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Research Article

CONSTRAINTS ANALYSIS IN ADOPTION OF IMPROVED DAIRY MANAGEMENT PRACTICES IN VIDARBHA REGION OF MAHARASHTRA STATE

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Abstract- A field survey was undertaken in Akola and Washim districts of Vidarbha region of Maharashtra state for present study. Total 140 farmers were selected from two blocks namely Akola and Washim from above districts as respondents by using random sampling method. The constraints have been operationally defined as the problems encountered by the respondent with regards to the adoption of improved dairy management practices. Constraints are, therefore, the factors that limit the farmer's development process and hence these cannot be over looked. Constraints found during presenting were structured and further classified into different categories viz. infrastructural constraints, economic constraints, marketing constraints, technological constraints, socio-psychological constraints and communicational constraints. Every identified constraint with farmers has been measured on the three point continuum according to the degree of severity i.e. high severity, medium severity and low severity. Majority of dairy farmers expressed the major constraints as lack of improved equipments with mean constraints severity score (MCSS) 1.59 and which ranked first, high charges of emergency veterinary services with MCSS 1.51, lack of technical guidance was major technical constraints mentioned by the farmers with MCSS 1.46 etc. While overall constraints severity index shows that maximum number of the respondents had medium (33.34 to 66.66%) category level in adoption of improved dairy management practices. At last suggestions were obtained from dairy farmer to overcome the constraints faced in adopting improve dairy management practices indicated that large majority of the respondents were suggested that medicine should be available at low cost followed by the milk price should be increased.

Keywords- Constraints, Adoption, Dairy, Improved, Practices, Severity, Livestock.

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Introduction

A dairy practice is one of the most important activities of the rural population of our country. The importance of the dairy farming, as a subsidiary industry to agriculture, has stressed by the National Commission on Agriculture. Dairy farming, next to agriculture, not only provides continuous income and improves livelihood standards of family, but also supplements the income and generates employment to a large number of the rural poor. India owns the largest livestock population in the world, accounting for nearly 56.70 per cent of the world Buffalo population and 16.00 per cent of the cattle population. India was the largest producer of milk and the production increased by 81.00 per cent over 2000-01 to 146.30 million tons during 2014-15 and aims to achieve the National Vision of producing 155 million tons by 2016-17. Per capita daily availability of milk has also been increasing over the years and reached 322 grams per day during 2014-15. During 2013-14, the value of output of livestock was at Rs. 4, 06,035 corers accounted for about 3.9 per cent of the total GDP.

According to "19th Livestock Census-2012", Bovine population in Maharashtra has declined by about 5.00 per cent to 2.1 crore as against 2.2 crore in 2007. While crossbreds cattle increased by 19.00 per cent, local Cows and Buffaloes have shown 8 to 9 per cent decline. However, the indigenous cattle and Buffalo milch population declined by 5 to 7 per cent between 2007 and 2012, while there has been an impressive growth of 26.00 per cent in crossbred milch animals [1].

To prevent the suicide of farmer in the villages, dairy farming is the one of the avenues, which adds the additional income to the family. Farmer is having land to cultivate fodder, shelter for animals and women family member to do the additional work related to dairy. Adoption of improved dairy management practices involves a process in which awareness is created, attitudes are changed and favorable conditions for adoption are provided. How recent is the knowledge of a dairy producer about various dairy management practices such as breeding, feeding and management of milch animals determines largely the success or failure of dairy farming [3].

Materials and Methods

The study was conducted in Akola and Washim block of these districts of Vidarbha region of Maharashtra state. Seven villages from each selected blocks were randomly selected with lottery method by preparing the list of villages where the good number of dairy farmers will available and who were having five or more milch animal. Thus fourteen villages were selected from two blocks namely Akola and Washim from the Akola and Washim districts of Maharashtra state. The data were collected through pretested interview schedule from the respondents. Mean Constraint Severity Score (MCSS) was applied to determine the constraints in adoption of improved dairy management practices. Every identified constraint with farmers has been measured on the three point continuum according to the degree of severity i.e. high severity, medium severity and low severity at all with a score of two, one and zero, respectively. On the basis of Obtained severity score for each

constraint, Mean Constraint Severity Score (MCSS) was obtained with the following formula.

$$MCSS = \frac{\text{Obtained severity score}}{\text{Total number of respondents}}$$

On the basis of MCSS each identified constraint will ranked. The respondents will be categorized on the basis of overall constraint severity index which will obtain with the following formula.

$$\text{Constraint severity index} = \frac{\text{Obtained score for all identified constraint}}{\text{Maximum obtainable score}} \times 100$$

The respondents will be categorized according to obtained constraint severity index with equal interval method.

Results and Discussion

The following six practices of improved dairy management have been considered for finding out the constraints for improved dairy management.

In infrastructural Constraints [Table-1] indicated that, the major constraints faced by the respondents were lack of improved equipment with mean constraints severity score 1.59 and which ranked first, unavailability of emergency veterinary services and lack of training facilities were rank II and rank III with MCSS 1.41 and 1.34 respectively. The unavailability of cattle feed and fodder seed on credit had MCSS 1.26 and rank IV, high incidence of diseases among livestock was given as rank V with MCSS 1.22 and unavailability of green fodder throughout the year, low average milk yield of the milk animals, Infrequent visit of veterinary staff are ranked as VI with MCSS 1.19. Some other constraints which are not more severe they are Irregular and inadequate supply of cattle feed, lack of grazing pasture land which ranks VII with MCSS 1.15. The unavailability of vaccines, occasional availability of semen at the Artificial Insemination centre are the less severe in infrastructural constraints ranked VIII, IX (MCSS 1.03, 0.97).

Table-1 *Infrastructural Constraints in adoption of improved dairy management practices*

Sl. No.	Constraints	MCSS	Ranking of constraints
1.	Lack of improved equipment	1.59	I
2.	Unavailability of emergency veterinary services	1.41	II
3.	Lack of training facilities	1.34	III
4.	Unavailability of cattle feed and fodder seed on credit	1.26	IV
5.	High incidence of diseases among livestock	1.22	V
6.	Unavailability of green fodder throughout the year	1.19	VI
7.	Low average milk yield of the milk animals	1.19	VI
8.	Infrequent visit of veterinary staff	1.19	VI
9.	Irregular and inadequate supply of cattle feed	1.15	VII
10.	Lack of grazing pasture land	1.15	VII
11.	Unavailability of vaccines	1.03	VIII
12.	Occasional availability of semen at the AI Centre	0.97	IX

Economic constraints in [Table-2] show that high charges of emergency veterinary services were the main constraint which ranked I with MCSS 1.51. The constraints like High cost of fodder seed, high cost of cross-bred cow, and high cost of veterinary medicines were also found in adoption having constraints rank II, III, and IV with MCSS 1.45, 1.41, 1.39 respectively. Low price of milk offered and high charges for cattle insurance are rank V, VI with MCSS 1.30, 1.17 were the economic constraints; whereas high cost of cattle feed and mineral mixture and low provision of loan in society or Government for purchasing cattle are ranked same VII with MCSS 1.16. At last high cost of labour and delay in payment of milk are less severe in economic constraints with rank VIII, IX (MCSS 0.96, 0.79) respectively.

[Table-3] shows that different marketing constraints in adoption of improved dairy management practices were the inability to market for value added products was rank I with MCSS 1.21, while less knowledge about marketing strategies rank II with MCSS 1.19. Low risk taking behavior and lack of time for market are other major constraints with MCSS 1.15, 0.73 and ranked as III, IV. And at last in marketing constraints irregular sell of milk is given as last rank V and MCSS 0.66 respectively.

Table-2 *Economic constraints in adoption of improved dairy management practices*

Sl. No.	Constraints	MCSS	Ranking of constraints
1.	High charges of emergency veterinary services	1.51	I
2.	High cost of fodder seed	1.45	II
3.	High cost of cross-bred cow	1.41	III
4.	High cost of veterinary medicines	1.39	IV
5.	Low price of milk offered	1.30	V
6.	High charges for cattle insurance	1.17	VI
7.	High cost of cattle feed and mineral mixture	1.16	VII
8.	Low provision of loan in society or Government for purchasing cattle	1.16	VII
9.	High cost of labour	0.96	VIII
10.	Delay in payment of milk	0.79	IX

Table-3 *Marketing constraints in adoption of improved dairy management practices*

Sl. No.	Constraints	MCSS	Ranking of constraints
1.	Inability to market for value added products	1.21	I
2.	Less knowledge about marketing strategies	1.19	II
3.	Low risk taking behaviour	1.15	III
4.	Lack of time for market	0.73	IV
5.	Irregular sell of milk	0.66	V

The data with regards to technical constraints in [Table-4] revealed that lack of technical guidance was major technical constraints mentioned by the farmers (MCSS-1.46, Rank-I), followed by unavailability of high genetic bull (MCSS 1.34, Rank-II), lack of knowledge about cheap and scientific housing of animal ranked III (MCSS 1.17), and lack of knowledge about animal diseases and health care ranked IV (MCSS 1.03) was analyzed. At last poor conception rate through artificial insemination ranked VI with MCSS 0.98 respectively.

Table-4 *Technical constraints in adoption of improved dairy management practices*

Sl. No.	Constraints	MCSS	Ranking of constraints
1.	Lack of technical guidance	1.46	I
2.	Unavailability of high genetic bull	1.34	II
3.	Lack of knowledge about cheap and scientific housing of animal	1.17	III
4.	Lack of knowledge about animal diseases and health care	1.03	IV
5.	Poor conception rate through artificial insemination	0.99	V
6.	Poor knowledge about feeding	0.98	VI

The socio-psychological constraints depicted in [Table-5] the main constraints in adoption were low socio-economical condition (Rank I, MCSS 1.29), low purchasing power (Rank II, MCSS 1.19) and milk of cross-bred cow has poor acceptability by family members (Rank III, MCSS 0.89) and lack of time due to busy in domestic/agricultural work is the last in socio-psychological constraints ranked as V and MCSS 0.71 respectively.

The communicational constraints in [Table-6] shows that Inadequate access to training programme (MCSS 1.44, Rank I), followed by Inadequate information about Government scheme pertaining to dairy enterprise (MCSS, 1.41 Rank-II), Poor rapport to extension agencies (0.98, Rank-III), and Low social mobility of rural women (0.85, Rank-IV) and poor transport and communicational facilities

ranked V with MCSS 0.62 were the important communicational constraints found in adoption of improved dairy management practices.

Table-5 *Socio-psychological constraints in adoption of improved dairy management practices*

Sl. No.	Constraints	MCSS	Ranking of constraints
1.	Low socio-economical condition	1.29	I
2.	Low purchasing power	1.19	II
3.	Milk of cross-bred cow has poor acceptability by family members	0.89	III
4.	Lack of co-operation and co-ordination among members	0.84	IV
5.	Lack of time due to busy in domestic/agricultural work	0.71	V

Table-6 *Communicational constraints in adoption of improved dairy management practices*

Sl. No.	Constraints	MCSS	Ranking of constraints
1.	Inadequate access to training programme	1.44	I
2.	Inadequate information about Government schemes pertaining to dairy enterprise	1.41	II
3.	Poor rapport to extension agencies	0.98	III
4.	Low social mobility of rural women	0.85	IV
5.	Poor transport and communicational facilities	0.62	V

The data mentioned in [Table-7] revealed that the majority of the respondents (85.71%) were observed in second category i.e. medium severity category followed by 12.86 per cent under high category and remaining 1.43 per cent farmers comes under last category as low constraints severity.

Table-7 *Distribution of respondents according to overall constraints severity index*

Sl. No.	Category	Respondents (n=140)	
		Frequency	Percentage
1.	Low (up to 33.33)	2	01.43
2.	Medium (33.34 to 66.66)	120	85.71
3.	High (above 66.66)	18	12.86
	Total	140	100.00

Suggestions

Suggestions by dairy farmers to overcome the constraints faced in adopting improve dairy management practices are as follows.

The data regarding suggestion given by the dairy farmers as respondents depicted in [Table-8] and indicated that large majority (88.57%) of the respondents were in the opinion that medicine should be available at low cost, whereas 82.14 per cent respondents suggested that the milk price should be increased and 65.71 and 60.00 per cent respondents suggested that number of veterinary hospital should be increased for better treatments of cattle and training should be given for better livestock management, respectively. The next important suggestions were availability of artificial insemination facilities and easy loan facilities should be provided by banks for purchasing of animals on subsidiary basis, given by about 50.71 and 47.86 per cent of the respondents respectively.

Similarly, 41.43 percent of the respondents suggested to established Cooperative society for selling the milk and milk products. The respondents who were suggested about that improved bulls should be provided by the government for breeding, animal fair should be organized at least once in a year to purchase and sell of the animals and medicine should be available at low cost were reported by 31.43, 16.43, and 10.00 per cent respondents respectively, While only 5.71 per cent suggested that green fodder and concentrate should be available throughout the year at low cost.

Conclusion

It can be concluded that the overall extent of constraints analysis in adoption of improved dairy management practices was found to be 85.71 per cent in the study area. Majority of dairy farmers of Akola and Washim districts had lack of improved equipment, high charges of emergency veterinary services and lack of technical guidance etc are the major constraints found in adoption of improved dairy management practices. Regarding suggestions most of the respondents were suggested that medicine should be available at low cost and the milk price should be increased to overcome the constraints faced in adopting improve dairy management practices. These constraints and suggestions may be helpful to policy makers for improving dairy practices.

Table-8 *Distribution of respondents according to their suggestions for adoption of improved dairy management practices*

Sl. No.	Suggestions	Respondents (n=140)	
		Frequency	Percentage
1.	Vaccination facilities should be provided by the government in proper time.	124	88.57
2.	Milk price should be increased.	115	82.14
3.	Number of veterinary hospital should be increased for better treatments of cattle.	92	65.71
4.	Training should be given for better livestock managements.	84	60.00
5.	A.I. facility should be available at proper time.	71	50.71
6.	Easy loan facilities should be provided by banks for purchasing of animals on subsidiary basis.	67	47.86
7.	Cooperative society should be established for selling the milk and milk products.	58	41.43
8.	Improved bulls should be provided by the government for breeding.	44	31.43
9.	Animal fair should be organized at least once in a year for purchase and sell of the animals.	23	16.43
10.	Medicine should be available at low cost.	14	10.00
11.	Green fodder and concentrate should be available throughout the year at low cost by Government agencies.	8	5.71

(Data are based on multiple responses)

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Abbreviations: MCSS: Mean constraints severity score
%: per cent.

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