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Constraints perceived by dairy farmers in Anantapuramu district of Andhra Pradesh

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Abstract
The present study was carried out in three mandals of Anantapur district to assess the challenges being faced by dairy farmers with the help of pretested semi-structured questionnaire. Data were collected from 180 dairy farmers in 3 mandals through personal interview of respondents. Most of the respondents selected for the study were illitrates (42.78%) of middle age (64.44%) having Marginal farm holding size (47.22%) with medium family size (71.11%) small herd size (63.89%) and high social involvement (86.11%), mainly dependent on agriculture followed by dairy (63.89%). The study revealed that lack of green fodder round the year (69.44%) was the main constraint followed by non-remunerative price for milk (67.22%), lack of knowledge on balanced ration (64.44%). Underfeeding due to limited financial sources (33.33%), Lack of own capital (30.56%), Lack of credit supply (26.67%) are major financial constraints faced by the dairy farmers. A few farmers in the study area identified lack of availability of insemination on time (13.33%), low conception rate through AI (12.78%) as major constraints. The study suggests measures such as Facilitating market linkages for farmers, imparting knowledge on cultivation and conservation of fodder crops for round the year supply and Creating awareness about scientific dairy management practices with a focus on nutrition, breeding and health care for sustainable development of dairy sector as a whole.

Introduction
Dairy farming, an essential component of the agricultural industry and most significant aspect of the rural Indian population social and economic lives. Dairy animals act as a consistent source of economic income by providing nutrient-rich food products, draught power, dung as organic fertilizer and domestic fire, hides and skins (Chinnadurai *et al*., 2018) [3]. With the growing demand for cattle products in the future, and the depletion and scarcity of the natural resources supporting agriculture, it will be especially crucial to boost dairy output in the upcoming years (Ranganekar, 2006) [12].
Farmers with limited resources, as well as those without access to land or capital, have a chance to improve their incomes and standard of living by raising animals. However, constraints faced by dairy farmers are preventing the sustainable growth of the sector. From economic pressures to environmental concerns, and from regulatory hurdles to technological advancements, the modern dairy farmer must navigate a myriad of constraints to sustain their operations and livelihoods. So, a dairy farmer must use scientific dairy husbandry techniques in order to improve the milk production from their animals (Srinivash and Ramesh, 2017) [16] By understanding and addressing these constraints, we aim to illuminate pathways for dairy farmers to thrive in an increasingly complex industry.

Materials and Methods
The study was conducted in 3 mandals in the Anantapuramu districts of Andhra Pradesh. A pretested semi-structured questionnaire in precise language was employed for collecting data through interview and face to face discussion with the dairy farmers duly avoiding ambiguous, dichotomous and non-variant items for proper interpretation, as followed by Ashokbabu *et al.* (2022) [2].

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The respondents were interviewed one at a time. Before collecting the data, objectives of the study were lucidly explained and careful attempt was made to develop rapport with them. While selecting respondents, due care was taken to ensure that they were evenly distributed in the village and truly represented as per the objective of the study.

The questions in the schedule about constraints faced by the dairy farmers were presented to them in precise language to ensure that they perceived the questions correctly. Answers obtained from farmers were recorded instantly along with personal observations.

Table 1: Features of study district

S. No	Parameters	Anantapuramu
1	Area	10,205 km^2
2	Latitude	14.6819^0 N
	Longitude	77.6006^0 E
3	Average rainfall	552 mm
4	Average temperature	27.5º C
	Population	46.03 lakhs
5	Literacy	64.28%
6	Soil type	Red sandy soils, colluvial soils & black soils
7	Animal husbandry	Sheep, Goat, Cattle & buffalo, Poultry
8	Fodder grown	Para grass, fodder sorghum, super napier
9	Crops grown	Ground nut, maize, cotton, paddy, red gram.

The information obtained from the individual respondents for all the statements was recorded and tabulated as per the objectives concerned and simple tabular analysis was followed and the number of livestock owners indicating the same constraint was counted in frequency and then converted into percentage for analysing the data.

Results and Discussion
From the Table 2 and figure 1 it is clear that the majority of farmers (64.44%) belonged to the middle age group (36-50 years) followed by old age group (>50 years) with 21.11 percent and young age group (< 35 years) with 14.44 percent, this may be due to the middle-aged dairy farmers may feel constrained in their ability to change careers, contributing to their continued presence in the profession. The above findings were in accordance with the results of Usha *et al* (2024) [19] and Patel *et al.* (2013) [8].
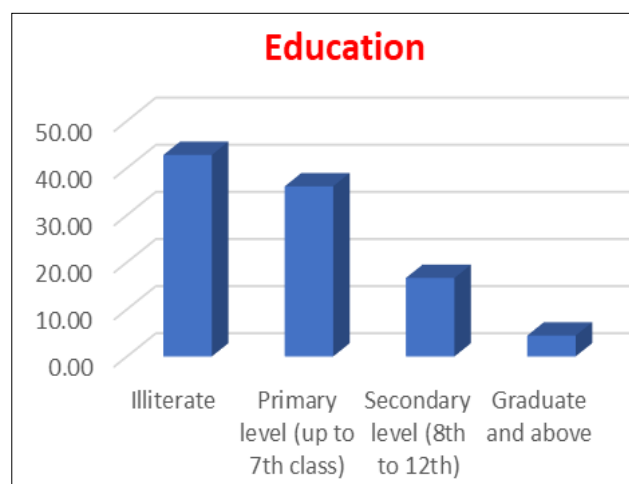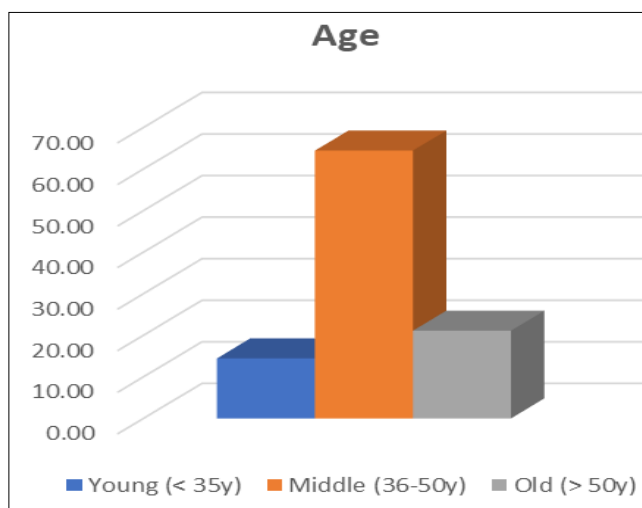

Fig 2: Distribution of respondents based on education

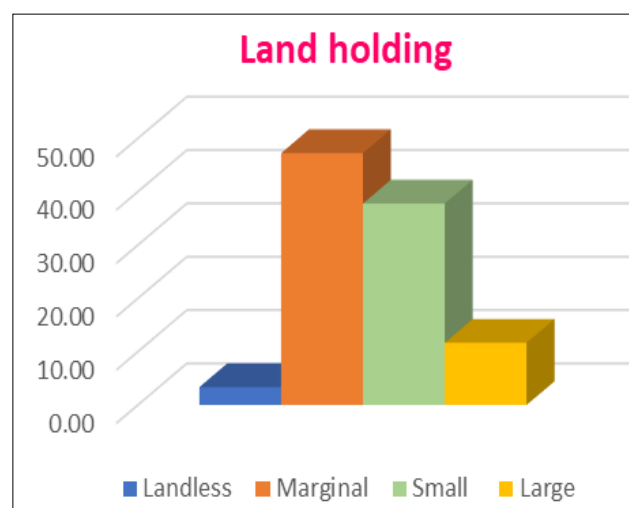**Fig 1:** Distribution of respondents based on age

Fig 3: Distribution of respondents based on land holding

A cursory look at Table 2 and Figure 2 revealed that 42.78% of the farmers are illiterates and the rest belonging to Primary School (36.11%), Secondary school (16.67%), Graduates and above (4.44%) categories. Education plays a key role in adoption of improved management practices in livelihood enterprises.

Since the majority of respondents were illiterates, they are unable to consider the economics of agriculture and related sectors and are unwilling to accept new technologies. The outcomes contradicted the conclusions made by Madhuri *et al.*, 2020 [7].

Table 2: Economic profile of dairy farmers in three mandals of Anantapur district

Parameters		Narpala		Gooty		BKS		Overall	
		F	P	F	P	F	P	F	P
Age	Young (< 35y)	12	20.00	8	13.33	6.00	10.00	26.00	14.44
	Middle (36-50y)	41	68.33	34	56.67	41.00	68.33	116.00	64.44
	Old (> 50y)	7	11.67	18	30.00	13.00	21.67	38.00	21.11
Education	Illiterate	27	45.00	18	30.00	32.00	53.33	77.00	42.78
	Primary level (up to 7th class)	20	33.33	27	45.00	18.00	30.00	65.00	36.11
	Secondary level (8th to 12th)	11	18.33	9	15.00	10.00	16.67	30.00	16.67
	Graduate and above	2	3.33	6	10.00	0.00	0.00	8.00	4.44
Social status	SC	6	10.00	9	15.00	15.00	25.00	30.00	16.67
	ST	6	10.00	21	35.00	7.00	11.67	34.00	18.89
	BC	38	63.33	17	28.33	18.00	30.00	73.00	40.56
	others	10	16.67	13	21.67	20.00	33.33	43.00	23.89
Family type	Joint	2	3.33	8	13.33	3.00	5.00	13.00	7.22
	Nuclear	58	96.67	52	86.67	57.00	95.00	167.00	92.78
Family size	Small (1-3)	11	18.33	21	35.00	11.00	18.33	43.00	23.89
	Medium (4-6)	47	78.33	34	56.67	47.00	78.33	128.00	71.11
	Large (> 6)	2	3.33	5	8.33	2.00	3.33	9.00	5.00
Social involvement	Present	51	85.00	58	96.67	46.00	76.67	155.00	86.11
	Absent	9	15.00	2	3.33	14.00	23.33	25.00	13.89
Land holding	Landless	4	6.67	2	3.33	0.00	0.00	6.00	3.33
	Marginal (2.5 acres dry and 1.25 wet)	50	83.33	16	26.67	19.00	31.67	85.00	47.22
	Small (2.5-5dry and 2.5 wet)	4	6.67	31	51.67	33.00	55.00	68.00	37.78
	Large (> 5acres dry)	2	3.33	11	18.33	8.00	13.33	21.00	11.67
Farming system	Only dairy	0	0.00	0	0.00	0.00	0.00	0.00	0.00
	Agriculture + Dairy	38	63.33	44	73.33	33.00	55.00	115.00	63.89
	Agriculture + Dairy + Other livestock	22	36.67	16	26.67	27.00	45.00	65.00	36.11
Herd size	Small (1-5)	40	66.67	31	51.67	44.00	73.33	115.00	63.89
	Medium (6-10)	20	33.33	25	41.67	16.00	26.67	61.00	33.89
	Large (>10)	0	0.00	4	6.67	0.00	0.00	4.00	2.22

Majority (76.11%) of dairy farm owners belonged to backward caste indicated that backward caste and other caste group were actively involved in dairying as a source of income and employment for their livelihood. From the results it could be inferred that majority of farmers (86.11%) tend to become members in social organizations *Viz.*, co-operative agricultural credit societies, Rythu clubs, Self-help groups. Regardless of their level of interest in the organisation, their primary goal was to get profit from it. The results validated the conclusions of Tomar *et al.* (2016) [18].

It was evident from Table 2. & Figure 3 most of the respondents had marginal farm holders (47.22%), followed by small farmers (37.78%) category. Whereas, 11.67% belonged to large farmers and 3.33% does not have land. Majority of the farmers had marginal holdings followed by small holdings. This study is similar to Wetal *et al.*, 2023 [20]. Maybe the cause was that individual farmers received a smaller land area as a result of the division of joint families. That's why people cultivate food crops on their whole land rather than fodder. Therefore, it is necessary to focus on marginal and small farmers

The initial outlay for establishing a large-scale dairy farm is substantial. Due to the mutually beneficial nature of agriculture and dairying, most farmers see Dairying as a secondary source of income and continue to run their dairy farms on a modest scale in order to make a consistent living. Dairy producers typically kept cows for their own consumption; any extra milk was sold to milk vendors. That's why most of the farmers (63.89%) follow agriculture and dairying followed by agriculture and other livestock (36.11%) such as poultry, sheep and goat (Fig 4 & Table 2).

According to Prashad *et al.,* 2019 [9], the majority of respondents (53.33%) had modest herd sizes (up to 3 milch animals). This is similar to present study where most of the farmers (63.89%) have 1-5 animals followed by medium herd size (33.89%). Only 2.22% of dairy farmers have large herd size (Fig 5 & Table 2).
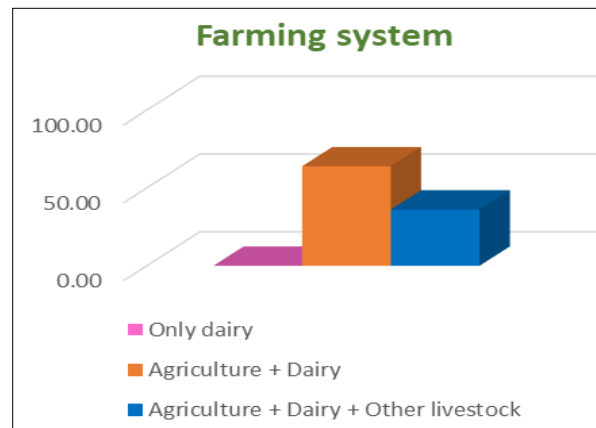

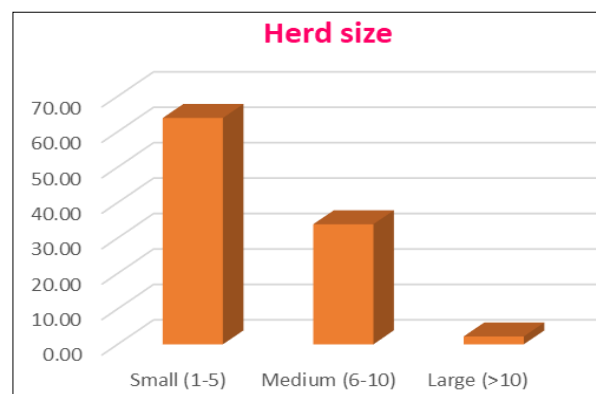**Fig 4:** Distribution of respondents based on farming system

Fig 5: Distribution of respondents based on herd size

The constraints faced by dairy farmers in three mandals of Anantapuramu district are shown in order of their importance (Table 3 and Fig. 7). Lack of green fodder round the year was the main constraint similar to Rathod *et al*. (2012) [14] and Adhikari *et al*. (2020) [1]. This might be due to poor water resources available in the study area. This can be overcome by imparting knowledge on cultivation and conservation of fodder crops during the flush seasons for round the year supply. Non-remunerative price for milk (69.17%) was second major constraint as reported by the farmers. The same constraint was reported by Rajpoot *et al.* (2018) [10] and Ashok *et al*. (2022) [1]. Non-remunerative milk prices might be due to the high cost of milk production and poor marketing facilities. By facilitating proper market linkages and creating awareness on value added milk products, the farmer may overcome this constraint. Lack of knowledge on balanced ration (64.44%) is the third major constraint for dairy farmers
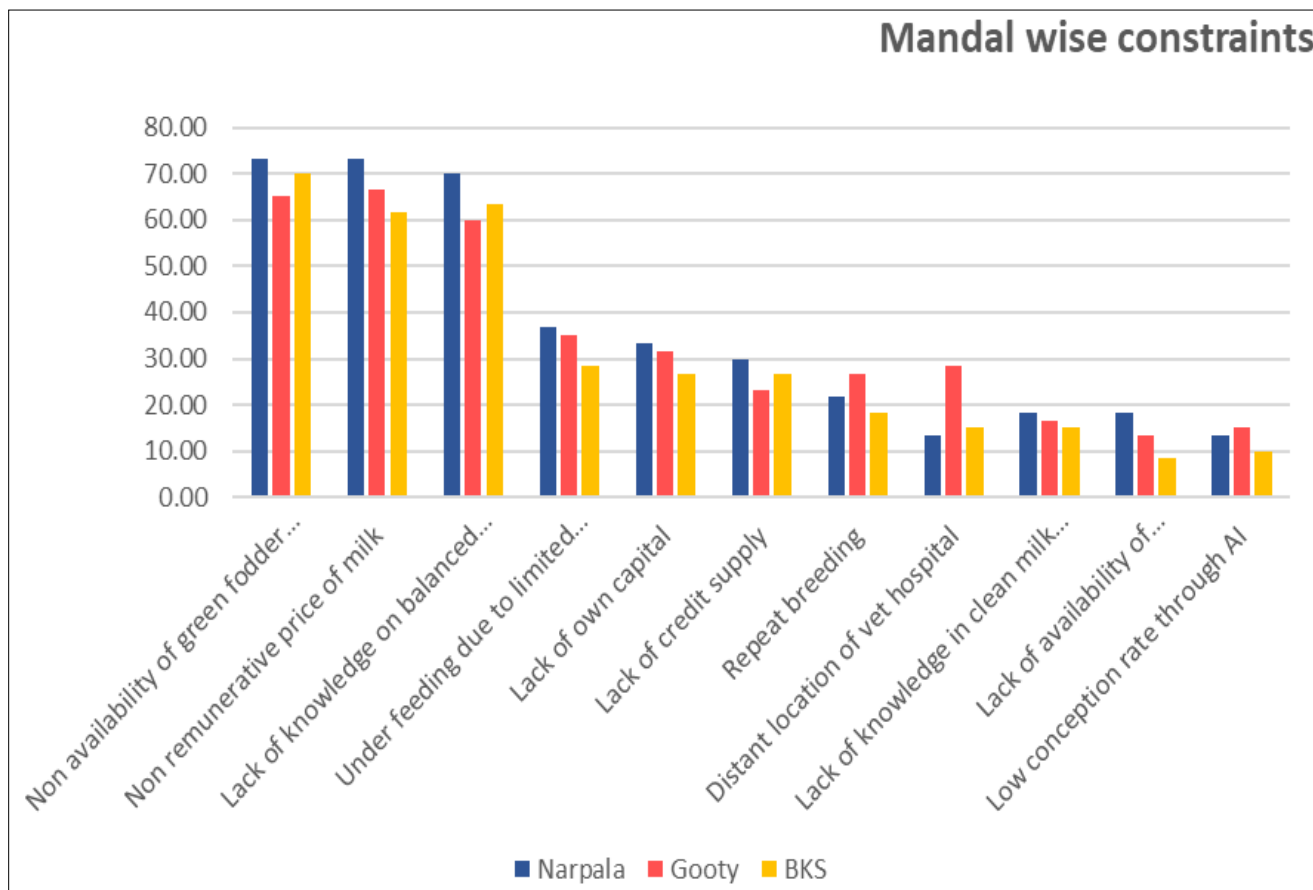

Fig 7: Response of farmers towards constraints in dairy farming in three mandals of Anantapuramu district

Table 3: Response of farmers towards constraints in dairy farming in three mandals of Anantapuramu district

S. No	Constraint	Narpala N=60 (%)	Gutti N=60 (%)	BKS N=60(%)	overall N=180 (%)	Rank
1	Lack of own capital	33.33	31.67	26.67	30.56	V
2	Lack of credit supply	30.00	23.33	26.67	26.67	VI
3	Under feeding due to limited financial sources	36.67	35.00	28.33	33.33	IV
4	Lack of knowledge on balanced ration	70.00	60.00	63.33	64.44	III
5	Non-availability of green fodder round the year	73.33	65.00	70.00	69.44	I
6	Low conception rate through AI	13.33	15.00	10.00	12.78	XI
7	Lack of availability of insemination on time	18.33	13.33	8.33	13.33	X
8	Repeat breeding	21.67	26.67	18.33	22.22	VII
9	Non-remunerative price of milk	73.33	66.67	61.67	67.22	II
10	Lack of knowledge in clean milk production	18.33	16.67	15.00	16.67	IX
11	Distant location of vet hospital	13.33	28.33	15.00	18.89	VIII

Underfeeding due to limited financial sources (33.33%), Lack of own capital (30.56%), Lack of credit supply (26.67%) are major financial constraints similar to Rao *et al.* (2013) [13] who told that lack of own capital and lack of credit facility were main constraints. When farmers wish to establish a dairy business, they constantly face challenges related to expensive capital and building costs. This can be resolved by long-term loans and government subsidies. The study also revealed Repeat breeding (22.22%) is one of the constraints.

Ramkumar *et al.* (2004) [11], Tailor *et al.* (2012) [17] and Dhindsa *et al.* (2014) [4] who reported that inadequate knowledge about repeat breeding was the major constraint faced by the dairy farmers in Pondicherry, Udaipur and Punjab respectively. Repeat breeding is mainly due to poor feeding and lack of knowledge about the right time of servicing the animals after calving and importance of pregnancy diagnosis.
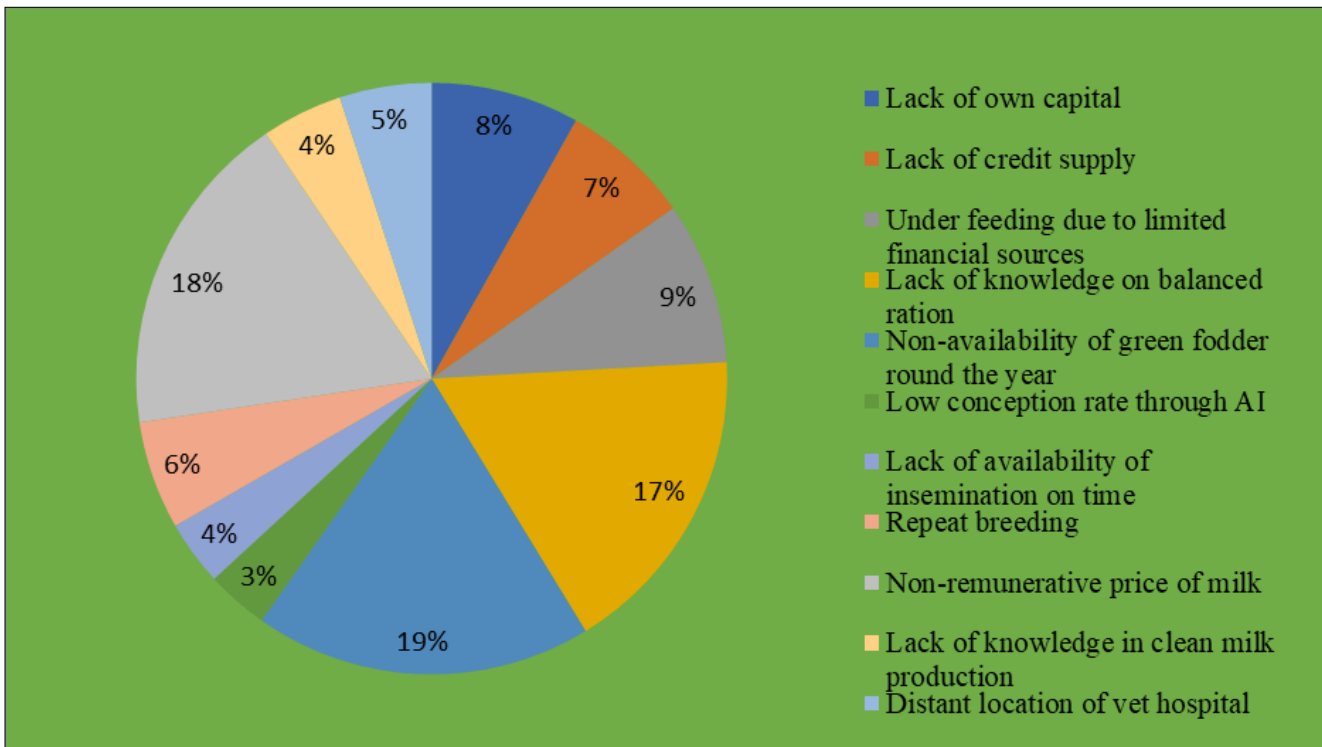
Fig 7: Constraints faced by dairy farmers

Distant location of veterinary hospital (18.33%) is also a one of the constraint similar to the study of Ashokbabu *et al.* (2022) [1]. A few farmers in the study area identified lack of knowledge on clean milk production (16.67%), The present findings are in accordance with the results reported by Ashokbabu *et al.* (2022) [1] and Sabapara (2014) [15]. Low knowledge in clean milk production might be due to low awareness levels of farmers in that area. Lack of availability of insemination on time (13.33%) low conception rate through AI (12.78%) are the least experienced constraints. The animal husbandry department must conduct long-term capacity building trainings in order to educate dairy farmers on good dairy husbandry practices, particularly with regard to nutrition, breeding, and medical care. Additionally, as recommended by Hussain *et al.* (2020) [6] and Harikrishna (2014) [5], visiting contemporary, organised dairy farms may help the farmers in maximising animal production so that they receive fair pricing for the milk they produce.

Conclusion
It is concluded that majority of the dairy farmers have nuclear families, literates, belonged to backward caste, middle aged with medium income. If proper technical guidance regarding dairy farming from scientists and financial support from government is provided, it will make a positive impact on the farmers to improve knowledge and skills thereby uplifting their socio-economic status. In the study area, Major constraints in brief are lack of knowledge on scientific feeding activities and financial sources. The top six constrains faced by farmers in this area are non-availability of fodder year around, non-remunerative price of milk, Lack of knowledge on balanced ration, under feeding due to limited financial sources, Lack of own capital and Lack of credit supply respectively. It is necessary that the government should intervene in conducting extensive skill oriented long-term training programmes on scientific management and awareness on available state and central schemes. So that dairy farmer is able to use scientific dairy husbandry

techniques and governmental schemes in order to improve the milk production and get financial support.

Recommendation
- The process of providing of extension services need to be strengthened at the local level governances so that dairy owners can get access to information on ways of conserving the fodder and making and feeding of balanced ration to the animals.
- Need of awareness among the farmers or dairy entrepreneurs regarding new schemes given by the state and central governments like National livestock mission (NLM), PM employment generation programme (PMEGP), Breed multiplication farm scheme etc as their main constrains was financial sources
- Providing long term skill training programmes (Capacity building) for farmers in area of value addition of milk as they are facing the non-remunerative price of milk. Milk based value addition has lot market in this area as it is very near to Bengaluru city.
- Frequently conducting the infertility treatment camps should be organized at village level, periodical visit to organised dairy farms may help farmers, rural youth and farm women for adopting new technologies in their own farm.

Conflict of Interest
Not available

Financial Support
Not available

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