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### Participation of women of Gandhinagar district of Gujarat in dairy farming activities

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#### Abstract

India's economy is based on agriculture, animal husbandry and allied occupations. Dairy farming and dairy industry are important component of India's rural economy. Gujarat is one of the leading state in milk production. Majority of the work connected to dairy farming from fodder collection to looking after the livestock is all done by women. Although women are performing the majority of the work, yet their role in dairy farming and agriculture is grossly underestimated. Women perform all kinds of related work of looking after the livestock in addition to their domestic responsibilities but since they are rarely connected in marketing the produce; therefore, their work is invisible and not valued. Even the transfer of new technology in this sector is rarely transmitted to them because of the underestimation of their role. This study attempts to understand the role and contribution of women in the dairy farming in Gujarat. The study used purposive and random sampling methods to select 250 respondents who owned at least five dairy animals at the time of investigation.

**Keywords:** Women, participation, dairy farming activities, respondents

#### Introduction

Gujarat is one of India's leading milk-producing states, and dairy animals provide primary or secondary income for many families, especially landless and marginal farmers. These animals also serve as essential assets that provide financial security to their owners. Women are the backbone of animal husbandry activities, and dairy farming has played a significant role in socio-economic upliftment and employment generation, especially among landless small farmers and farm women groups. In Gujarat, dairy farming occupation is mostly handled by women of the family. Women Dairy farmers significantly contributed for animal husbandry related operations. It was thought that participation of women dairy farmers might be influenced by their individual characteristics, availability of time and other aspects. It was therefore decided to determine the nature and extent of participation of dairy farm women in animal husbandry occupation.

#### Materials and Methods

The study was conducted in Gandhinagar district, Gujarat,

during the year 2022-23. The district is comprised of four talukas: Gandhinagar, Mansa, Dehgam, and Kalol, all of which were purposively selected. Five villages from each taluka were also purposively selected based on higher milk production. A total of 250 women dairy farmers were proportionately selected using random sampling from the total households in each village. The criteria for selecting respondents were that they should own at least five dairy animals. Statements on the work related to different aspects of livestock management and animal husbandry occupation such as general aspects, feeding, breeding, management and milking and preparing milk products related aspects were prepared in consultation with the specialists and were included in the schedule. Various characteristics of women dairy farmers were measured using a well-structured interview schedule. Data were collected through personal interviews and analyzed using statistical tools such as percentages, mean scores, standard deviations and coefficients of correlation.

#### Results and Discussion

**Table 1:** Distribution of the rural women on the basis of their participation in dairy farming

Sr. No.	Particulars	Regularly	Sometimes	Never
<b>Selection of Mich Animals</b>				
1.	Type of milch animal	180 (72.00)	50 (20.00)	20 (08.00)
2.	Selection of Breed	139 (55.60)	83 (33.20)	28 (11.20)
<b>Feeding of Milch Animals</b>				
1.	Taking animals for grazing	119 (47.60)	61 (24.40)	70 (28.00)
2.	Fodder collection & chaffing the fodder	211 (84.40)	29 (11.60)	10 (04.00)
3.	Mixing green fodder with roughage	185 (74.00)	47 (18.80)	18 (07.20)
4.	Feeding the animals	230 (92.00)	12 (04.80)	08 (03.20)
5.	Storage of feeds and fodder	180 (72.00)	40 (16.00)	30 (12.00)

6.	Watering the animals	235 (94.00)	05 (02.00)	10 (04.00)
<b>Management of Milch Animals</b>				
1.	Construction of animal sheds	49 (19.60)	42 (16.80)	159 (63.60)
2.	Cleaning of animal sheds	242 (96.80)	00 (00.00)	08 (03.20)
3.	Washing & grooming of animals	198 (79.20)	42 (16.80)	10 (04.00)
4.	Milking	238 (95.20)	03 (01.20)	09 (03.60)
5.	Disposal of cow dung	227 (90.80)	10 (40.00)	13 (05.20)
6.	Maintaining farm & dairy records	61 (24.40)	99 (39.60)	90 (36.00)
<b>Breeding of Milch Animals</b>				
1.	Taking animals for Artificial Insemination	126 (50.40)	46 (18.40)	78 (31.20)
2.	Taking animals for natural service	44 (17.60)	32 (12.80)	174 (69.60)
3.	Taking animals for pregnancy diagnosis	160 (64.00)	42 (16.20)	48 (19.20)
4.	Arranging materials during parturition	181 (72.40)	21 (08.40)	48 (19.20)
5.	Calling veterinarian during difficulty in parturition	191 (76.40)	30 (12.00)	29 (11.60)
<b>Health Care of Milch Animals</b>				
1.	Care of sick animals	231 (92.40)	05 (02.00)	14 (05.60)
2.	Care of pregnant animals	239 (95.60)	02 (00.80)	09 (03.60)
3.	Taking animals for treatment	221 (88.40)	10 (04.00)	19 (07.60)
4.	Taking animals for vaccination	208 (83.20)	18 (07.20)	24 (09.60)
<b>Processing and Marketing of Milk</b>				
1.	Processing of livestock products	120 (48.00)	40 (16.00)	90 (36.00)
2.	Sale of milk and milk products	211 (84.40)	12 (04.80)	27 (10.80)
3.	Sale & Purchase of animals	46 (18.40)	91 (36.40)	113 (45.20)
4.	Purchase of feed and fodder	33 (13.20)	159 (63.60)	58 (23.20)
<b>Miscellaneous Activities</b>				
1.	Getting loan/credit from bank/cooperative	100 (40.00)	60 (24.00)	90 (36.00)
2.	Record maintenance	93 (37.20)	61 (24.40)	96 (38.40)

**Participation of Women in Selection of Milch Animals**

It can be observed from the data presented in table 1 that almost majority (92.00%) of the respondents and more than four fifth (88.80%) of the women dairy farmers participated in deciding type of milch animals and selection of breed either regularly or sometimes, whereas only 08.00 and 11.20 percent of them did not participate in deciding the type of animal and selection of breed.

This finding is similar to the findings of Rathod *et al.* (2011) [8], Upadhyay and Desai (2011) [12], Kathiriya *et al.* (2013) [13], Patel *et al.* (2016) [7] and Kabir *et al.* (2019) [2].

**Participation of women in feeding of milch animals**

The data from the table 1 reveals that majority of the women dairy farmers regularly participated in watering the animals (94.00%), feeding the animals (92.00%), fodder collection and chaffing the fodder (84.40%), mixing green fodder with roughage (74.00%), storage of feeds and fodder (72.00%). However, regular participation of women dairy farmers in taking animals for grazing was low (47.60%). This clearly showed that women dairy farmers largely participated in feeding activities of dairy animals. It was observed that in the area under study the work regarding dairy farming was largely done by female members of the family. The women stayed at home most of the time might be the probable reason for this result.

Parallel findings were also observed by Kaur *et al.* (2019) [5] and Manisha and Satpathy (2022) [6].

**Participation of women in management of milch animals**

The data presented in table 1 reveals that majority of the women dairy farmers regularly participated in management activities of dairy animals i.e. cleaning of animal shed (96.80%), milking of animals (95.20%), disposal of cow dung (90.80%) and washing and grooming of animals

(79.20%). Least participation was observed in maintaining farm and dairy records (24.40%) and construction of animal sheds (19.60%).

It was further noticed that majority of the women dairy farmers did not participate in maintaining farm and dairy records and construction of animal sheds. This clearly indicated that due to lack of knowledge of maintenance of farm record and requirement of more physical labour in construction of shed led to less involvement in these activities by women dairy farmers. This finding is similar to the findings of Rathod *et al.* (2011) [8], Upadhyay and Desai (2011) [12] and Hiremath *et al.* (2019) [1].

**Participation of women in breeding of milch animals**

It can be seen from table 1 that half of the women dairy farmers regularly participated in taking animals for artificial insemination (50.40%), taking animals for pregnancy diagnosis (64.00%), arranging materials during parturition (72.40%) and calling veterinarian during difficulty in parturition (76.40%). The data further indicated that more than four fifth (82.40%) of the women dairy farmers did not participate or participated sometimes in taking animals for natural service. From above findings it can be concluded that majority of the women dairy farmers regularly did activities pertaining to breeding of milch animals except in case of natural service. In Gandhinagar district the facility for artificial insemination is available at every milk co-operative society and veterinary dispensary. Hence, they availed the facility. Only few animals conceived through natural service and the responsibility for taking animals for natural service was performed by male members of the family might be the possible reason behind this finding. Similar results were also observed by Kathiriya *et al.* (2013) [3] and Saiful *et al.* (2019) [10].

**Participation of women in health care of milch animals**

It is apparent from the table 1 that majority of the women dairy farmers regularly participated in care of sick animals (92.40%), care of pregnant animals (95.60%), taking animals for treatment (88.40%) and taking animals for vaccination (83.20%). The result indicated that majority of the women dairy farmers participated regularly in health care of animals. The probable reason might be the availability of veterinary health care services in areas under report.

This finding is similar to the findings of Kathiriya *et al.* (2013) [3] and Sharma *et al.* (2019) [11].

**Participation of women in processing and marketing of milk**

Table 1 indicates that 84.40% of the women dairy farmers were regularly involved in sale of milk and milk products while, 48.00 percent of women dairy farmers performed milk processing activities like ghee making and butter preparation. Less participation was observed in sale and purchase of animals (18.40%) and purchase of feed and fodder (13.20%).

The results indicated that participation of women in processing and marketing activities was not much appreciated. Less participation of the women dairy farmers was observed in milk processing and making milk products like ghee, butter, khoa etc. The milk was supplied to milk collection centers of Uttam Dairy/Doodhsagar Dairy or Madhur Dairy. The women felt that preparation of milk products added to their existing labour. They also perceived that more time and effort was required for processing of milk and hence, only few women took up processing only on a small scale. They produced mainly milk products like ghee, butter and Khoa only for their household consumption.

The similar findings were observed by Kaur (2015) [5] and Rubi *et al.* (2022) [9].

**Participation of women in miscellaneous activities**

Majority of the women dairy farmers in the study area were not aware about importance of maintaining record and hence, it was observed that only 37.20% of the women dairy farmers maintained records in a small book or in a piece of paper. While, 40.00% of the respondents availed loan or credit from nearby bank or cooperative society. Similar findings were observed by researchers Rathod *et al.* (2011) [8] and Kaur (2015) [5].

**Participation index of women dairy farmers in different aspects of dairy farming**

In the present study, efforts were made to determine whether participation of the women dairy farmers differed in different activities of dairy farming. For this purpose, participation index of the women dairy farmers in different

aspects of dairy farming was worked out. The data in this regard are given in table 2.

**Table 2:** Participation index of the women in different aspects of dairy farming activities

Sr. No.	Dairy Farming Activities	Participation Index
1	Selection	77.10
2	Feeding	83.80
3	Management	74.20
4	Breeding	63.00
5	Health care	91.65
6	Processing and marketing	56.10
7	Miscellaneous	50.70
Overall Participation Index		72.74

It can be observed from the data presented in table 2 that the women dairy farmers had an overall participation in dairy farming to the extent of 72.74 percent. However, the women dairy farmers had largest participation in health care aspects (91.65%) followed by feeding (83.80%), selection (77.10%), management (74.20%), breeding (63.00%) and processing and marketing (56.10%). Least participation (50.70%) was observed in miscellaneous aspects of dairy farming.

**Overall participation of women dairy farmers in dairy farming:**

In the present study an attempt was also made to categorize the participation of women dairy farmers on the basis of mean and standard deviation. The data in this regard are presented in table 3.

**Table 3:** Distribution of the women according to their level of participation in dairy farming n=250

Sr. No.	Participation	Frequency	Percentage
1	Low (<29.35)	37	14.80
2	Medium (29.35 to 55.02)	179	71.60
3	High (>55.02)	34	13.60
Total		250	100

Mean = 42.19

S.D. 12.83

The data presented in table 3 indicates that 71.60% of the respondents were found with medium participation, whereas 14.80% respondents were found with low participation and 13.60% of respondents had high participation in the dairy farming occupation.

Based on above result, it can be concluded that majority of the respondents were found with regular participation. The probable reason could be that majority of the respondents were educated up to secondary and higher level in the study area and they showed medium information source utilization. This definitely influenced their participation level. Similar findings were observed by Kaur *et al.* (2019) [5].

### Conclusion

Women dairy farmers handle most of the critical jobs and are considered to be the main actors in small scale farming. Though women play a significant role in dairy farming their control over livestock and its products is very minimal. The income from dairy animals does not remain in the hands of women and neither does the decision regarding sale and purchase. There is an urgent need to develop technologies which will help the respondents carry out the activities with ease since they are relatively unpleasing, back breaking, monotonous and involve drudgery, physical exertion which ultimately affects their physical and psychological well-being. Women dairy farmers have to be motivated to acquire more scientific knowledge for increasing the livestock production through various extension techniques.

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