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Research Article

A study on Socio economic characteristics and livestock production systems of periurban and rural livestock owners of Belgaum district of Karnataka state, India

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Abstract

India has made remarkable strides in the area of dairy development. India has largest livestock population in the world. Thus, livestock sector plays an important role in the national economy and in the socio-economic development of the country. In view of this, a study was undertaken to analyse Socio economic characteristics and livestock production systems of periurban and rural livestock owners of Belgaum district of Karnataka with special reference to livestock production aspects. Totally 160 respondents of 8 villages in periurban and rural areas was interviewed by administering the standardised interview schedule. Results indicate Majority of respondents of rural, peri-urban and total category (57.5%), (42.5%) and (50.0%) belonged to middle age group. Majority (61.25%) of the respondents of the rural area possessed big landholdings. While in case of peri-urban respondents most of (43.75%) them were marginal land holders. Gobar gas (18.75%), power operated chaff cutter (8.75%) and manual operated chaff cutter (2.5%) were possessed by only peri-urban respondents. In rural as well as peri urban area, half of the respondents' utilised 1.0-1.5 man days for livestock rearing. Almost all the respondents (96.25%) expressed that their purpose of livestock keeping is commercial purpose followed by subsidiary purpose. 45 per cent of rural respondents and 42.5 per cent of peri-urban respondents owned medium herd size.

Keywords: dairy development, livestock production, rural area.

Introduction

India has largest livestock population in the world. The total livestock population of India makes up a huge number of 1,85,181000 and stands first in cattle and buffalo population ,second in goats and third in sheep in the world. India has 57 percent of the world's buffalo population. According to provisional census of Government of Karnataka, 2003.

About 19 million people work in livestock sector. Eleven million in principal status and 8 million in subsidiary status which is 5 percent of the total working population (National Sample Survey Organization, 1999-2000). Livestock sector provides self-employment to many rural masses. Thus, livestock sector plays an important role in the national economy and in the socio-economic development of the country. This sector also plays a significant role in supplementing family income in generating gainful employment in the rural sector particularly among the landless, marginal, small farmers and women besides providing cheap nutrition to millions of people. The present study was conducted to analyse the Socio economic characteristics of periurban and rural livestock owners.

Materials and Methods

Study was conducted in Belgaum district of Karnataka state, as it ranks first in terms of total livestock population. Sample was drawn from periurban and

rural areas. Periurban refers to an area or village or habitation located in the perimeter of the urban area having partial or complete influence of urbanization. Four villages that are located within a distance of 8 km from district headquarter with partial influence of urbanization were selected as periurban areas. Another 4 villages located beyond 8 km were selected for rural areas. Thus the study covered totally 8 villages. Possession of livestock was the main criterion used to select the respondents. In each selected village, 20 respondents were randomly interviewed. The study covered 80 farmers from periurban area and 80 from rural area totalling to 160 farmers. The data was collected through personal interview technique. Interview schedule was designed incorporating all the identified variables and was tested at three different stages to identify the ambiguities and to standardised the interview schedule. This standardised interview schedule was used to collect the data from the respondents.

Regarding age of the respondents, the number of years completed by the respondents at the time of study was collected and categorized into 3 categories, namely, young, middle and old age groups and the education of respondents, One score was given for each year of formal schooling completed by the respondent. The actual caste mentioned by the respondent at the time of the study was noted down. Then they were grouped under different heads as per the classification suggested by State department of Social Welfare, Government of Karnataka. The size of the family was categorized as small and large. The extent of land actually possessed by the farmers was recorded and this was converted into standard order based on Karnataka Land Reforms Act 38 of 1996. Various improved equipment used by the farmers to rear livestock was collected. Income earned by the family from various sources in one year was summed up to compute total annual income. Number of hours spent by family or hired labour every day for various activities of livestock rearing excluding grazing activity was collected and converted in terms of man days (1 man day = 8 hrs).

The purpose of livestock keeping was assessed by asking respondents to mention the basic purpose of rearing livestock. The responses were broadly classified as commercial and subsidiary purpose. Subsidiary purposes were again grouped under five heads and expressed in frequency and percentages.

The various methods used by the respondents to feed livestock was collected and quantified for developing feeding index. Regarding herd composition, data was collected on the type of livestock owned by the respondents at the time of the study. The frequency and percentages for the number of respondents owning animals were calculated.

Herd size was expressed in terms of standard adult cattle units. Scores for calculating Standard Adult Unit were assigned as Large ruminants like buffaloe/cow= 1, Calves of large ruminants and Small ruminants like sheep or goat= 0.5 and Lambs and kids of small ruminants= 0.25. The scores for each respondent were totalled and categorized as small, medium and large herd size based on mean and standard deviation.

Average milk yield was calculated for each of the milch animal and was multiplied with the total number of milch animals owned by the respondent at the time of the study. This was taken as total volume of milk produced by the respondent's household. The respondents were categorized into three categories viz., low, medium, high milk producers on the basis of mean and S.D.

The frequency and percentages were calculated separately for rural and periurban respondents.

Results and Discussion

Socio-economic characteristics of livestock owners in periurban and rural livestock owners

Majority of respondents of rural, peri-urban and total category (57.5%), (42.5%) and (50.0%) belonged to middle age group followed by old age group and young age group.(Table-1) The possible reasons for this could be, the middle and young aged respondents are more eager, interested and enthusiastic to earn additional income from dairy management there by improve the livelihood status. The similar results were reported by Patange *et al.* (2001) and Gangil and Dabos (2005).

Regarding education, in rural area more number of farmers (33.75%) were educated up to primary school and 28.75 per cent were illiterates. While in peri-urban area 40 per cent of the respondents were educated upto high school and illiterates were only 21.25 per cent. Reason for higher education sought by

Table 1. Socio-economic characteristics of livestock owners in periurban and rural livestock owners of Belgaum district. N=160

Sl. No	Particulars	Categories	Rural		Peri urban		Total	
			Number	Percentage	Number	Percentage	Number	Percentage
1	**Age**							
	Young	18-30	6	7.5	16	20	22	13.75
	Middle	30-50	46	57.5	34	42.5	80	50.00
	Old	>50	28	35	30	37.5	58	36.25
	Total		80	100	80	100	160	100.00
	Mean		48.2		46.4			
2	**Education**							
	Illiterate	0	23	28.75	17	21.25	40	25.00
	Primary school	7	27	33.75	17	21.25	44	27.50
	High school	10	18	22.5	32	40	50	31.25
	Graduation & above		12	15	14	17.5	26	16.25
	Total		80	100	80	100	160	100.00
	Mean		6.025		7.60			
3	**Land holding**							
	Landless	0	6	7.5	9	11.25	15	9.378
	Marginal	1 ha	10	12.5	35	43.75	45	23.175
	Small	2 ha	15	18.75	19	23.75	34	21.25
	Big	>2 ha	49	61.25	17	21.25	66	41.25
	Total		80	100.00	80	100.00	160	100.00
	Mean							
4	**Family size**							
	Small	4	30	37.5	14	17.5	44	27.50
	Big	>4	50	62.5	66	82.5	116	72.50
	Total		80	100	80	100	160	100.00
	Mean		11.86		7.60			
5	**Caste**							
	Schedule Caste		4	5	2	2.5	6	3.75
	Scheduled tribe		1	1.25	1	1.25	2	1.25
	Backward caste		6	7.5	7	8.75	13	8.125
	Forward caste		69	86.25	70	87.5	139	86.87
	Total		80	100	80	100	160	100.00
6	**Mechanization**							
	Elagi		45	56.25	64	80	109	68.12
	Gobar gas		0	0	15	18.75	15	9.37
	Chaff cutter (power operated)		0	0	7	8.75	7	4.37
	Chaff cutter (manual)		0	0	2	2.5	2	1.25

7	**Annual income (Rs.)**							
	Low	11500	1	1.25	0	0	1	0.625
	High	>11500	79	98.75	80	100	159	99.375
	Total		80	100	80	100	160	100.00
	Mean	82816			77805			
8	**Human labour** [in mandays]							
		0.5-1	25	31.25	8	10	33	20.62
		1-1.5	46	57.5	40	50	86	53.75
		1.5-2	7	8.75	24	30	31	19.37
		2-2.5	1	1.25	7	8.75	8	5.00
		>2.5	1	1.25	1	1.25	2	1.25
	Total		80	100	80	100	160	100.00
	Mean		1.22		1.53			

the peri urban respondents could be better awareness about the importance of education as well as better access to education facilities. The similar findings were reported by Saini *et al.* (1981).

Majority (61.25%) of the respondents of the rural area possessed big landholdings. While in case of peri-urban respondents most of (43.75%) them were marginal land holders. The reason for possession of land in small size might be the regular fragmentation of land occurring in the rural and peri-urban areas between the children when the families get separated. The similar findings were reported by Prasad *et al.* (2001).

The results presented in Table 1 indicated that majority of the respondents in the rural (62.5%), peri-urban (82.5%) and in total category (72.5%) belonged to big family size (>4 members). The probable reason could be the prevalence of joint family system in the study area.

Total category (86.87%) belonged to forward castes. Very less percentage of respondents belonged to schedule castes (3.75%) and scheduled tribes (1.25%) category (Table 1).

The reasons for this might be that most of the schedule castes and schedule tribe respondents were poor and landless. Thus they might not have enough financial resources to purchase the livestock and rear them. This was not so in case of farmers belonging to forward caste.

Elagi, a low cost implement to conveniently cut small quantity of fodder was also owned by majority of the rural (56.25%) and peri-urban (80%) farmers' because of its cost and operational effectiveness.

Gobar gas (18.75%), power operated chaff cutter (8.75%) and manual operated chaff cutter (2.5%) were possessed by only peri-urban respondents. This is because, the peri-urban respondents due to their close contact with urban area, could be well aware of better innovative implements to reduce dependence on labour and better utilizing the fodder. The similar findings were reported by Ramchand (1986).

Cent percent of peri urban respondents, 98.75 percent of rural respondents and in total 99.37 respondents belonged to high income group.

The probable reasons could be, the more number of livelihood sources for peri urban respondents like dairying plus work in nearby cities. In case of rural respondents, majority had a very good agriculture land utilized for sugarcane cultivation. Thus the higher income of the respondents in both peri urban and rural area was observed. The similar findings were reported by Rao *et al.* (2002).

In rural as well as peri urban area, half of the respondents' utilised 1.0-1.5 man days for livestock rearing. The probable reason for this might be the small herd size. Another reason is the labour involved for grazing activity was not accounted in the study, which would have otherwise brought difference in the man days spent for livestock rearing in rural and peri urban areas. The findings were in line with the findings of Sudheer *et al.* (1999).

Livestock production system in rural and peri-urban areas

The results of Table 2 depicts that, almost all the respondents (96.25%) expressed that their purpose of livestock keeping is commercial purpose followed by subsidiary purpose. Illiteracy or education only up to primary level minimizes the employment opportunities. Livestock rearing might have been opted thus by majority of the respondents to earn livelihood as they also have requisite skills. The livestock inherited would have also acted as a basic source to increase the number without any initial investment for majority of the respondents. The findings were in line with the findings of Prasad *et al.* (2001).

Regarding the feeding pattern in rural as well as in peri urban area majority of the respondents (97.5%, 98.75%) soaked the feed before feeding it to livestock. Respondents expressed that soaking would improve the palatability and digestibility of the feed. Sixty one per cent rural respondents and 30 per cent of the peri urban resorted to powdering of the feed. The portion of farm grown cereals and pulses which are comparatively of poor quality are mixed and powdered by the rural respondents to effectively utilise for livestock rearing. This system is prevalent in rural part of the study area. In peri urban area, much of the dependence is for purchased concentrate hence only 30 percent respondents owning land might have resorted to the said option. More than half of rural and peri urban respondents reported that fodder is chaffed before feeding, thus percentage of fodder wastage is reduced. The implement *Elagi* though used to chaff the stover of course cereals, farmers expressed that it is not a very effective tool to chaff straws of paddy and wheat. This could be the reason why in spite of its low cost some percentage of farmers did not follow the practice of chaffing fodder before feeding. The similar findings were reported by Biradar *et al.* (2003) and Prashanth Kumar (2005).

In rural areas majority of the respondents (43.75%) possessed local buffaloe followed by Bullocks (28.33%) and crossbred cow (21.25%).In peri-urban area most of the respondents (38.27%) possessed local buffaloe followed by upgraded buffaloe (21.70%) and bullocks (14.28%). In total, most of the respondents possessed (39.94%) local buffaloes.

High cost of upgraded buffaloe/ crossbred cow could be the main reason for less number of them found in rural households. Also the notion that cross bred animals require extra care in their maintenance would have also influenced the finding. The findings were in line with the findings of Chauhan *et al.* (1973).

The results obtained from Table 2 indicated that 45 per cent of rural respondents and 42.5 per cent of peri-urban respondents owned medium herd size. Several reasons like non availability of space to house more number of animals in peri urban area, high cost of animals, restricting herd size in accordance with the estimated production of crop residues, selling of animals to meet out contingency expenditure of the family etc., would have influenced the present finding.

The results indicated that majority of respondents of rural (55%) and peri-urban (85%) areas produced medium quantity of milk. Prevalence of local breeds, non adoption of scientific feeding method, small herd size might be the reasons for present finding. The similar findings were reported by Gulati *et al.* (2001).

Table 2.Livestock Production system in rural and Peri-urban areas of Belgaum District

n=160.

. No.	Particulars	Categories	Rural		Peri urban		Total	
			Number	Percentage	Number	Percentage	Number	Percentage
1	**Purpose of livestock keeping**							
		Commercial purpose	76	95	78	97.5	154	96.25
		Subsidiary purpose						
		Milk to the family	80	100	80	100	160	100.00
		Cowdung for fuel	79	98.75	80	100	159	100.00

		Cowdung for manure	80	100	80	100	160	100.00
		For draft purpose	35	43.75	48	60	83	51.875
		Gobar gas	1	1.25	6	7.5	7	4.375
2	**Feeding pattern**							
		Soaking	78	97.5	79	98.75	157	98.125
		Chaffing	44	55	62	77.5	106	66.25
		Powdering/dani	49	61.25	24	30	73	45.625
		Direct feeding	36	45	17	21.25	53	33.125
		Chaffing by machine	2	2.5	9	11.25	11	6.875
		Pelletes	0	0	2	2.5	2	1.25
3	**Herd composition**							
		Local cow	4	1.66	17	3.11	21	2.67
		Crossbred cow	51	21.25	68	12.45	119	15.139
		Local buffaloe	105	43.75	209	38.27	314	39.949
		Crossbred buffaloe	7	2.91	119	21.70	126	16.03
		Bullocks	68	28.33	78	14.28	146	18.57
		Sheeps & Goats	5	2.08	55	10.07	60	7.63
		Total	240	100.0	546	100.0	786	100.00
4	**Herd size**							
		Small [mean-0.425*SD]	21	26.25	31	38.75	52	32.50
		Medium [mean ± 0.425 * SD]	36	45	34	42.50	70	43.75
		Large[mean+0.425*SD]	23	28.75	15	18.75	38	23.75
		Total	80	100	80	100	160	100.00
		Mean	5.65		11.68			
		SD	2.815		10.89			
5	**Volume of the milk produced**							
		Low [mean-0.425*SD]	10	12.5	4	5.00	14	8.75
		Medium mean±0.425±SD]	44	55	68	85	112	70.00
		High [mean+0.425*SD]	26	32.5	8	10	34	21.25
		Total	80	100	80	100	160	100.00
		Mean	230.34		196.10			
		SD	143.9		72.335			

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