The Pharma Innovation Journal 2022; SP-11(11): 1790-1795

www.ThePharmaJournal.com

The Pharma Innovation

ISSN (E): 2277-7695
ISSN (P): 2349-8242
NAAS Rating: 5.23
TPI 2022; SP-11(11): 1790-1795
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www.thepharmajournal.com
Received: 28-09-2022
Accepted: 30-10-2022

C Lakshmi Devi
University of Agricultural Sciences, Dharwad, Karnataka, India

Nagaratna Biradar
ICAR- Indian Grassland and Fodder Research Institute, Southern Regional Research Station, Dharwad, Karnataka, India

Bheemappa A
University of Agricultural Sciences, Dharwad, Karnataka, India

Guledagudda SS
University of Agricultural Sciences, Dharwad, Karnataka, India

Anil kumar GK
University of Agricultural Sciences, Dharwad, Karnataka, India

Corresponding Author:
C Lakshmi Devi
University of Agricultural Sciences, Dharwad, Karnataka, India

Socio-economic profile of livestock farmers of Andhra Pradesh

C Lakshmi Devi, Nagaratna Biradar, Bheemappa A, Guledagudda SS and Anil kumar GK

Abstract
The present investigation was taken up to study the socio-economic profile characteristics of livestock farmers in three districts of Andhra Pradesh. Survey research design was used and a sample of 120 respondents was drawn. The results of the study mean age of the respondents was 52.13± 10.00, the mean education level was 4.03±1.54, mean family size was 4.92±1.35 and mean land holding of the respondents was 5.01 acres. Majority of the livestock farmers belonged to medium categories with respect to variables like income from livestock, extension contact, mass media participation, market orientation, Cosmo politeness and resource base. Fifty% of respondents possessed 4 and 6 ACUs in each household. Majority of the respondents in East Godavari (70.00%) and YSR Kadapa (67.50%) possessed buffaloes in their household whereas in Srikakulam more than three fourth of the respondents possessed crossbred cows in their households.

Keywords: Age, education, extension contact, livestock farmers

Introduction
Livestock is deemed as the oldest wealth resource for mankind and was once a symbol of economic status in the society. In Indian agricultural economy, the importance given for livestock sector is well known. India has vast resources of livestock and poultry, which play a vital role in improving the socio-economic conditions of rural masses. India is world's highest livestock owner at about 535.78 million, First in the total buffalo population in the world - 109.85 million, Second in the population of goats - 148.88 million, Second largest poultry market in the world, Third in the population of sheep 74.26 million (20th Livestock Census). About 20.5 million people depend upon livestock for their livelihood. Livestock contributed 16% to the income of small farm households as against an average of 14% for all rural households. Livestock provides livelihood to two-third of rural community. It also provides employment to about 8.8% of the population in India. Livestock sector contributes 4.11% GDP and 25.6% of total Agriculture GDP. There is no shortcut to sustain livestock husbandry, without focusing the issues related to the development of fodder and feed resources in the country. Shortage of fodder is due to increasing pressure on land for growing food grains, pulses and oil seed and inadequate attention being given to the production of fodder crops (NIANP, 2012) [1]. Several farmers allocate only few cents irrigated areas for cultivating the fodder crops and many farmers do not allocate land. This intrigues to know the socio economic characteristics of livestock farmers. Therefore present study was taken up.

Material and Methods
The study was conducted in East Godavari (Surplus), Srikakulam (Adequate) and YSR Kadapa (Deficient) districts of Andhra Pradesh. *Survey* research design was used for the study. Keeping the objectives of the study, interview schedule was prepared to address the objectives of the study and it was pre-tested in non-sample area. The final standardized interview schedule was used for data collection. Based on secondary data analysis on feed and fodder availability three districts each belonging to surplus, adequate and deficient fodder available categories were selected. These three districts also belong to three agro climatic zones of Andhra Pradesh. One mandal from each district and four villages from each mandal, and 10 respondents from each village were selected by using random sampling procedure, thus forming the sample size of 120 farmers. Pre-tested interview schedule was used to collect the primary data and statistical techniques like Arithmetic mean, Standard deviation, Frequencies and Percentage were used.

Results and Discussion

The results of socio economic profile characteristics of livestock farmers were presented in Table 1.

Age

Nearly half of the farmers (45.00%) belonged to middle age group followed by 52.50% belonged to old age group and only 2.50% belonged to young age group. The mean age of farmers was 52.13 ± 10.00 years. Majority of the respondents were old aged and they lived in their native villages. Reasons could be that due to shift in economic status, educational and employment opportunities in and around rural areas, many youngsters might have opted non-farm enterprises. Many rural parents due to volatile nature of farming prefer their children to work in non-farm sector where income is more assured. Livestock husbandry demands continuous care and when it is done at subsistence level, youngsters might not be preferred to engage themselves in these activities. This finding is in conformity with the findings of Sangutha *et al.* (2019) [16] and Reddy (2022) [15].

Education

Nearly half of the farmers (46.66%) were illiterates, 18.33% of farmers were educated up to middle school level, 15.00% of farmers were educated up to high school level, 10.83% of farmers were educated up to primary school, 7.50% of farmers were educated up to PUC level and only 1.66% of farmers were graduated or above graduation level. The mean year of schooling was 4.03±1.54 years. This finding might be due to the majority respondents of the study belonging in the age group of middle to old age. Lack of awareness about the importance of education in those days or lack of quality education facilities in the rural areas could be the reason for the present finding. Another reason could be that the respondents might have engaged themselves in livestock rearing and farm activities at young age itself activities affecting their possibility to continue education. This finding is in line with the results of Reddy *et al*. (2017) [14] and Meena *et al.* (2020) [8].

Family size

Half of the respondents (50.83%) belonged to small category of family size. Nearly half of respondents (47.50%) belonged to medium category of family size. Only 1.66% of respondents had large family size. The mean size of family was 4.92 ± 1.35 members (Table 1). Emergence of nuclear type of families in rural area, consciously restricting number of progenies even by rural couple and increase in living cost might be the reason for the present finding.

This finding is in accordance with the findings of Gadekar and Kalal (2022) [5]

Land holding

Almost equal% of the respondents possessed marginal (33.33%) and small (32.50%) land holdings. One fifth (20.83%) of the respondents possessed semi- medium land holdings. Among the remaining, 13.33% of the respondents had medium size of land holdings and none of the respondents had large land holdings. The mean land holding was 5.01±1.22 acres. (Table1). Continuous land fragmentation over the generation would be the main reason for the present finding. Similar findings were reported by Gopi *et al.* (2017) [6].

Annual income

More than half of the respondents (55.83%) belonged to high annual income group (more than Rs. 1,20,001), 29.17 percentage of respondents belonged to medium income group (Rs. 60,001 to 1,20,000) and 15.00% of the respondents belonged to low income group (Rs. up to Rs. 60,000) and The average annual income of the respondents was Rs. 203937.5 ± 124973.5. (Table 1).The reason for this would be assured irrigation facility in two districts of the study which would enable the farmers to cultivate more than one crop in a year. Besides it was found during the survey that in most of the households, at least one family member was working in off farm service sectors with assured income source. This result is similar to the findings of Nataraju (2013) [9] and Rajanikanth (2013) [12].

Income from livestock

More than half of the respondents (74.17%) belonged to medium livestock income group (Rs.1300 to 24,000), 27.50 percent of the respondents belonged to low (Rs.1000 to 12,000) and 15.00 percent of them belonged to high livestock income (above Rs. 24,000) groups. The average income from livestock of the respondents was Rs. 61433.33±39905 per year (Table 1). Reasons for present finding could be that livestock rearing was not a main livelihood activity in respondent's families. It was mainly practiced as subsidiary activity and hence scientific livestock husbandry was not practiced affecting the income flow. The results are in conformity with those of Suresh (2004) [20].

Extension contact

Nearly 80.83% of the respondents had medium extension contact, 14.16% of them had low and 5.00% of them had high extension contact (Table 1). Vaccination, artificial insemination, deworming etc are the usual practices which farmers avail from animal husbandry department at regular interval. Contact with this department is essential for the livestock farmers. So majority farmers expressed that they had medium level of extension contact. Farmers use traditional knowledge and home remedies for minor ailments to the livestock. So they might not be in very frequent contacts with extension personnel leading to negligible percent of respondents with high level of extension contact. The findings were in concurrence with those reported by Prakashkumar (2012) [10] and Kashappa (2013) [7].

Mass media participation

More than three fourth (77.50%) of the respondents had medium mass media participation, 15.00% of them had high and 7.50% of them had low mass media participation. Possession of television- a powerful source of information and entertainment, by almost every household in the villages, could be the reason for the present finding. However due to their farm related activities they would restrict its use mainly in evening hours leading to medium level of extension contact. The obtained results are in conformity with the findings of Fatima (2014) [4] and Soujanya (2014) [19].

Market orientation

Majority of the respondents (87.50%) had medium market orientation, 10.00% of them had low and 2.50% of them had high market orientation. Milk is the main livestock product sold by the farmers. Due to its perishability, farmers prefer to quickly sell it. Many bulk buyers collect milk at doorstep.

Also, many villages have milk cooperative societies to collect milk. Pricing of milk is pre-determined and is not dynamic. Because of some of these factors, majority respondents had medium market orientation.

Cosmo politeness

The results indicated that majority (72.50%) of the respondents had medium level of cosmopolitenss followed by high (24.16%) and low (3.33%) levels of cosmopoliteness. The reason for this could be that most of the respondents were old and middle aged and also had less education. Education and young age tend to contribute for high level of Cosmo politeness.

This finding is in line with the results of Raina *et al.* (2016) [11] and Reddy *et al.* (2021) [13].

Irrigated area

More than one third **(**35.00%) of farmers had irrigated land upto 2.50 acres. About one-third of farmers (30.83%) had irrigated land between 2.51 to 5.0 acres. Among the remaining, 22.5% had irrigated land between 5.01 to 9.0 acres and 11.66% of farmers had irrigated land of more than 9.0 acres. The mean irrigated land was 4.74 ± 3.82 acres (Table 1). East Godavari falls under command area. So, all the respondents of this district had irrigated area. Even in Srikakulam many rivers flow e.g. Nagavali, Vamsadhara, Survarnamukhi, Vegavathi, Mahendratanaya Gomukhi, Champavathi, Bahuda and Kumbikota gedda are the important rivers of this District. In YSR Kadapa, source of irrigation is bore well. So in the study average irrigated area was 4.74±3.82 acres. Similar findings were reported by Banerjee (2016) [3].

Resource base

More than half (54.16%) of the respondents had medium resource base followed by low (33.33%) and high (12.50%) resource base (Table 1). Study districts had good natural resources, financial as well as human resources, leading to the present finding.

Table 1: Distribution of respondents according to their profile characteristics (n=120)

S. No.	Particulars	Respondents	
		Frequency	Percentage
1	**Age**		
	Young (18 to 30 years)	3	2.50
	Middle (31 to 50 years)	54	45.00
	Old (>50 years)	63	52.50
	Mean ± SD	52.13±10.00	
2	**Education**		
	Illiterate	56	46.66
	Primary (1st to 4th std)	13	10.83
	Middle (5th to 7th std)	22	18.33
	High School (8th to 10th std)	18	15.00
	PUC (11th to 12th std)	9	7.50
	Graduate and above (>12th std)	2	1.66
	Mean ± SD	4.03±1.54	
3	**Family size**		
	Small (up to 4 members)	61	50.83
	Medium (5 to 8 members)	57	47.50
	High (>8 members)	2	1.66
	Mean ± SD	4.92±1.35	
4	**Land holding**		
	Marginal (up to 2.5acres)	40	33.33
	Small (2.51 to 5 acres)	39	32.50
	Semi- medium (5.01 to 10 acres)	25	20.83
	Medium (10.01 to 25 acres)	16	13.33
	Mean ± SD	5.01±1.22	
5	**Annual Income**		
	Low (Upto <60,000 Rs/annum)	18	15.00
	Medium (60,001 to 1,20,000 Rs/annum)	35	29.17
	High (>120001 Rs/annum)	67	55.83
	Mean ± SD	Rs. 203937.5±124973.5	
6	**Income from livestock**		
	Low (1,000-12,000 Rs/annum)	33	27.50
	Medium (13,000 to 24,000 Rs/annum)	89	74.17
	High (>25,000 Rs/annum)	18	15.00
	Mean ± SD	Rs.61433.33±39905	
7	**Extension contact**		
	Low	17	14.16
	Medium	97	80.83
	High	6	5.00
	Mean ± SD	40.82±9.64	
8	**Mass media participation**		

	Low	9	7.50
	Medium	93	77.50
	High	18	15.00
	Mean ± SD	5.84±3.08	
9	**Market orientation**		
	Low	12	10.00
	Medium	105	87.50
	High	3	2.50
	Mean ± SD	20.51± 1.73	
10	**Cosmo politeness**		
	Low	4	3.33
	Medium	87	72.50
	High	29	24.16
	Mean ± SD	11.6±2.14	
11	**Irrigated area**		
	up to2.50 acres	42	35.00
	2.51 to 5.0 acres	37	30.83
	5.01 to 9..0 acres	27	22.50
	≥ 9.0 acres	14	11.66
	Mean ± SD	4.74±3.82	
12	**Resource base**		
	Low	40	33.33
	Medium	65	54.16
	High	15	12.50
	Mean ± SD	28.69±4.51	

13. Herd size owned by the respondents

In East Godavari- surplus district five% of the respondents had one adult cattle unit (ACU), one tenth of the respondents had 2 adult cattle units, 27.5% had three ACUs and 12.50% had 4 adult cattle unit. So, more than half of the respondents possessed up to 4 ACUs. While 12.50% each possessed 5 and 7 ACUs, 15.00% possessed 6 ACUs. Negligible percent of respondents possessed more than 8 ACUs (Table 2).

In Srikakulam- adequate district, five% of the respondents had one adult cattle unit (ACU), 45.00% respondents had 2 adult cattle units, more than one third (35.00%) respondents had three ACUs and 2.50% had 4 adult cattle unit. So, 85% respondents possessed up to 4 ACUs. Five ACUs were possessed by 12.5% respondents and none of the respondents possessed more than 6 ACUs.

In YSR Kadapa- deficient district an equal% of the respondents (5.00%) had one and two adult cattle units (ACUs.), 20.00% each had 3 and 4 adult cattle units, (Table 2). 15.00% had five ACUs and 27.50% had 6 adult cattle units. While7.50% possessed 8 ACUs. None of the respondents possessed 9 ACUs in their household.

In East Godavari (surplus) district, more than one fourth (27.5%)% of the respondents owned 3 ACUs, followed by 15% owned 6 ACUs, 12.5 each owned 4,5 and 7 ACUs. In adequate district nearly half (45%) owned 2 ACUs (Table 2). In YSR Kadapa (deficient) district 50% owned upto 4 ACUs. Surplus availability of dry matter could be the reason for bigger herd size possessed by the respondents of East Godavari district. It should be noted that 70% cost of livestock rearing is due to feeding cost. If fodder is available in plenty, then respondents naturally tend to keep a greater number of livestock which they can afford to manage. But when the area belonged to arid zone with no assured rainfall, farmers again tend to keep more livestock as a source of supplementary income to them when crop does not give reasonable yield. So, it was observed in the study that Srikakulam (adequate) district has smaller herd size as compared to other two districts. The findings were in concurrence with those reported by Senthilkumar and Manivannan (2016) [18] and Reddy (2022) [15].

Table 2: Herd size owned by the respondents (n=120)

S. No.	Herd size (ACU*)	Districts		
		East Godavari (Surplus) n_1=40	Srikakulam (Adequate) n_2=40	YSR Kadapa (Deficient) n_3=40
1	1	2 (5.00)	2 (5.00)	2 (5.00)
2	2	4 (10.00)	18 (45.00)	2 (5.00)
3	3	11 (27.5)	14 (35.00)	8 (20.00)
4	4	5 (12.50)	1 (2.50)	8 (20.00)
5	5	5 (12.50)	5 (12.50)	6 (15.00)
6	6	6 (15.00)	0 (0.00)	11 (27.50)
7	7	5 (12.50)	0 (0.00)	0(0.00)
8	8	1 (2.50)	0 (0.00)	3 (7.50)
9	9	1 (2.50)	0 (0.00)	0 (0.00)

ACU*= Adult cattle unit, Figures in brackets are percentages

14. Herd composition possessed by the respondents

Results with regard to the herd composition possessed by the respondents are shown in the Table 3. Among different combination of livestock possessed by the respondents in three category districts of Andhra Pradesh, nearly three fourth of the respondents (70.00%) possessed buffaloes in East

Godavari- surplus district and less% of the respondents possessed local (2.50%) and crossbred cows (5.00%). More than one tenth of the respondents possessed local cow + buffaloes. Remaining compositions- buffaloes + bullock (7.50%), crossbred cow + buffaloes (7.50%) were possessed by equal number of respondents. None of the respondents possessed remaining herd combinations like local cow + crossbred cow, buffaloes + sheep/goat, crossbred cow + sheep/goat and bullock+crossbred cow.

In Srikakulam- adequate district, an equal% (2.50%) of the respondents possessed herd compositions like buffaloes, crossbred cow + buffaloes and crossbred cow + sheep/goat. More than three fourth of the respondents possessed crossbred cows, one tenth of the respondents possessed local cow + crossbred cow and only 5% of the respondents possessed bullock+crossbred cow composition. None of the respondents possessed remaining herd compositions like local cow, local cow + buffaloes, buffalo's bullock and buffaloes + sheep/goat. In YSR Kadapa-deficient district, more than half of the (67.50%) respondents possessed only buffaloes, nearly one third (30.00) of the respondents possessed buffaloes + sheep/goat and only negligible% of respondents possessed local cow + buffaloes (2.50%). None of the respondents possessed remaining herd compositions like local cow, crossbreed cow, crossbred cow + buffaloes, local cow + crossbred cow, buffaloes + bullock, crossbred cow + sheep/goat and bullock+crossbred cow. Results with regard to the herd composition possessed by the respondents are shown in the Table 3. It is interesting to note that in surplus and deficient districts, large number of respondents owned buffaloes which accounted 70% (East Godavari) and 67.5% (YSR Kadapa). But in adequate district, which is Srikakulam, large number of respondents owned crossbred cows. Buffaloes are hardy animals. Farmers in irrigated belt with more dry matter, due to time constraint might have preferred to rear this hardy animal. Similar is the case with YSR Kadapa district- arid zone where hardy animal like buffaloes could be managed with less maintenance by largely allowing them to graze. In Srikakulam-adequate district, large number of respondent's owned crossbred cow. Crossbred cow's yield more milk though they require more maintenance. Buffaloes with sheep/goat were owned only by the respondents of deficient district (30%) as small ruminants are tolerant to hot weather, easy to maintain as well as they generate additional income through the sale of young ones. This finding is in line with the results of Banerjee (2016) [3].

Table 3: Herd composition possessed by the respondents (n=120)

Sl. No.	Composition	Respondents		
		East Godavari (Surplus) n_1=40	Srikakulam (Adequate) n_2=40	YSR Kadapa (Deficient) n_3=40
1	Buffaloes	28 (70.00)	1 (2.50)	27 (67.50)
2	Local cow	1 (2.50)	0 (0.00)	0 (0.00)
3	Crossbredcow	2 (5.00)	31 (77.50)	0 (0.00)
4	Local cow + Buffaloes	5 (12.50)	0 (0.00)	1 (2.50)
5	Crossbredcow + Buffaloes	3 (7.50)	1 (2.50)	0 (0.00)
6	Local cow + Crossbreed cow	0 (0.00)	4 (10.00)	0 (0.00)
7	Buffaloes Bullock	1 (2.50)	0 (0.00)	0 (0.00)
8	Buffaloes Sheep/Goat	0 (0.00)	0 (0.00)	12 (30.00)
9	Crossbreed cow + Sheep/Goat	0 (0.00)	1 (2.50)	0 (0.00)
10	Bullock + Crossbredcow	0 (0.00)	2(5.00)	0 (0.00)

Figures in brackets are percentages

15. Cropping pattern followed by the respondents

Results pertaining to crops grown in seasons are given in Table 4. In Kharif season, almost everyone cultivated paddy i.e. cent% in East Godavari- surplus, 97.50% in Srikakulam-adequate and 90.00% in YSR Kadapa district. Maize was cultivated by 2.5% each in Srikakulam- adequate and YSR Kadapa districts. Two respondents (5.00%) and one respondent (2.50%) cultivated Bajra and Sorghum in YSR Kadapa district, respectively.

In Rabi season respondent's cultivated diverse crops. In Rabi season one respondent (2.50%) cultivated black gram in YSR Kadapa. While 87.50% cultivated paddy in East Godavari-surplus, 12.50% in Srikakulam-adequate and 7.50% in YSR Kadapa- deficient district. One fourth of the respondents cultivated sorghum, 45.00% of the respondent's cotton and 20.00% of respondents cultivated ragi in YSR Kadapa-deficient district. Nearly an equal percent of the respondents cultivated green gram and black gram in Srikakulam-adequate and 12.50% cultivated black gram in East Godavari-surplus district.

In summer season 62.50% of the respondents cultivated paddy and one respondent grown green gram in East Godavari- surplus district. Two respondents cultivated sesame in Srikakulam- adequate, 2.50% sorghum and 7.50% grown sesame in YSR Kadapa- deficient district.

Results pertaining to cropping pattern are given in Table 4. In Kharif season, almost every one cultivated paddy in all the three study districts. Rice is the staple food of people of Andhra Pradesh. It provides main calorific value to the people of the state. Andhra Pradesh is one of the leading rice producers of the country. As it is a staple food in Kharif majority cultivated paddy in all three districts. In rabi, paddy is again taken up by the respondents of East Godavari district due to availability of canal irrigation. In fact West Godavari, East Godavari and Krishna are three most important rice producing districts not only of Andhra Pradesh but of the whole of India. East Godavari districts considered as rice bowl of Andhra Pradesh. Legumes like black gram (45%) and green gram (42.5%) were cultivated in rabi in Srikakulam and cotton (45%) and sorghum (25%) were cultivated during rabi season in YSR Kadapa. These are the crops which could be grown using residual moisture. Only in canal irrigated East Godavari district sorghum was taken up as a summer crop. In other two districts only few respondents cultivated green gram might be by using limited irrigation facility available with them. This finding is in conformity with the findings of Sathish (2010).

Table 4: Cropping pattern followed by the respondents (n=120)

Seasons/ Crops Grown	Respondents		
	East Godavari (Surplus) n_1=40	Srikakulam (Adequate) n_2=40	YSR Kadapa (Deficient) n_3=40
Kharif			
Paddy	40 (100.00)	39 (97.50)	36 (90.00)
Maize	0 (0.00)	1 (2.50)	1 (2.50)
Bajra	0 (0.00)	0 (0.00)	2 (5.00)
Sorghum	0(0.00)	0 (0.00)	1 (2.50)
Rabi			
Paddy	35 (87.50)	5 (12.50)	3(7.50)
Sorghum	0 (0.00)	0 (0.00)	10 (25.00)
Cotton	0 (0.00)	0 (0.00)	18 (45.00)
Black gram	5 (12.5)	18 (45.00)	1 (2.50)
Green gram	0 (0.00)	17 (42.50)	0 (0.00)
Ragi	0 (0.00)	0 (0.00)	8 (20.00)
Summer			
Sorghum	25 (62.50)	0 (0.00)	0 (0.00)
Sesame	0 (0.00)	0 (0.00)	1 (2.50)
Green gram	0 (0.00)	2 (5.00)	3 (7.50)
No crop	1 (2.50)	0 (0.00)	0 (0.00)

Figures in brackets are percentages

The findings of the study clearly revealed that majority of the livestock farmers belonged to old age, illiterate, small family size and medium categories with respect to variables like income from livestock, extension contact, mass media participation, market orientation, cosmopoliteness and resource base. The findings augment the need for encouraging the farmers to be educated, enroll as members in social institutions and also there is a need for conducting more number of skill oriented training programmes to the livestock farmers and linking them to financial institutes for getting loans to purchase livestock and fodder.

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