by simple random sampling technique. The practices were classified into the following categories on their activity participation pattern was classified as follows: always, occasionally and never. Their scaling was 3, 2, 1 respectively.

### **Statistical analysis of data**

Appropriate statistical methods and tools were like Percentage and frequency, Mean per cent score (MPS), Standard deviation, Range and Pearson's correlation coefficient (r) test were used for the analysis of data.

### **Results and Discussion**

#### **Descriptive statistics of respondents**

The findings in table 4.1 reveal that majority of the respondents were of 37 to 60 years and had up to primary education. Less than half of

the respondents had 5-7 cattle and nearby half of the respondents had 7-20 litre milk production per day. Further it is also revealed that most of the respondents had training and more than half of men had high level and women had medium level of mass media exposure.

Perusal of data in table 2 shows under feed related activities It was found that majority of women (95.33%), (94.00%) and (72.00%) always involved in activities i.e. prepares feed (chaat), chaffing fodder and harvesting of green fodder. The corresponding figures for men were (0.0%), (2.00%) and (4.67%) respectively.

In maintenance regarding activities it was found that most of the women (94.00%) and (82.67%) always involved in activities i.e. cleaning and bathing of animal and offering water to animal. In case of men the corresponding figures were 65.33% and 31.33% respectively. Majority of men (88.67%) and only 41.33 per cent of women always participated in storage of fodder activity.

Regarding dung management, it was found that cent per cent of women were "always" involved in cow dung collection and 95.33 per cent of women were involved in preparing and storage of dung cakes (95.33%) whereas only 9.33 per cent of men respondents were occasionally involved in dung management activities.

It was found in milking and milk management, that most of the women (98.67%) and (97.33%) were always involved in milking of animal and preparing milk products respectively. In case of men, only 3.33 per cent were always involved in milking animal activity whereas no involvement of men was found in preparing milk products. Regarding animal disease and management,

cent per cent of women and 78.67 per cent of men were always involved in health care of animals. Most of the women always carried out the activities viz., care of new born calves (98.67%) and care of sick animal (98.00%). In case of men respondents the corresponding figures for “always” were 2 per cent and 7.33 per cent respectively.

Regarding marketing, cent per cent of men were always involved in marketing i.e. selling of milk and keeping record of milk and money. In case of women respondents they were “occasionally” involved in selling of milk (9.33%) followed by keeping record of milk and money (4.00%).

The findings reveal that majority of women respondents were mostly participated in Cow dung collection , Health care of animals, Milking of animal, Care of new born calves, Care of sick animals, Preparing milk products, Prepare feed (chaat), Preparing and storage of dung cakes as 100.00%, 100.00, 98.67, 98.67, 98.00, 97.33, 95.33, 95.33 per cent.

Whereas majority of men respondents were mostly participated in Selling of milk, Keeping record of milk and money, Storage of fodder, Health care of animals, Cleaning and bathing of animal as 100.00, 100.00, 88.67, 78.67, 65.33 per cent.

Pearson’s coefficient correlation was -0.097 shows that the participation of men and women respondents in all the dairy farming activities was negatively correlated at 1% level of significance.

The data presented in table.3 depicts that women had high participation in ‘cow dung collection’ and ‘health care of animals’ (weighted mean score 3.000), ‘milking of animal’ and ‘care of new born calves’ (weighted mean score 2.987) and ‘care of sick

animal’ (weighted mean score 2.980) with rank order I, II and III respectively whereas men had high participation in marketing activities i.e. ‘selling of milk’ and ‘keeping record of milk and money’ (weighted mean score 3.000), ‘storage of fodder’ (weighted mean score 2.887) and ‘health care of animals’ (weighted mean score 2.767) with rank order I, II and III respectively.

The other dairy farming related activities performed by women were ‘preparing milk products’ (weighted mean score 2.973), ‘preparing and storage of dung cakes’ (weighted mean score 2.953), ‘chaffing fodder’ (weighted mean score 2.933), ‘cleaning and bathing of animal’ (weighted mean score 2.927), ‘offering water to animals’ (weighted mean score 2.780), ‘harvesting of green fodder’ (weighted mean score 2.667), ‘storage of fodder’ (weighted mean score 2.287) and ‘selling of milk’ (weighted mean score 1.047) with rank order IV, V, V, VI, VII, VIII, IX, X, XI and XII respectively.

It is seen from the findings that men had participation in other dairy farming activities i.e. ‘cleaning and bathing of animal’ (weighted mean score 2.567), ‘offering water to animals’ (weighted mean score 2.187), ‘care of sick animal’ (weighted mean score 1.600), ‘chaffing fodder’ (weighted mean score 1.327), ‘harvesting of green fodder’ (weighted mean score 1.280), ‘milking of animal’ (weighted mean score 1.260), ‘care of new born calves’ (weighted mean score 1.167), ‘preparing and storage of dung cakes’ (weighted mean score 1.093), ‘prepare feed (chaat)’ (weighted mean score 1.080), ‘preparing milk products’ (weighted mean score 1.047) and ‘cow dung collection’ (weighted mean score 1.027) with rank order IV, V, VI, VII, VIII, IX, X, XI, XII, XIII and XIV respectively.

**Table.1** Descriptive statistics of the respondents n = 300

Sr. No.	Categories	Women (150)		Men (150)	
		Frequency	Percentage	Frequency	Percentage
<b>1.</b>	<b>Age Group</b>				
	25-36 years	31	20.67	26	17.33
	37-60 years	89	59.33	96	64.00
	Above 61 years	30	20.00	28	18.67
<b>2.</b>	<b>Educational status</b>				
	Illiterate	28	18.67	7	4.67
	Up to Primary	103	68.67	81	54.00
	Up to Secondary	19	12.67	47	31.33
	Senior Secondary	0	0.00	9	6.00
	Graduate	0	0.00	6	4.00
<b>3.</b>	<b>Animal strength</b>				
	2-4 Cattle	56	37.33	55	36.66
	5-7 Cattle	61	40.67	58	38.67
	Above 7	33	22.00	37	24.67
<b>4.</b>	<b>Milk production</b>				
	2-6 Litre	35	23.33	34	22.67
	7-20 Litre	82	54.67	72	48.00
	Above 20 Litre	33	22.00	44	29.33
<b>5.</b>	<b>Training participation</b>				
	Yes	91	60.67	137	91.33
	No	59	39.33	13	8.67
<b>6.</b>	<b>Mass media exposure</b>				
	Low (54-59)	51	34.00	27	18.00
	Medium (67-71)	79	52.67	40	26.67
	High (Above 72)	20	13.33	83	55.33

Extent of participation of rural men and women in dairy farming practices

**Table.2** Distribution of respondents according to their participation in dairy farming activities n = 300

S. No.	Activities	Women (n=150)						Men (n=150)					
		Always		Occasionally		Never		Always		Occasionally		Never	
		f	%	F	%	f	%	f	%	f	%	f	%
<b>A.</b>	<b>Feed related activities</b>												
<b>1</b>	Harvesting of green fodder	108	72.00	34	22.67	8	5.33	7	4.67	28	18.67	115	76.67
<b>2</b>	Chaffing fodder	141	94.00	8	5.33	1	0.67	3	2.00	43	28.67	104	69.33
<b>3</b>	Prepare feed (chaat)	143	95.33	7	4.67	-	-	-	-	12	8.00	138	92.00
<b>B.</b>	<b>Maintenance</b>												
<b>4</b>	Storage of fodder	62	41.33	69	46.00	19	12.67	133	88.67	17	11.33	-	-
<b>5</b>	Cleaning and bathing of animal	141	94.00	7	4.67	2	1.33	98	65.33	39	26.00	13	8.67
<b>6</b>	Offering water to animals	124	82.67	19	12.67	7	4.67	47	31.33	84	56.00	19	12.67
<b>C.</b>	<b>Dung Management</b>												
<b>7</b>	Cow dung collection	150	100.00	-	-	-	-	-	-	4	2.67	146	97.33
<b>8</b>	Preparing and storage of dung cakes	143	95.33	7	4.67	-	-	-	-	14	9.33	136	90.67
<b>D.</b>	<b>Milking and milk management</b>												
<b>9</b>	Milking of animal	148	98.67	2	1.33	-	-	5	3.33	29	19.33	116	77.33
<b>10</b>	Preparing milk products	146	97.33	4	2.67	-	-	-	-	7	4.67	143	95.33
<b>E.</b>	<b>Animal disease and management</b>												
<b>11</b>	Health care of animals	150	100.00	-	-	-	-	118	78.67	29	19.33	3	2.00
<b>12</b>	Care of sick animals	147	98.00	3	2.00	-	-	11	7.33	68	45.33	71	47.33
<b>13</b>	Care of new born calves	148	98.67	2	1.33	-	-	3	2.00	19	12.67	128	85.33
<b>F.</b>	<b>Marketing</b>												
<b>14</b>	Selling of milk	-	-	14	9.33	136	90.66	150	100.00	-	-	-	-
<b>15</b>	Keeping record of milk and money	-	-	6	4.00	144	96.00	150	100.00	-	-	-	-

\*\* Correlation is significant at the 0.01 level (r value = -0.097)



**Table.3** Ranking of respondents according to their participation in dairy farming activities

Sr. No.	Activities	Women (150)		Men (150)	
		Weighted Mean Score	Rank	Weighted Mean Score	Rank
<b>A. Feed related activities</b>					
1.	Harvesting of green fodder	2.667	IX	1.280	VIII
2.	Chaffing fodder	2.933	VI	1.327	VII
3.	Prepare feed (chaat)	2.953	V	1.080	XII
<b>B. Maintenance</b>					
4.	Storage of fodder	2.287	X	2.887	II
5.	Cleaning and bathing of animal	2.927	VII	2.567	IV
6.	Offering water to animals	2.780	VIII	2.187	V
<b>C. Dung Management</b>					
7.	Cow dung collection	3.000	I	1.027	XIV
8.	Preparing and storage of dung cakes	2.953	V	1.093	XI
<b>D. Milking and milk management</b>					
9.	Milking of animal	2.987	II	1.260	IX
10.	Preparing milk products	2.973	IV	1.047	XIII
<b>E. Animal disease and management</b>					
11.	Health care of animals	3.000	I	2.767	III
12.	Care of sick animal	2.980	III	1.600	VI
13.	Care of new born calves	2.987	II	1.167	X
<b>F. Marketing</b>					
14.	Selling of milk	1.047	XI	3.000	I
15.	Keeping record of milk and money	1.040	XII	3.000	I

**Table.4** Distribution of the respondents according to their overall participation in dairy farming activities n = 300

Sr. No.	Category	Mean Score	Women (n=150)		Men (n=150)	
			Frequency	Percentage	Frequency	Percentage
1	Low	Less than 26.95 MS	13	8.67	37	24.67
2	Medium	28-39 MS	59	39.33	81	54.00
3	High	More than 39.85 MS	78	52.00	32	21.33

Mean = 33.40; SD = 6.45

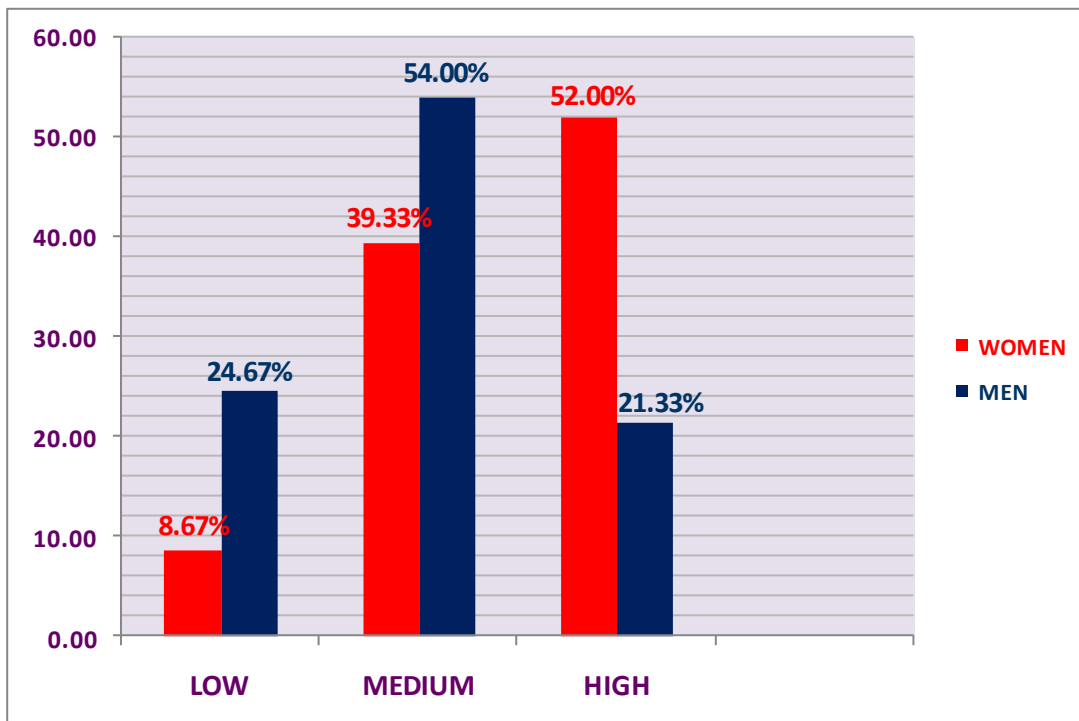
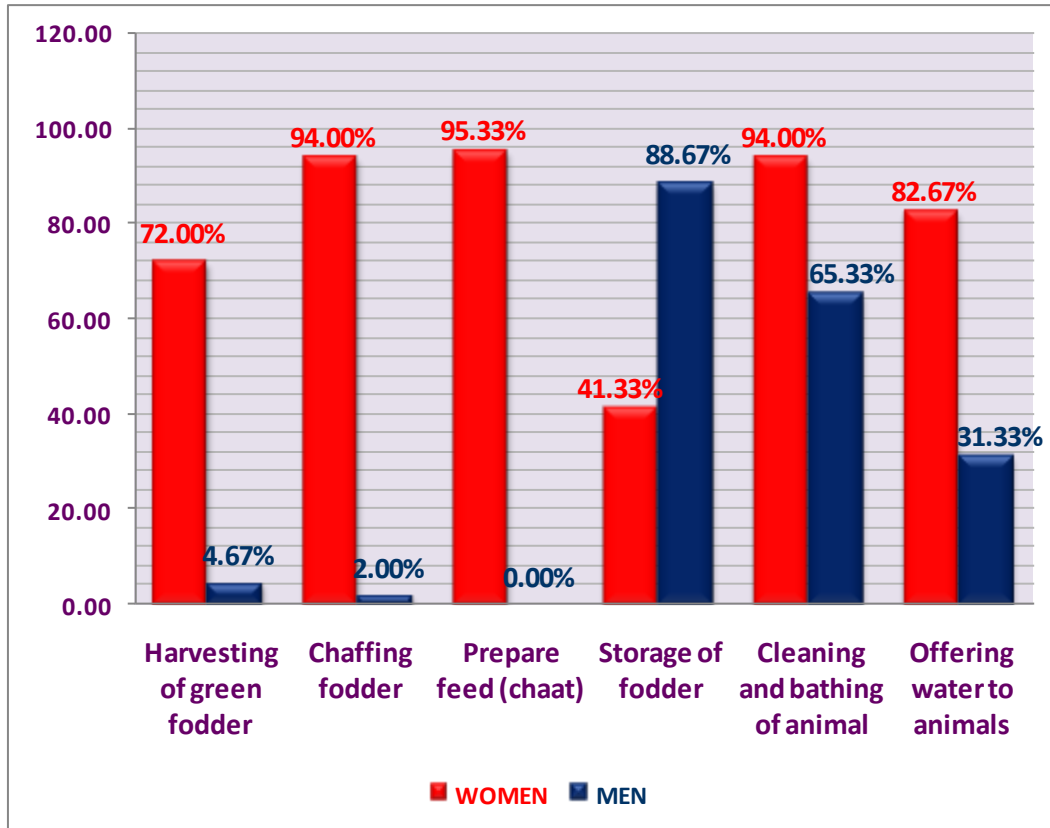




Table.4 shows that more than half of women (52.00%) had high participation in dairy farming activities whereas 21.33 per cent of men falling in this category. More than half of men (54.00%) and 39.33 per cent of women had medium level of participation. Only 8.67 per cent of women and 24.67 per cent of men had low participation.

So it can be concluded from above findings that women had high participation in dairy farming activities as compared to men. majority of women were mainly participated in various activities i.e. 'cow dung collection', 'health care of animals', 'milking of animal' 'care of new born calves', 'care of sick animal', 'preparing milk products', 'preparing and storage of dung cakes' and 'chaffing fodder' whereas men were mainly participated in various activities i.e. 'selling of milk', 'keeping record of milk and money', 'storage of fodder', 'health care of animals' 'cleaning and bathing of animal' and 'offering water to animals'. It is seen from the findings that although women had high participation in dairy farming activities but they had less participation in marketing related activities.

It may be due to lack of education and less exposure which should be improved. The result was supported by the findings of Chouhan (2016) Jahan and Khan (2016) and role of women in agriculture and its allied fields (2018).

Animal husbandry is a more stable source of livelihood compared to agriculture because it is less affected by rain failure than agriculture. Agriculture and Dairy State have always been inter-dependent. More than two-third of the workforce is women in agricultural production. Most of the livestock farming activities such as fodder collection, feed, water and health care, management, milking and processing at home level, value addition and marketing are done by women.

Apart from this, there is a lot of participation and contribution of women; there are also significant gender inequalities in Indian villages. Therefore, there is a need to fix gender injustice in the livestock sector. Efforts are needed to increase women's ability to communicate confidently and meet their strategic needs. Despite their considerable involvement and contribution, significant gender inequalities are also available in access to technology, loans, information, inputs and services, as there are probably inequalities in the ownership of productive assets including land and livestock.

Therefore it is important to use the gender lens in analyzing the social diversity to highlight the causes of inequality and to identify the barriers to women's productivity, livelihood and the reduction of the capacity of agriculture. In livestock system, it is easy to show how gender imbalances affect productivity and the possibilities of change are often more evident than in other sectors. Despite women playing key roles in small holder dairy farming, information on gender roles in dairy farming management, access and control over resources is lacking.

Women's contribution as dairy farmers often goes unrecognized due to the power structure and participation dynamics in financial decisions that are taken for the farm. Women participate in indoor feeding activities of animals by providing water, mixing rations and preparing feed for livestock. They even undertake animal health activities in indoor areas. While traditionally, it is in rural areas that these and other domestic activities are performed by female family members. It is seen from the findings that although women had high participation in dairy farming activities whereas men had medium participation in dairy farming activities but women had less participation in marketing related activities.

In order to improve women's direct participation in dairy cooperatives, KVKs, Veterinary University and Govt. animal husbandry department should plan and execute need based training programmers for them. As farm women contributes largely in dairy farming practices. There is a need to conduct a study to evaluate the impact of the dairy centers in improving the dairy farming in rural areas. Cross cultural research can be undertaken to find out the existing knowledge of farm women regarding dairy farming practices.

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