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RESEARCH ARTICLE.....

Factors affecting constraints perception of women practising mixed dairy farming

RACHNA, GAUTAM, **ANIKA MALIK**, S. S. SANGWAN, KAMALDEEP **AND** RICHA KHIRBAT

ABSTRACT..... The success story of Indian milk production has been written primarily by millions of rural producers and perhaps the major share of credit goes to women dairy farmers. Women are major contributors in the agricultural economy, but face various constraints that limit them from achieving optimal livestock production and agricultural development. The study was conducted in Hisar district of Haryana state to document the constraints affecting the growth of mixed dairy farming systems. The respondents for the study comprised of 60 women engaged in mixed dairy farming. The constraints perceived by the respondents were divided into six main areas *viz.*, general, feeding, economic, management, health care and breeding. Management and feeding constraints were perceived as most serious. Constraints like, 'high cost of animal feeds and fodders' 'fragmentation of land holdings', 'high losses due to animal diseases' were rated as most serious by the respondents. On the other hand they were least bothered about constraints like 'non- availability of veterinary hospital in the village', 'vaccination facilities are not timely available', ' far away location of veterinary hospital is a problem', non- availability of veterinary surgeons' and 'lack of storage facility for dairy products'. Age, social participation, extension contact and mass media exposure were significantly and positively associated with constraint perception. Education, land holding, and risk orientation were negatively but insignificantly related to the constraint perception. Further studies in areas of market incentives and opportunities, diseases and animals, extension services and quality delivery, gender role and information seeking behaviour are advised.

KEY WORDS..... Mixed dairy farming system, Women, Constraints, Livestock, Dairying

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Author for Corresponding -

ANIKA MALIK
Department of Veterinary and Animal Husbandry Extension Education, College of Veterinary Sciences, Lala Lajput Rai University of Veterinary and Animal Sciences, HISAR (HARYANA) INDIA
Email: anikadhundwal@gmail.com

See end of the article for **Coopted authors'**

INTRODUCTION.....

Mixed dairy farming system involves millions of resource-poor farmers, for whom animal ownership ensures critical livelihood, sustainable farming, and economic stability. However, the expansion of small holder production system beyond a semi-subsistence level is constrained by a number of barriers including lack of competitiveness and risk factors. India is now the world's leading milk producer with annual production of about 97.1 million tonnes which is 14.9 per cent of world

(Anonymous, 2006). However, the demand of livestock products is expected to more than double by 2020 as compared to food grains whose demand is expected to rise by less than 50 per cent over the current levels (Paroda and Kumar, 2000). This enlarged demand for milk and milk products will certainly have implications for livestock production systems and for livestock producers in poor rural areas who are trying to adapt to the changing social, economical, market and trade circumstances (Rao *et al*., 2005).

Rural women comprise the most important productive work force in the economy of majority of the developing nations including India. Agriculture sector employs 4/5th of all economically active women in the country. Forty eight per cent of India's self-employed farmers are women. There are 75 million women engaged in dairying as against 15 million men (MoA, 2005). Infact, the success story of Indian milk production has been written primarily by millions of rural producers and perhaps the major share of credit goes to women dairy farmers. Various micro level studies have highlighted women's significant role in dairy farming (Jain and Verma, 1992; Singh *et al.*,1994; Patki *et al.*, 2000 and Singh *et al.*, 2005). It is estimated that 600 million poor livestock keepers in the world, around two-thirds are women and most live in rural areas (FAO, 2011 and Thornton *et al*., 2002). In Asian intensive livestock systems, more than three-quarters of livestock-related tasks (feeding, taking care of young and sick animals, milking, etc.) are the responsibility of women (Tipilda and Kristjanson, 2009). Similarly, the livestock industry in India is dominated by women who provide 55 per cent of employed livestock-farming labour and more than 77 per cent of the work involved in taking care of animals (RNCOS, 2006).

With the shrinking land holdings and increasing population base, the dairying is becoming increasingly important mainstay of the rural population in Haryana. Therefore, ascertaining their views regarding constraints affecting mixed dairy farming system is important to provide valuable insight and has the potential to provide critical inputs for the design and implementation of support programmes.

RESEARCH METHODS.....

The present study was conducted in Hisar district of Haryana. The district has a population of more than 17 lakhs with a density of 438 inhabitants per square kilometer. The sex ratio is on lower side with 871 females for every 1000 males and a literacy rate of 73.2 per cent (Anonymous, 2011). Further, the district has a large livestock population (796810), which is highest among all the 21 districts (Anonymous, 2007). The present study was conducted on 60 women respondents practicing mixed dairy farming randomly selected from four villages (*viz.*, Dabra, Mirkan, Shahpur and Dhobhi from Hisar district) of Haryana State.

The data was collected using a pre-structured interview schedule developed solely for this purpose and by holding personal interview with women respondents during the year 2011-12. Ten antecedent variables age, educational qualification, family type, lands holding (acres), herd size, social participation, extension contact, mass media exposure, economic motivation, risk orientation were selected and operationalized after a thorough review of available literature to find out socio economic profile of women dairy farmers. 'Constraint' in the present study was operationalized as the difficulties that are perceived by women respondents in practicing mixed dairy farming. A list of 66 constraints divided into six main areas *viz*., general, feeding, economic, management, health care and breeding was prepared in consultation with extension scientists, available literature, experts and dairy farmers. The opinion of the respondents was sought on these constraints with each item having three degrees on a seriousness continuum *i.e.* 'very serious', 'serious' and 'not serious'. A weightage of 3, 2 and 1 were given for these responses. The sum of scores under each category of response gave the over all scores and thereafter ranks were assigned on the basis of mean constraint scores (worked out by dividing the category overall score with number of respondents in group). The mean per cent scores were also worked out by dividing the mean constraint score with maximum attainable score and then multiplying the result with 100. The data was suitably analyzed using different statistical techniques.

RESEARCH FINDINGS AND ANALYSIS.....

The data analysis are presented in the given Tables from 1 to 8.

On the whole majority of women respondents perceived moderate level of constraints as indicated by data given in Table 1. This, in a way, seems to indicate

that majority of them were not averse to mixed dairy farming. This is certainly a good sign which in turn allows us to put forward that there is ample scope of growth of mixed dairy farming systems.

As evident from Table 1, management and feeding constraints were perceived as most serious. On the other hand, breeding and health care constraints were perceived as least serious by the respondents.

On the other side, items like non-availability of veterinary hospital, vaccination facilities are not timely

Table 1 : Classification of women respondents on the basis of constraint perception scores

Constraint score Category	Frequency (%)	Constraints (Mean per cent score)						
		General	Feeding	Economic	Management	Health care	Breeding	Total score
Low (89-107)	16 (26.7)	49.00	55.67	53.11	56.80	48.10	44.18	50.54
Medium (108-126)	37 (61.7)	59.26	61.33	61.22	68.57	53.76	54.74	59.33
High (127-144)	7 (11.7)	66.67	73.15	68.22	78.19	57.60	66.67	67.75
Overall	60 (100)	57.39	61.21	59.90	66.58	52.72	53.33	57.97
Ranks	-	4	2	3	1	6	5	-

Table 2 : Item wise scores of general constraints, as perceived by women respondents

Sr. No.	General constraints	Total scores	Mean score	MPS	Rank	Overall rank
1.	There is already high burden of work and keeping more animals is not feasible	132	2.20	73.33	4	10
2.	Mixed dairy farming is an unprofitable enterprise	96	1.60	53.33	12	29
3.	Lot of hardship is involved in keeping animals	151	2.52	83.89	2	3
4.	It is very risky to keep dairy animals	90	1.50	50.00	16	33
5.	Milk requirement is not high	115	1.92	63.89	6	18
6.	There is lack of control over financial matters	106	1.77	58.89	8	24
7.	There is lack of independent decision making	105	1.75	58.33	9	25
8.	Dependence on male members of family to take animals to water pond, dispensary	153	2.55	85.00	1	2
9.	Illiteracy is a hindrance to animal management	67	1.12	37.22	21	46
10.	Engagement with other tasks leaves little time for animal keeping	101	1.68	56.11	10	27
11.	Wards do not like animal husbandry related work	91	1.52	50.56	15	32
12.	'Who is to do attitude' in doing work related to animals is a problem	79	1.32	43.89	18	39
13.	Nutritional requirements of family are met by means other than mixed dairy farming	74	1.23	41.11	20	42
14.	Premises become unclean due to animals	118	1.97	65.56	5	15
15.	Financial requirements of family are met by means other than mixed dairy farming	94	1.57	52.22	14	31
16.	There is availability of milk at economical price	94	1.57	52.22	14	31
17.	Fragmentation of land holdings is a hindrance to mixed farming	145	2.42	80.56	3	5
18.	There is lack of irrigation facilities for fodder crops	95	1.58	52.78	13	30
19.	Shifting of cropping patterns has led to difficulties in animal keeping	94	1.57	52.22	14	31
20.	Since male animals are not required in fields these days, there is no need to rear animals	89	1.48	49.44	17	34
21.	High milk yielding breeds of animals are not available	113	1.88	62.78	7	20
22.	There is lack of storage facility for dairy products	75	1.25	41.67	19	41
23.	Labor is a problem and keeping animals have become difficult	99	1.65	55.00	11	28

available, non-availability of veterinary surgeons, etc. were perceived as least serious. The most seriously perceived constraints included -high cost of animal feeds, high cost of buffaloes, of etc.

The respondents considered high cost of animal feeds as one of the most serious constraints. The problem is not absolute and is in part a reflection of the changing agricultural practices besides changing market dynamics. Firstly, the problem can be understood from the point of view of changing agricultural practices, leading to decline in the availability of crop residues (such as wheat straws). The reduced availability has fuelled the prices of such feed stuffs in recent past.

Secondly, over the last three decades there has been a marked shift in favour of concentrate feeding. Infact, it has been argued that the higher output growth in the Indian Dairy sector since 1980s owes much to the availability of concentrate to the otherwise poorly fed animals (Gautam *et al*., 2010).

The share of cereal consumption in the livestock

Table 3 : Item wise scores of feeding constraints, as perceived by women respondents

Sr. No.	Feeding constraints	Total scores	Mean score	MPS	Rank	Overall Rank
1.	There is lack of knowledge about balanced ration	109	1.82	60.56	6	22
2.	There is non-availability of pastures	112	1.87	62.22	5	21
3.	Non-availability of green fodder throughout the year	114	1.90	63.33	4	19
4.	Non-availability of dry fodder	79	1.32	43.89	10	39
5.	High cost of animal feeds	154	2.57	85.56	1	1
6.	Non-availability of seeds of high yielding varities (H.Y.V.) of fodder crops	73	1.22	40.56	11	43
7.	There is poor grain and byproduct availability for animals	83	1.38	46.11	9	36
8.	Non-availability of supplement feed / mineral mixture in village	103	1.72	57.22	8	26
9.	Feeding of animals is a tiresome task	106	1.77	58.89	7	24
10.	Male members do not render a helping hand in animal feeding	139	2.32	77.22	3	8
11.	Lack of clean drinking water sources for animals	140	2.33	77.78	2	7

Table 4 : Item wise scores of economic / marketing constraints, as perceived by women respondents

Sr.No.	Economic / Marketing constraints	Total scores	Mean score	MPS	Rank	Overall rank
1.	The location of market is far away.	76	1.27	42.22	5	40
2.	Input costs are increasing and it's very difficult to achieve profitability.	143	2.38	79.44	2	6
3.	There is lack of credit facility for dairy farmers.	82	1.37	45.56	4	37
4.	There is lack of insurance facilities for animals.	75	1.25	41.67	6	41
5.	The price of produce is un-remunerative.	122	2.03	67.78	3	14
6.	Cost of buffaloes is very high.	149	2.48	82.78	1	4

Table 5 : Item wise scores of management constraints, as perceived by women respondents

Sr. No.	Management constraints	Total scores	Mean score	MPS	Rank	Overall rank
1.	More time is required for household work thus, lack of time devote to animal husbandry.	117	1.95	65.00	4	16
2.	Have to render helping hand in fields and this makes difficult to keep animals.	122	2.03	67.78	3	14
3.	There is lack of space for animal premises.	127	2.12	70.56	2	12
4.	There is difficulty in management of animals during inclement weather conditions	115	1.92	63.89	5	18
5.	There is difficulty in cleaning the animal houses.	122	2.03	67.78	3	14
6.	There is lack of clean ponds in village. Bathing of animals in absence of ponds is a problem.	130	2.17	72.22	1	11
7.	Waste disposal is a major problem.	106	1.77	58.89	6	24

feed has been on rise worldwide. For example, Delgado *et al.* (1999) estimated that the share of developing countries in world use of cereals for feed went up from 21 per cent in 1982-84 to 36 per cent in 1996. But now, the increase in cereal grain prices (perhaps owing to both increasing international prices and national policies) is restricting the farmers' ability to feed concentrates to dairy animals.

Doubts have earlier been raised on the ability to maintain a shift in favour of increasing concentrate use

Table 6 : Item wise scores of healthcare constraints, as perceived by women respondents

Sr.No.	Healthcare constraints	Total scores	Mean score	MPS	Rank	Overall rank
1.	Non-availability of veterinary hospital in the village	60	1.00	33.33	10	49
2.	Far away location of veterinary hospital is a problem	71	1.18	39.44	7	44
3.	Non-availability of veterinary surgeons	66	1.10	36.67	8	47
4.	There is lack of doorstep veterinary health care services	81	1.35	45.00	6	38
5.	Cost of treatment of sick animals is very high	88	1.47	48.89	5	35
6.	Vaccination facilities are not timelyavailable	61	1.02	33.89	9	48
7.	There is growing problem of mastitis in lactating animals	116	1.93	64.44	4	17
8.	New born calf care is troublesome	123	2.05	68.33	3	13
9.	There are high losses due to incidence of disease	140	2.33	77.78	2	7
10.	There is economic loss due to high calf mortality rate	143	2.38	79.44	1	6

Table 7 : Item wise scores of breeding constraints, as perceived by women respondents

Sr. No.	Breeding constraints	Total scores	Mean score	MPS	Rank	Overall rank
1.	There is lack of good breeding bulls in villages	136	2.27	75.56	1	9
2.	There is lack of A.I facility in villages	71	1.18	39.44	8	44
3.	Poor conception rates of A.I.	108	1.80	60.00	4	23
4.	There is lack of knowledge regarding care of pregnant animals	79	1.32	43.89	5	39
5.	Repeat breeding in buffaloes is a problem	132	2.20	73.33	2	10
6.	There is a problem of abortion in animals	76	1.27	42.22	6	40
7.	There is growing problem of infertility in animals	117	1.95	65.00	3	16
8.	It is difficult to detect heat in buffaloes	75	1.25	41.67	7	41
9.	Improper feeds lead to animal not coming in heat timely	70	1.17	38.89	9	45

Table 8 : Correlation co-efficients between constraint perception scores and antecedent variables of women respondents

Constraints	Correlation co-efficient 'r' values						
	General	Feeding	Economic	Management	Health care	Breeding	Total score
Age	0.213	-0.045	0.233	-0.045	.387**	.418**	.292*
Education	-0.153	0.026	-0.114	-0.099	-.312*	-0.137	-0.192
Family type	0.078	0.046	-0.222	-0.035	-0.112	0.111	0.017
Land holding	-0.125	0.142	-0.032	-.318*	-0.003	0.189	-0.043
Herd size	0.031	-0.111	0.179	-0.075	.270*	0.007	0.043
Social participation	0.136	0.229	0.164	0.002	0.206	.292*	.260*
Extension contact	.270*	0.098	.287*	0.004	0.203	.263*	.297*
Mass media exposure	0.248	0.241	0.21	-0.085	-0.032	.324*	.269*
Economic motivation	0.015	.283*	0.027	-0.075	-0.006	.261*	0.137
Risk orientation	-0.111	-0.013	-.266*	-0.013	-0.186	-0.026	-0.134

* and ** indicate significance of values at P=0.05 and 0.01, respectively (2-tailed)

for animal feeding (Delgado *et al*., 1999). Thus, farmers have to cope with decreasing availability and rising prices of both crop residues and concentrates.

Many attempts have been made worldwide to look into the fodder scarcity challenge. Broadly, factors like limited and erratic rainfall, shrinking grazing lands due to competition for land for crops and changing land use patterns favouring urbanization and settlement have been held responsible (Ayele *et al.*, 2012).

Respondents considered high cost of animals (buffaloes) as a serious constraint. The cost of milch animals has greatly escalated in the past few years. Thus, apprehension of loss of animals (especially on account of diseases) poses a serious threat to vulnerable farmer. This creates an enhanced sense of risk apprehension. It may be noted here that the risk bearing capacity of farmers is rather poor. Reduction of risk by way of insurance support should be given a serious thought. Some other workers have reported that farmers consider high cost of veterinary treatment as a serious constraint (Khandi *et al*., 2011 and Sharma *et al*., 2010). They have suggested for exploration of alternative low cost treatment regimens. Women respondents considered non availability of veterinary hospital in the village as least serious constraint followed by non-availability of vaccination facilities timely. Also, items like far away location of veterinary hospital and non-availability of veterinary surgeons scored low. This is an indication of the fact that considerable expansion in veterinary services has occurred. Statistics of the department of Animal Husbandry and Dairying, Government of Haryana also support the contention. The number of veterinary institutions in state has increased to 2789 in year 2009-10 (Anonymous, 2010). There is, perhaps, now a case for qualitative improvement in the services rendered by these institutions.

Correlation analysis :

The overall analysis revealed that majority of variables varied with constraint perception scores (Table 8). Age, social participation, extension contact and mass media exposure were significantly and positively associated with constraint perception. The respondents of old age group obtained higher constraint scores as compared to other two categories. Education, land holding, and risk orientation were negatively but insignificantly related to the constraint perception.

Conclusion :

The constraints perceived by the respondents were divided into six main areas *viz*., general, feeding, economic, management, health care and breeding. Management and feeding constraints were perceived as most serious. Constraints like high cost of animal feeds and fodders and high cost of buffaloes were rated as most serious by the respondents. On the other hand they were least bothered about constraints like non-availability of veterinary hospital in the village, vaccination facilities are not timely available, far away location of veterinary hospital is a problem, non-availability of veterinary surgeons and lack of storage facility for dairy products. Age, social participation, extension contact and mass media exposure were significantly and positively associated with constraint perception. Education, land holding, and risk orientation were negatively but insignificantly related to the constraint perception.

COOPTED AUTHORS' –

RACHNA, Department of Dairy Business Management, College of Dairy Science and Technology, Lala Lajput Rai University of Veterinary and Animal Sciences, HISAR (HARYANA) INDIA
Email-rachna.khyalia@gmail.com

GAUTAM AND S.S. SANGWAN, Department of Veterinary and Animal Husbandry Extension Education, College of Veterinary Sciences, Lala Lajput Rai University of Veterinary and Animal Sciences, HISAR (HARYANA) INDIA
Email-gautamhisar@gmail.com; hod.vae@luvas.edu.in

KAMALDEEP, Department of Animal Genetics and Breeding , College of Veterinary Sciences, Lala Lajput Rai University of Veterinary and Animal Sciences, HISAR (HARYANA) INDIA
Email-kamaldeepdhundwal@gmail.com

RICHA KHIRBAT, Institute of Para Veterinary Sciences, Lala Lajput Rai University of Veterinary and Animal Sciences, HISAR (HARYANA) INDIA
Email-richakhirbat.vets@gmail.com

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