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Channappagouda Biradar

Associate Professor, Head,
Department of VAHEE,
Veterinary College Bidar,
KVAFSU, Bidar, Karnataka,
India

GRK Sharma

Professor, University Head,
Department of VAHEE, SVVU,
CVSc Tirupati, Andhra Pradesh,
India

KC Veeranna

Vice – Chancellor, KVAFSU
Bidar, Karnataka, India

Maheboob Ali

M.V.Sc Scholar, Department of
VAHEE, Veterinary College,
Bidar, Karnataka, India

Socio-economic profile of small ruminant farmers in Karnataka

Channappagouda Biradar, GRK Sharma, KC Veeranna and Maheboob Ali

Abstract

This study was undertaken with the main objective to study the socio-economic profile of small ruminant farmers in Karnataka. The study was conducted in the state of Karnataka by following the exploratory and ex post facto research designs. A total of 240 farmers (60 farmers from 6 villages belonging to 4 districts i.e., one district with highest small ruminants selected from each revenue division of the state), were selected purposively in the state were used for data collection through structured schedules and questionnaires developed for the present study. The data was tabulated and analyzed by using simple statistics. Majority of small ruminant farmers in the study area were middle aged, male, illiterate, professed agriculture as their main occupation and small ruminant farming as their sub occupation. With regard to ICT awareness nearly all were aware of mobile, television as well as YouTube and WhatsApp applications indicating the scope for ICT based extension interventions. However, the variation between the divisions was noticed with respect age group, farming experience, land holding, social participation and information possession might be due to regional diversity, differential access to education, changed priorities and non-uniform distribution of extension institutes as well as human resources. This warrants the formulation of policies and programmes based on local needs and aspirations.

Keywords: Small ruminant farmers, Socio-economic profile, Karnataka, ICT awareness

Introduction

India with largest livestock population (512 million) in the world (FAO, 2013) accounts second largest number of goats (16.1%) and third highest number of sheep (5.7%) of world's population (BAHS, 2016) [3]. Karnataka holds sheep population of 110.5 lakhs and goat population of 61.69 lakhs (20th Livestock census). An annual growth of 1.3 and 0.96 per cent were recorded in the Karnataka state sheep and goat population during 1951-2007. The population density of sheep and goat in Karnataka was 46.81 sheep and 23.42 goats per 1000 sq. km respectively. In spite of various development programs and extending extension advisory services since long, shortage of labor, shrinking of grazing land, poor veterinary service infrastructure, exploitation by middle man, low market price are the bottlenecks in this sector. The poor attitude of farmers towards the adoption of innovations and unscientific method of price fixation, were some serious issues needed the urgent attention for the development of this sector. Hence an attempt has been made to understand the basic socio-economic profile of these small ruminant rearers in Karnataka state in this study.

Materials and Methods

The Karnataka state with 30 districts is divided into four revenue divisions viz., Bengaluru, Mysuru, Belagaavi and Kalaburagi. A district with highest number of small ruminant population (sheep and goat together) from each division viz., Tumakuru district in Bengaluru division, Mandya district in Mysuru division, Belagaavi district in Belagavi division and Ballari district in Kalaburagi division were selected based on 19th Livestock Census-2012. Two taluks were randomly selected in each district and three villages from each selected taluka were randomly selected with due care of only those villages which had small ruminant population of more than one thousand. A total of 24 villages from 8 taluks belonging to four districts representing each revenue division were finally selected for the present study.

Ten small ruminant farmers were randomly studied from each selected village, leading to total sample size of 30 from each taluka, 60 from each district representing each revenue division and thus reaching the total sample size of 240 altogether. The data was collected by using semi-structured interview schedule from the farmers. The data is tabulated and analyzed by

Corresponding Author:

Channappagouda Biradar

Associate professor & Head,
Department of VAHEE,
Veterinary College Bidar,
KVAFSU, Bidar, Karnataka,
India

using SPSS software package.

Results and Discussion

Age Group

The age of the sheep farmers in the study area ranged between 18 to 80 years and their categorization into three age groups revealed that majority of the farmers in the study area were middle-aged (39.58% and 75%) followed by young age (32.50% and 20%) and old age group (27.92% and 5%) among the pooled sample and Tumakuru district. While the majority of small ruminant rearers in Mandya of Mysuru division were young (53.33%) while in Ballari and Belagaavi districts majority belonged to old age group (45% and 50% respectively). From the results, it can be inferred that the participation of mostly middle to young age farmers in small ruminant farming is a good trend. The results were partly in line with Ramesh *et al.*, (2012) [15], Rajanna *et al.*, (2012) [13], Balusamy (2004) [4] and Mishra *et al.*, (2004) [11]. The rising demand for mutton and chevon and need to take up the small ruminant farming on a commercial scale by using the latest technology warrants the necessity to encourage more and more youth to participate in small ruminant ventures.

Gender

Table 1 revealed that majority of respondents were male (87.50%, 85%, 81.67%, 93.33% and 90%) followed by female (12.50%, 15%, 18.33%, 6.67% and 10%) in the pooled sample as well as in Tumakuru, Mandya, Ballari and Belagaavi districts respectively.

Similar results were reported by Adams and Ohene-Yankyera (2015) [1], Kairu-Wanyoike *et al.*, (2014) [6] and Rajanna *et al.*, (2012) [13]. Unlike cattle grazing, small ruminants need to be taken to far-away places in search of forage which might be the reason for more male involvement.

Education

A perusal of Table 1, revealed that the majority of the small ruminant rearers in the study area were illiterate (33.75%, 33.33%, 30%, 36.67% and 35%) followed by literate (25.42%, 23.33%, 23.33%, 28.33% and 26.67%), primary (14.58%, 15%, 15%, 11.67% and 8.33%) and higher education in the pooled sample, Tumakuru, Mandya, Ballari and Belagaavi districts respectively.

The existing sheep production system with a seasonal migratory pattern followed by most of the large shepherds is a discouraging factor for them to attend school and develop an interest in formal education. There is a need to focus on the literacy of sheep farmers which would assist them in improving social participation and extension contact while indirectly uplifts the socio-economic status. Lack of awareness on the importance of formal education may also be a reason for the lesser educational status. These findings are in accordance with Adams and Ohene-Yankyera (2015) [1], Rajanna *et al.*, (2012) [13] and Suresh *et al.*, (2008) [18].

Occupation

On careful analysis of Table 2, it was found that majority of respondents professed agriculture (45%, 51.67%, 41.67%, 43.33% and 43.33%) as their main occupation followed by small ruminant farming (33.33%, 35%, 36.67%, 35% and 26.67%) in the pooled samples well as Tumakuru, Mandya, Ballari and Belagaavi districts respectively. It was also revealed that majority of the respondents had small ruminant farming (33.33%, 51.67%, and 33.33%) as their major sub

occupation in the pooled sample, Tumakuru and Mandya districts respectively, while agriculture labor was the major sub occupation in Ballari and Belagaavi (33.33% each) districts.

These findings are partly in consonance with the findings of Thilakar and Krishnaraj (2010) [19], Kuldeep *et al.*, (2006) [8] and Thiruvankadan *et al.*, (2004) [20] but in contrast to the findings of Mastanbi (2015) [10].

Family type and size

It could be observed from the Table 2 that most of the farmers in the study area had nuclear family (67.08%, 68.33%, 81.67%, 61.67% and 56.67%) followed by joint family (32.92%, 31.67%, 18.33%, 38.33% and 43.33%) in the pooled sample and in all four selected districts *viz.*, Tumakuru, Mandya, Ballari and Belagaavi respectively. Family size ranged between 2-15 and its analysis pointed out that most of them (71.67%, 71.67%, 85%, 65% and 65%) had small size family of 2 to 6 members followed by medium size of family with 7 to 8 members (24.17%, 21.67%, 13.33%, 30% and 31.67%). These results are in concurrence with Praveen Kumar *et al.*, (2012) [12] and Mastanbi (2015) [10]. The results are matching with the general trend of society wherein joint families are disintegrating into nuclear families.

Farming experience

With regard to farming experience, the data analysis revealed that most of them (42.08%, 60% and 55%) belonged to low experience group followed by medium experience group (37.92%, 40% and 35%) and very few had high experience (20%, 0% and 10%) in the pooled sample, Tumakuru and Mandya districts respectively. But in Ballari and Belagaavi districts majority belonged to medium experience (36.67% and 40%) followed high experience (33.33% and 36.67%) and low experience (30% and 23.33%) respectively.

Further the data also indicated that in the pooled sample majority (49.58%) had low experience in small ruminant farming followed by medium experience (33.33%) and high experience (17.08%). Similarly, the majority of Tumakuru, Mandya and Belagaavi farmers also had low experience (71.67%, 56.67% and 40%) followed by medium (28.33%, 33.33% and 33.33%) and high experience (0%, 10% and 26.67%). But in contrast, majority in Bellary district had a medium level of experience (38.33%) in small ruminant farming. These findings are in accordance with Rajanna *et al.*, (2012) [13] and Anandarao (2010) [2].

Land holding

A majority of the respondents were marginal farmers (37.50%) followed by large farmers (36.67%) and small farmers (25.83%) in the pooled sample. Majority of the small ruminant rearers (48.33% and 70%) were marginal farmers in Tumakuru and Mandya districts respectively, followed by small (30% and 25%) and large (21.67 and 5%) respectively. But in Ballari and Belagaavi districts, the majority were large farmers (71.67% and 48.33%) followed by small farmers (20.00% and 28.33% respectively) and marginal farmers (8.33% and 23.33% respectively). These findings are partly in agreement with the findings of Thilakar and Krishnaraj (2010) [19], Kandasamy *et al.*, (2006) [7], Rajapandi (2005) and Mastanbi (2015) [10] who reported that majority of the sheep farmers were landless and marginal farmers. Variation in land distribution across districts resembles the state general picture of land holding, where in which it is low in southern districts

compared to northern districts. Further, by knowing the importance of holding constant assets and easiness associated with small ruminants' liquidation, shepherds who were landless earlier, are preferring to own land.

Social participation

In the pooled sample of the present study, the majority had a membership of one organization (43.75%) and a nearly equal number did not have any social participation (40.42%). Similarly, across three districts viz., Tumakuru, Mandya and Belagaavi, the majority were a member of one organization (46.67%, 40% and 53.33% respectively) followed by no participation (36.67%, 38.33% and 28.33% respectively). Further, in Ballari district, most (58.33%) of the small ruminant farmers were not part of any organization followed by 35 per cent of farmers who were a member of one organization only. These observations are partly in line with findings of Praveen Kumar *et al.*, (2012)^[12] and Thilakar and Krishnaraj (2010)^[19]. Still, nearly forty per cent of them quoting 'nil participation' is a worrying factor which needs to be looked into.

Information possession

Table 3 indicates that within the pooled data 49.17 per cent small ruminant farmers belonged to medium information-seeking category followed by low (32.08%) and high (18.75%) information seeking categories. The majority farmers of Tumakuru district belonged to medium (53.33) information seeking category followed by low (30%) and high (16.67%) information seeking category. In Mandya and Belagaavi districts, though majority belonged to medium (58.33% and 50%) information possession category, it was followed by high (25% and 26.67%) and low (16.67% and 23.33%) information possession category respectively. In contrast, the majority of the small ruminant farmers in Ballari belonged to low (58.33%) information possession category followed by medium (35%) and high (6.67%) information possession category. These findings are in line with the findings of Rathod *et al.*, (2014)^[16] and Mastanbi (2015)^[10]

who reported that majority of livestock farmers had medium level of information seeking behavior. The difference in information seeking behavior between the districts might be due to education levels, social participation, extension contact and trainings received.

ICT awareness and utilization

Among the ICT tools, nearly all were aware of mobile phones usage (91.25%) in the pooled data and district-wise data viz., Tumakuru (91.67%), Mandya (96.67%), Ballari (86.67%) and Belagaavi (90%) while they were not aware of laptop (95.83%) and desktop (98.33%). Further, regarding Television, the majority in the pooled data (71.67%), Tumakuru (65%), Mandya (83.33%), Ballari (56.67%) and Belagaavi (81.67%) were aware and using it.

With regard to popular ICT applications, it was found that majority were aware of using SMS application (62.08%, 60% and 65%), WhatsApp (57.92%, 63.33% and 51.67%) and YouTube surfing (53.75%, 58.33% and 56.25%) while most of them were unaware of using Facebook (88.33%, 83.33% and 88.33%), video calling (68.33%, 65% and 71.67%), debit card (56.25%, 61.67% and 55%) and farming related apps (86.25%, 85% and 86.67%) in the pooled data, Tumakuru and Belagaavi districts respectively. In Mandya, majority (75%, 70% and 63.33%) were aware of using SMS application, WhatsApp and Debit card respectively while most of them were unaware of using Facebook (86.67%), video calling (63.33%), YouTube surfing (51.67%) and farming related apps (81.67%). In Ballari, a most of the respondents expressed their unawareness about using SMS application (51.67%), WhatsApp (53.33%), Facebook (95%), video calling (73.33%), debit card (71.67%) and farming related android apps (91.67%) but expressed their awareness only about YouTube surfing (63.33%). The results encourage the field level extension functionaries to make use of mobile and television for information sharing with small ruminant farmers. Further, YouTube and WhatsApp can be used to reach the farmers instantaneously for sharing information and other related activities.

Table 1: Distribution of small ruminant farmers based on age, gender, education and occupation

Particulars	Tumakuru (n=60)		Mandya (n=60)		Ballari (n=60)		Belagaavi (n=60)		Pooled (N=240)	
	F	%	F	%	F	%	F	%	F	%
Age group										
Young (18-38)	12	20.00	32	53.33	13	21.67	21	35.00	78	32.50
Middle (39-59)	45	75.00	21	35.00	20	33.33	9	15.00	95	39.58
Old (60-80)	3	5.00	7	11.67	27	45.00	30	50.00	67	27.92
Gender										
Male	51	85.00	49	81.67	56	93.33	54	90.00	210	87.50
Female	9	15.00	11	18.33	4	6.67	6	10.00	30	12.50
Education										
Illiterate	20	33.33	18	30.00	22	36.67	21	35.00	81	33.75
Literate	14	23.33	14	23.33	17	28.33	16	26.67	61	25.42
Primary	9	15.00	9	15.00	7	11.67	10	16.67	35	14.58
Secondary	8	13.33	8	13.33	7	11.67	5	8.33	28	11.67
10+2	7	11.67	8	13.33	4	6.67	5	8.33	24	10.00
Graduation and above	2	03.33	3	5.00	3	5.00	3	5.00	11	4.58
Main occupation										
Agriculture	31	51.67	25	41.67	26	43.33	26	43.33	108	45.00
Agriculture labour	2	3.33	3	5.00	4	6.67	7	11.67	16	6.67
Business	2	3.33	4	6.67	6	10.00	9	15.00	21	8.75
SR farming	21	35.00	22	36.67	21	35.00	16	26.67	80	33.33
Other jobs	4	6.67	6	10.00	3	5.00	2	3.33	15	6.25

Subsidiary occupation										
Agriculture	19	31.67	18	30.0	11	18.33	15	25.00	63	26.25
Agriculture labour	4	6.67	3	5.0	20	33.33	20	33.33	47	19.58
Business	4	6.67	16	26.67	11	18.33	8	13.33	39	16.25
SR farming	31	51.67	20	33.33	15	25.0	14	23.33	80	33.33
Other jobs	2	3.33	3	5.0	3	5.0	3	5.0	11	4.58

Table 2: Distribution of small ruminant farmers based on family type and size, experience, social participation and information possession

Particulars	Tumakuru (n=60)		Mandya (n=60)		Ballari (n=60)		Belagaavi (n=60)		Pooled (N=240)	
	F	%	F	%	F	%	F	%	F	%
Family type										
Nuclear	41	68.33	49	81.67	37	61.67	34	56.67	161	67.08
Joint	19	31.67	11	18.33	23	38.33	26	43.33	79	32.92
Family size group										
Small (2-6)	43	71.67	51	85.00	39	65.00	39	65.00	172	71.67
Medium (7-10)	13	21.67	8	13.33	18	30.00	19	31.67	58	24.17
Large (11-15)	4	6.67	1	1.67	3	5.00	2	3.33	10	4.17
Land holding										
Marginal (0-2.5)	29	48.33	42	70.00	5	8.33	14	23.33	90	37.50
Small (2.5-5.0)	18	30.00	15	25.00	12	20.00	17	28.33	62	25.83
Large (>5.0)	13	21.67	3	5.00	43	71.67	29	48.33	88	36.67
Experience in farming										
Less (1-21)	36	60.00	33	55.00	18	30.00	14	23.33	101	42.08
Medium (22-42)	24	40.00	21	35.00	22	36.67	24	40.00	91	37.92
High (43-63)	0	0.00	6	10.00	20	33.33	22	36.67	48	20.00
Small ruminant farming experience										
Less (1-22)	43	71.67	34	56.67	18	30.00	24	40.00	119	49.58
Medium (23-44)	17	28.33	20	33.33	23	38.33	20	33.33	80	33.33
High (45-66)	0	0.00	6	10.00	19	31.67	16	26.67	41	17.08
Social participation										
Nil	22	36.67	23	38.33	35	58.33	17	28.33	97	40.42
One Organization	28	46.67	24	40.00	21	35.00	32	53.33	105	43.75
Two or more organisations	7	11.67	8	13.33	4	6.67	9	15.00	28	11.67
Executive member	3	5.00	5	8.33	0	0.00	2	3.33	10	4.17
Information possession										
Low	18	30.00	10	16.67	35	58.33	14	23.33	77	32.08
Medium	32	53.33	35	58.33	21	35.00	30	50.00	118	49.17
High	10	16.67	15	25.00	4	6.67	16	26.67	45	18.75

Table 3: ICT awareness and utilization

S.No	Particulars	Tumakuru (n=60)		Mandya (n=60)		Ballari (n=60)		Belagaavi (n=60)		Pooled (N=240)	
		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
ICT Tools											
1	Mobile phone	5 (8.33)	55 (91.67)	2 (3.33)	58 (96.67)	8 (13.33)	52 (86.67)	6 (10.00)	54 (90.00)	21 (8.75)	219 (91.25)
2	Laptop	56 (93.33)	4 (6.67)	57 (95.00)	3 (5.00)	60 (100.00)	0 (0.00)	57 (95.00)	3 (5.00)	230 (95.83)	10 (4.17)
3	Desktop	60 (100.00)	0 (0.00)	58 (96.67)	2 (3.33)	58 (96.67)	2 (3.33)	60 (100.00)	0 (0.00)	236 (98.33)	4 (1.67)
4	Television	21 (35.00)	39 (65.00)	10 (16.67)	50 (83.33)	26 (43.33)	34 (56.67)	11 (18.33)	49 (81.67)	68 (28.33)	172 (71.67)
ICT Applications											
1	SMS	24 (40.00)	36 (60.00)	15 (25.00)	45 (75.00)	31 (51.67)	29 (48.33)	21 (35.00)	39 (65.00)	91 (37.92)	149 (62.08)
2	WhatsApp	22 (36.67)	38 (63.33)	18 (30.00)	42 (70.00)	32 (53.33)	28 (46.67)	29 (48.33)	31 (51.67)	101 (42.08)	139 (57.92)
3	Facebook	50 (83.33)	10 (16.67)	52 (86.67)	8 (13.33)	57 (95.00)	3 (5.00)	53 (88.33)	7 (11.67)	212 (88.33)	28 (11.67)
4	Video Calling	39 (65.00)	21 (35.00)	38 (63.33)	22 (36.67)	44 (73.33)	16 (26.67)	43 (71.67)	17 (28.33)	164 (68.33)	76 (31.67)
5	YouTube Surfing	25 (41.67)	35 (58.33)	31 (51.67)	29 (48.33)	22 (36.67)	38 (63.33)	27 (45.00)	33 (55.00)	105 (43.75)	135 (56.25)
6	Debit Card	37 (61.67)	23 (38.33)	22 (36.67)	38 (63.33)	43 (71.67)	17 (28.33)	33 (55.00)	27 (45.00)	135 (56.25)	105 (43.75)
7	Farming related Android apps	51 (85.00)	9 (15.00)	49 (81.67)	11 (18.33)	55 (91.67)	5 (8.33)	52 (86.67)	8 (13.33)	207 (86.25)	33 (13.75)

Conclusion

Though the small ruminant farmers have medium level of education, social participation and information seeking behaviour, there is huge scope for reaching them through ICT tools and accessing quality advisory services because of technology revolutions in mobile and internet access in the recent past. Small ruminant production throws huge opportunity for socio-economic development of rural livelihoods provided the bottle necks are removed through progressive inclusive policy, quality service delivery and overall capacity building of the farming community involved

in small ruminants rearing.

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