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Constraints perceived by dairy farmers in central plain zone of Punjab

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Abstract

The present study was conducted in central plain zone (CPZ) of Punjab by personally interviewing 150 dairy farmers by using well structured interview schedule. Garrett's ranking technique was used to prioritize the different sets of constraints in terms of their mean score. The study revealed that 'lack of knowledge about schemes of A.H department' (61.26) and 'absence of milk testing facilities in study area' (56.84) were major infrastructural constraints. Under technical constraints; 'lack of knowledge about value addition of milk and milk by-products' (60.58) and 'lack knowledge about clean milk production' (56.60) were the major ones. 'Low economic gain from dairy enterprise' (58.64) and 'lack of credit facilities' (54.63) were main economic constraints. Under marketing constraints; 'lack of knowledge about marketing strategies' (56.72) and 'difficulty in marketing of milk and milk products' (56.62) were major ones. 'Lack of knowledge about various mobile applications related to scientific dairy farming practices' (56.17) and 'very few information of livestock management daily newspaper/daily samachar' (55.85) were the major communicational constraints. Hence, there is a need to remove these constraints on priority basis so that farmers can run their dairy venture based entrepreneurial activities in a smooth and sustainable manner.

Keywords: Agro-climatic zones, constraints, dairy, farmers, practice, Punjab

Introduction

Livestock act as an essential component of the socio-economic development of rural India as it provides livelihood security, draught power, manure, energy and employment to the various stakeholders involved directly or indirectly in the livestock value chain. Among all the livestock based enterprises dairying is the most prehistoric occupation established in the rural areas of our country. Dairy sector contributes significantly in generating employment opportunities and providing income to small and marginal farmers. In recent years, the dairy sector has emerged as a most significant source of rural employment and income in the country. Dairy development has important role not only in generating employment and augmenting livelihood opportunities of rural people but also improving the food security of the people. India ranks first in milk production with a production of 187.70 million tones milk during the year 2018-19^[1]. As far as Punjab is concerned, the average milk yield in increased by 50.14 per cent between years 2012 and 2019. The state now has the highest per capita milk availability in the country at 1,181 gram per day against the national average of 374 gram. In Punjab, central plain zone (CPZ) has maximum number of dairy animals^[2].

In spite of the remarkable growth in milk production during the past few years, productivity of dairy animals continues to remain very low and dairy farmers encountered various infrastructural, technical, economic, marketing and communicational constraints which are a major concern hampering further development of dairy based enterprises. Proper identification and resolving of major constraints faced by dairy farmers, the production & productivity of dairy animal can be enhanced in a sustainable manner. Hence, the present study was carried out with an objective to explore various constraints perceived by dairy farmers in access & management of good dairy farming practices (GDFPs) in central plain zone (CPZ).

Materials and Methods

The present study was conducted in central plain zone (CPZ) of Punjab from which, Ludhiana & Sangrur district were selected purposively based on the maximum number of dairy animals, well developed infrastructure for dairy development and availability of potential dairy farmers. From each district 3 blocks were selected and out of 2 selected districts total 6 blocks were identified randomly and from each block cluster of 4 villages were selected.

Potential dairy farmers in these village clusters were identified with help of Veterinary officer's, extension officers and key informants & representative sample of 25 farmers was randomly selected from four villages in each block giving a total sample size of 150 respondents for the study (Table 1).

Table 1: List of selected villages and respondents

Districts	Blocks	Villages	Respondents (n=150)
Ludhiana	Ludhiana East	<ul style="list-style-type: none"> • Kumkalan • Partapgarh • Panjeta • Ballewal 	25
	Ludhiana West	<ul style="list-style-type: none"> • Ranguwal • Latala • Lohgarh • Dhoorkot 	25
	Samrala	<ul style="list-style-type: none"> • Salodi • Rajewal • Adhiana • Akalgarh 	25
Sangrur	Malerkotla	<ul style="list-style-type: none"> • Mohali Kalan • BirJmangarh • Kanganwal • Badla 	25
	Sangrur	<ul style="list-style-type: none"> • Bhuraj • Bharo • Bahadurpur • Gujra 	25
	Sunam	<ul style="list-style-type: none"> • Dirba, • Gobindgarh • Jejiyan • Chhanjali • Sheron 	25

To analyze various constraints faced by dairy farmers, a structured interview schedule was developed under sub-heads namely; infrastructural, technical, economic marketing and communicational constraints. The data were collected by face to face interview using pre-tested structured schedule. Garrett's ranking technique was used to prioritize the different sets of constraints in terms of their mean score.

According to Garrett's ranking technique, the respondents were asked to enumerate and assign ranks to different constraints, which were used for prioritization of constraints.

Table 2: Infrastructural constraints perceived by dairy farmers (n=150)

Sr. No.	Infrastructural constraints	Mean score	Rank
1	Non availability of advanced dairy equipment's in the research locale	51.22	VI
2.	Lack of space for modern dairy farm	52.63	IV
3.	Facility of veterinary services	44.98	IX
4	Lack of training institute in the research locale	51.76	V
5	Cost of veterinary medicine is very high	50.82	VII
6	Absence of milk testing facilities in study area	56.84	II
7	Lack of water resources at farm for routine operations	50.21	VIII
8	Lack of storage and preservation facility of milk and milk by- products	56.47	III
9	Lack of knowledge about schemes of A.H department	61.26	I

The other constraints such as 'lack of space for modern dairy farm' (mean score: 52.63), 'lack of training institute in the research locale' (mean score: 51.76), 'non- availability of advanced dairy equipment's in the research locale' (mean score: 51.22), 'cost of veterinary medicine is very high' (mean score: 50.82), 'lack of water resources at farm for routine operations' (mean score: 50.21) and 'facility of veterinary services' (Mean score: 44.98) were ranked 4th, 5th, 6th, 7th, 8th and 9th, respectively. Similar findings have been

Order of merit as given by the respondents were converted into rank, by using the following formula:

$$\text{Percent position} = \frac{100 (R_{ij} - 0.50)}{(N_j)}$$

Where,

R_{ij} = Rank given for ith problems by jth individual.

N_j = number of problems ranked by the jth individual.

The percent position of each rank was then converted into scores, by referring to the table, as given by Garrett [3]. The scores of individual respondents for a particular problem were added and divided by the total number of respondents. The mean scores for all the constraints were arranged in descending order and thus, rank were assigned to prioritize the constraints.

Results and Discussion

The literary meaning of 'constraints' is the quality or state of being checked, restricted or compelled to avoid or perform some action. So, constraints were all those factors, which hinder the process of adoption and effective implementation of the good dairy farming practices (GDFPs) as perceived by the dairy farmers. The important constraints as faced by the respondents were ranked and discussed under the categories of infrastructural, technical, economic, marketing and communicational constraints. These constraints were calculated and ranked through Garret's ranking technique.

a) Infrastructural Constraints

The data presented in Table 2 and Figure 1, revealed that under infrastructural constraints 'lack of knowledge about schemes of A.H department' (mean score: 61.26), 'absence of milk testing facilities in study area' (mean score: 56.84) and 'lack of storage and preservation facility of milk and milk by products' (mean score: 56.47) were perceived as more severe constraints and ranked 1st, 2nd and 3rd. In an earlier study, the other researchers reported that majority of the respondents were not aware of schemes of A.H. department and lack of storage facility of milk and milk by products [4] and [5], which are in line with present findings.

observed in Pondichery [6]. So, it can be concluded that lack of knowledge about schemes of A.H department, absence of milk testing facilities in study area and lack of training institute in the research locale were highlighted as major constraints. Therefore there is a dire need to provide the basic infrastructural facilities such as; availability of training institute, dairy equipment's facilities, milk testing facilities, milk storage and preservation facilities, disease diagnostic facilities to the dairy farmers in their area so that they can run

their dairy enterprise in a smooth and sustainable manner.

b) Technical constraints

The results presented in the Table 3 and Figure 2, revealed that, ‘lack of knowledge about value addition of milk and milk by-products’ (mean score: 60.58) was perceived as most important constraint and ranked first. ‘Lack knowledge about clean milk production’ (mean score: 56.60); and ‘Lack of knowledge about scientific housing practices’ (mean score: 55.94); were ranked second and third most important constraints faced by dairy farmers. In high rain coastal region of India, it was also reported that non remunerative price of milk and lack of preservation facilities for milk was main constraints in milking practices. Farmers having inadequate of knowledge about importance of clean milk production and utility of value added dairy products [7].

The other constraints includes, ‘lack knowledge about deworming and vaccination schedule’ (mean score: 54.82); ‘lack of regular technical guidance facilities from experts’(mean score: 52.45), ‘unavailability of Artificial Insemination (A.I) centres in the study area’ (mean score: 52.36), ‘lack of knowledge about feeding of balanced ration to the animals’ (mean score: 51.34), and ‘lack of technical ‘know how’ about management of dairy units’ (mean score: 47.86), were ranked as 4th, 5th, 6th, 7th and 8th respectively, as perceived by dairy farmers among various technical constraints. These constraints may be attributed because lack of proper technical guidance well in time, low mass media exposure and low extension contact by the respondents, which is in agreement with the findings of earlier researchers in Almora district of hilly Utranchal [8] and in Chhattisgarh Plains [9].

Table 3: Technical Constraints perceived by dairy farmers (n=150)

Sr. No.	Technical Constraints	Mean score	Rank
1	Lack of technical ‘know how’ about management of dairy units	47.86	VIII
2	Lack of regular technical guidance facilities from experts	52.45	V
3	Lack of knowledge about feeding of balanced ration to the animals	51.34	VII
4	Lack of knowledge about scientific housing practices	55.94	III
5	Lack knowledge about clean milk production	56.60	II
6	Lack knowledge about deworming and vaccination schedule	54.82	IV
7	Lack of knowledge about value addition of milk and milk by-products	60.58	I
8	Unavailability of Artificial Insemination (A.I) centres in the study area	52.36	VI

These constraints may be sorted out by organizing animal welfare camps, awareness camps, regular technical guidance about scientific breeding, feeding, healthcare and

management practices through telephone helpline, radio, T.V. and various other social media tools.

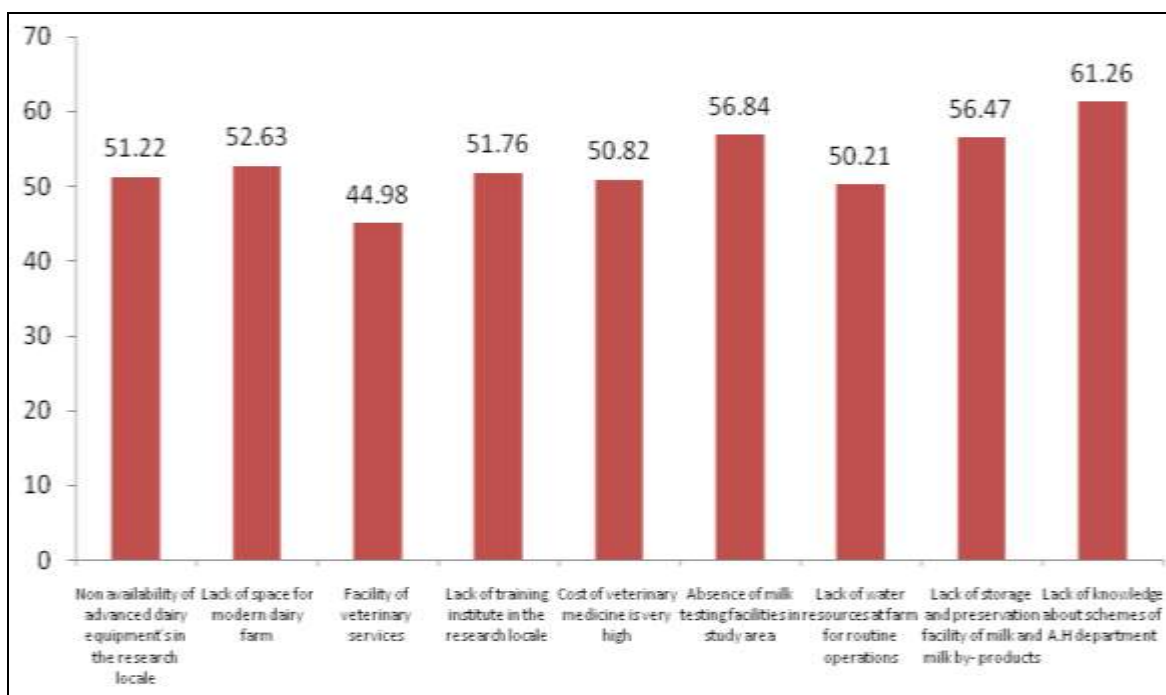


Fig 1: Infrastructural constraints faced by dairy farmers

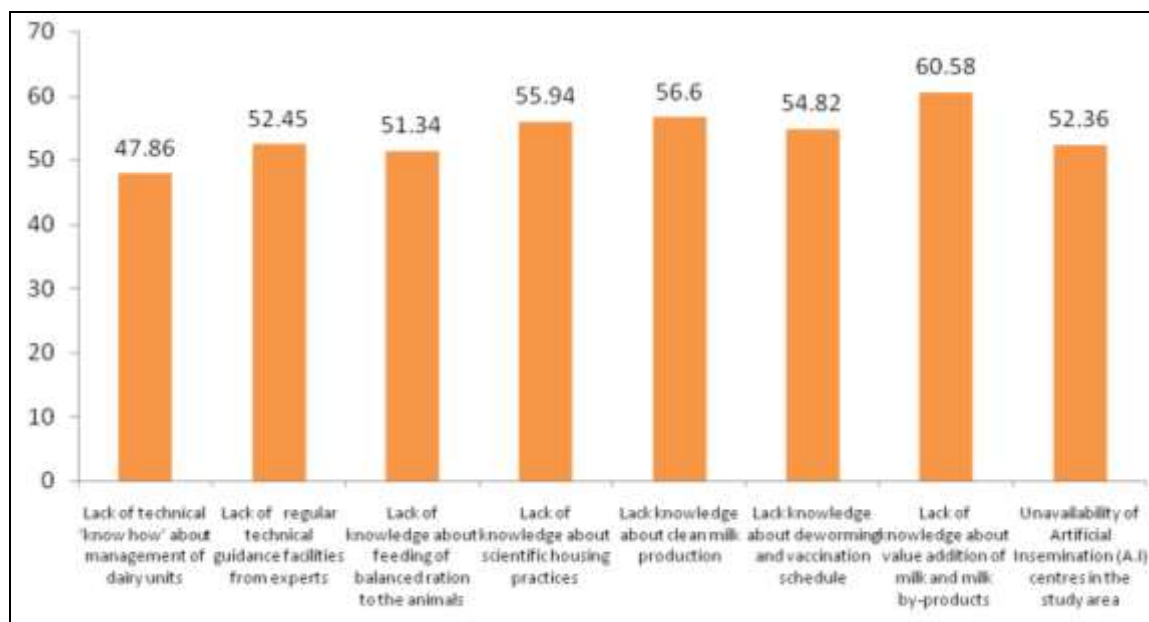


Fig 2: Technical constraints perceived by dairy farmers

c) Economic constraints

The data presented in Table 4 and Figure 3 revealed that under economic constraints “low economic gain from dairy enterprise” (mean score: 58.64) was perceived as most severe

constraint. This might be due to high cost of animals, feed and fodder etc., resulting in increase in the production cost and low economic gain from dairying^[10].

Table 4: Economic constraints perceived by dairy farmers (n=150)

Sr. No.	Economic Constraints	Mean score	Rank
1	Lack of credit facilities	54.63	II
2	High cost land	50.44	VII
3	High cost of feed and fodder	51.87	V
4	High cost elite breeds for dairy animals	51.45	VI
5	Low economic gain from dairy enterprise	58.64	I
6	High cost of transportation	53.41	IV
7	Limited subsidies by government for starting of dairy enterprise	54.39	III

The other economic constraints such as ‘lack of credit facilities’ (mean score: 54.63) and ‘limited subsidies by government for starting of dairy enterprise’ (mean score: 54.39) were always an issue for farmers when they want to start a dairy enterprise were perceived as 2nd and 3rd most important constraints. ‘High cost of transportation’ (mean score: 53.41), ‘high cost of feed and fodder’ (mean score: 51.87), ‘high cost elite breeds for dairy animals’ (mean score: 51.45) and ‘high cost land’ (mean score: 50.44) were ranked as 4th, 5th, 6th and 7th respectively on the basis of their perceived severity. In Doda District, Jammu, high cost of feed and mineral mixture was perceived as most serious constraint followed by high cost of fodder and non availability of

pasture^[11].

d) Marketing constraints

Market plays an important role in diffusion and adoption of new technology. From Table 5 and Figure 4, it is indicated that ‘lack of knowledge about marketing strategies’ (mean score: 56.72) was perceived as most serious constraint by the dairy farmers. Hence it is suggested that there should be improved marketing system, so that milk producers will not face difficulty in marketing of milk and milk products. Earlier study has also indicated that for making dairy farming more remunerative, the price of milk should be standardized^[12].

Table 5: Marketing constraints perceived by dairy farmers (n=150)

Sr. No.	Marketing Constraints	Mean score	Rank
1	Difficulty in marketing of milk and milk products	56.62	II
2	Lack of knowledge about marketing strategies	56.72	I
3	Less knowledge about marketing channel of milk and milk products	55.02	III
4	Interferences of middle man in supply chain management	53.63	V
5	Distress sale due to perishable nature of milk and milk products	54.45	IV

The other constraints were ‘difficulty in marketing of milk and milk products’ (mean score: 56.62); and ‘less knowledge about marketing channel of milk and milk products’ (mean score: 55.02) has been found to be the second and third most serious constraints followed by ‘distress sale due to perishable

nature of milk and milk products’ (mean score: 54.45) and ‘interferences of middle man in supply chain management’ (mean score: 53.63) were ranked 4th and 5th most important constraints, respectively on the basis of their perceived severity.

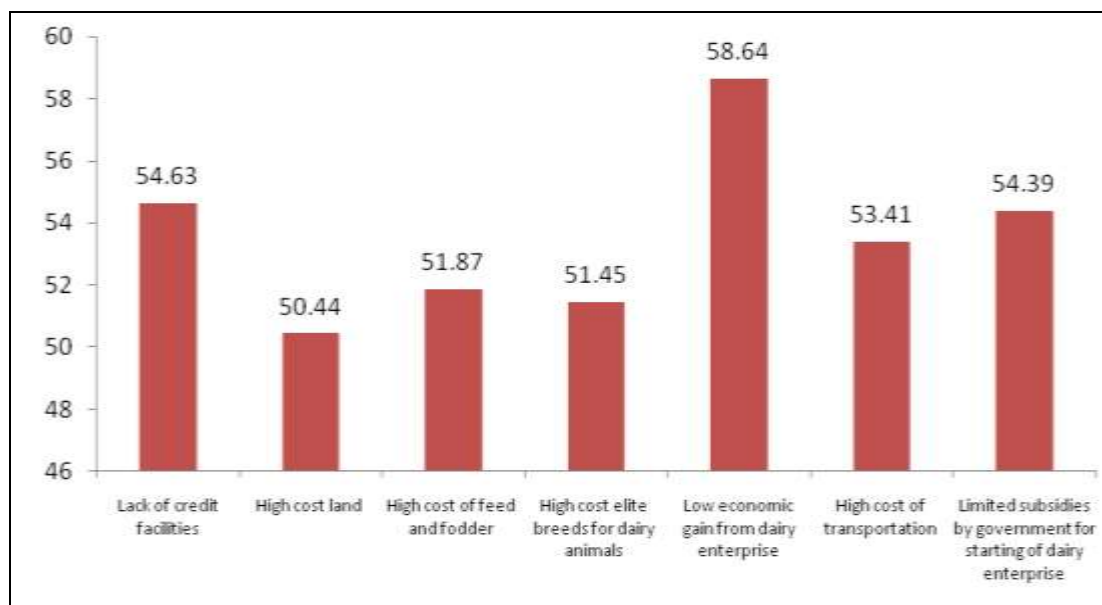


Fig 3: Economic constraints perceived by dairy farmers

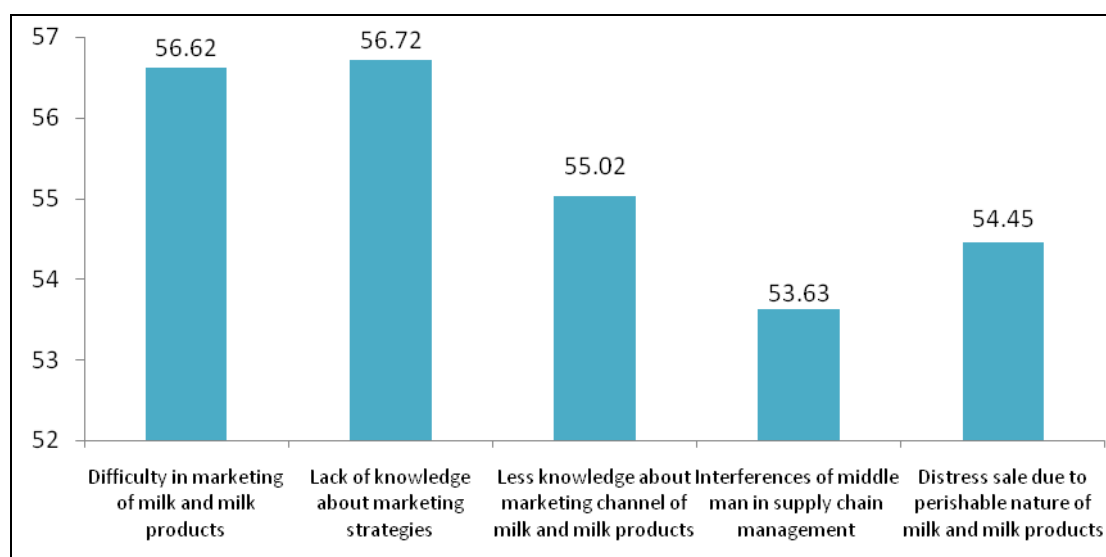


Fig 4: Marketing constraints perceived by dairy farmers

Communicational constraints

The data presented in Table 6 and Figure 5 indicated that among communicational constraints 'lack of knowledge about various mobile applications related to scientific dairy farming practices' (mean score: 56.17) was perceived as most serious constraint faced by the dairy farmers.

The other communicational constraints were 'very few information of livestock management daily newspaper/daily samachar' (mean score: 55.85); 'ambulatory service facility is not available in the area' (mean score: 53.02); 'unavailability of real time information about government scheme/programs at field level' (mean score: 51.98); 'unavailability of livestock related literature' (mean score: 51.00), 'poor market information system' (mean score: 48.52), 'difficulty in approach to veterinary services' (mean score: 46.91), 'non-cooperative nature of progressive dairy farmers' (mean score:

45.78) and 'internet network problem in the study area' (mean score: 41.85) were faced as second, third, fourth, fifth, sixth, seventh, eighth and ninth important constraints, respectively by the dairy farmers. In Bundi district of Rajasthan, lack of knowledge, poor extension support, poor credit support, lack of proper communication system, non-availability of desired technology, complexity of practices, high cost of inputs, and lack of conviction were the major constraints perceived by farmers in adoption of improved dairy farming practices.^[13] However, In Hingna and Kalmeshwar Tahsils of Nagpur district of Vidarbha region of Maharashtra state, more than three fourth of dairy farmers expressed poor rapport to extension agencies and less information about Government schemes pertaining to dairy enterprise as communication constraints^[14].

Table 6: Communicational constraints perceived by dairy farmers (n=150)

Sr. No.	Communicational Constraints	Mean score	Rank
1	Poor market information system	48.52	VI
2	Non-cooperative nature of progressive dairy farmers	45.78	VIII
3	Difficulty in approach to veterinary services	46.91	VII

4	Unavailability of real time information about government scheme/programs at field level	51.98	IV
5	Ambulatory service facility is not available in the area	53.02	III
6	Unavailability of livestock related literature	51.00	V
7	Very few information of livestock management daily newspaper/daily samachar	55.85	II
8	Lack of knowledge about various mobile applications related to scientific dairy farming practices	56.17	I
9	Internet network problem in the study area	41.85	IX

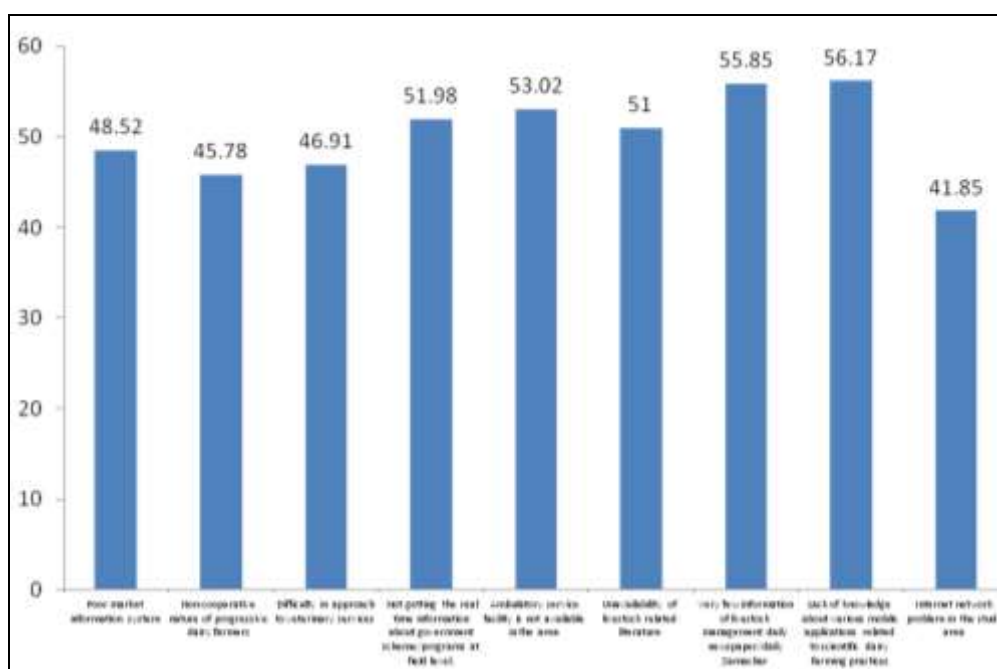


Fig 5: Communication constraints perceived by dairy farmers

Conclusions

The productivity enhancement of dairy animals can be made by adoption of good dairy farming practices and also by adopting the systemic approach to generate empirical data on constraints associated with the access and management of good dairy farming practices. The important constraints perceived in dairy farming practices mostly related to economy of dairy farmer. The important constraints as perceived by the respondents were; lack of knowledge about schemes of A.H department, lack of knowledge about value addition of milk and milk by-products, lack knowledge about clean milk production, low economic gain from dairy enterprise, lack of credit facilities, lack of knowledge about marketing strategies, difficulty in marketing of milk and milk products, lack of knowledge about various mobile applications related to scientific dairy farming practices and ambulatory service facility was not available in the area were the major constraints as encountered by dairy farmers.

Therefore, it could be concluded from the above study that for sustainability of dairy farming enterprise there is a need to establish proper training institutes in the rural areas for capacity building and refreshing their knowledge base of dairy farmers on regular basis and need to provide basic input and infrastructural facilities, disease diagnostic facilities and milk storage and preservation facilities and marketing linkages to the dairy farmers in their locale so that they can run their dairy based entrepreneurial activities in a sustainable manner. In nutshell, constraints should be resolved immediately for the betterment and improving the socio-economic status of dairy farmers.

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