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***RESEARCH ARTICLE*.....**

Socio-economic profile of gaushalas (Cow-shelter) in Karnataka state

Kalyan Mandi and S. Subash

ABSTRACT..... This paper describes socio-economic profile of 40 gaushalas selected randomly out of 80 registered gaushalas in Karnataka state. The 40 selected gaushalas were further categorized into small (12), medium (18) and large size (10) gaushalas based on the herd size. In majority (60.00%) of the large sized gaushalas the milk production was more than 150 lit/ day. The feeding pattern indicated that, the average daily intake of dry fodder, green fodder, concentrate and mineral mixture was found to be 5-8 kg, 2.5-4 kg, 0.2-0.5 kg and 50 g, respectively. The major income source in large sized gaushalas were government funds (45.00%) and sale of milk (20.00%), in case of medium sized gaushalas government funds (25.00%) and sale of FYM (20.00%), while small sized gaushalas earned from individual donations (50.00%). The major expenditure in all the gaushalas was incurred on feeding (40.00%) followed by labour wages (30.00%) and animal shed/infrastructure (12.00%). Cattle herd dynamics in gaushalas indicated regular inflow and outflow of cattle herd in gaushalas.

KEY WORDS..... Gaushalas, Cattle, Herd, Conservation

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INTRODUCTION.....

'Gaushala' means an institution established for the purpose of keeping, breeding, rearing and maintaining cattle for the purpose of reception, protection and treatment of infirm, aged or diseased cattle. It is primarily focused on providing shelter to cows and caters mostly to the needs of non-lactating, weak, unproductive and stray cattle (Yadav, 2007). As per the (19th Livestock Census , 2012), India is having about 190 million cattle population, 79 per cent of which are indigenous and the rest 21 per cent constituted as crossbred/exotic. But, a last half decade (2012-19) has seen decline in the total indigenous cattle population to a tune of 8.94 per cent. The major factors for decrease in cattle population are attributed to uneconomical returns due to low productivity and replacement of draft power in agriculture by mechanization. As a result, particularly unproductive, old and stray cattle find shelter in the gaushalas instead of individual households. At present India possess around 4500 gaushalas among which approximately 1850 gaushalas are registered under Animal Welfare Board of India which serves largely the indigenous cattle population (AWBI, 2014). According to Rashtriya Gokul Mission development of Integrated Indigenous Cattle

Centers – "Gaushalas" envisages for enhancement of productivity of indigenous breeds through provision of proper shelter, feeding and health care facilities for stray and abandoned animals (RGM, 2014). Gaushalas have become a model for the sustainable conservation of indigenous cattle and development of cattle population in future However the growing consensus for protection and conservation of our cattle resources due to drastic decline in the indigenous cattle population over the past few decades, institution like gaushalas have gained significant importance over the time but, still the potential of gaushalas are yet to be tapped by its stakeholders especially in India. In this context, the aim of the present study was to investigate the socio-economic status of selected gaushalas in the study area.

RESEARCH METHODS.....

The study was conducted in Karnataka State during the year 2017-18 in forty gaushalas, selected randomly out of total eighty registered gaushalas present throughout the State. The forty selected gaushalas were further categorized as small (12), medium (18) and large sized (10) gaushalas based on the herd size *i.e.* small (below 50), medium (51-150) and large (above 150) animals, respectively on the basis of mean and standard deviation. The primary data was collected from the concerned individuals/stakeholders involved in maintaining the gaushalas through well developed pre-tested structured questionnaire. The socio-economic indicators in gaushalas were herd size, milk production, feeding pattern, income pattern, expenditure pattern and cattle-herd dynamics. Herd size was operationalised as the total number of cattle heads owned by the gaushalas at the time of investigation. Milk production was operationalised as the total quantity of milk produced in litres per day one day prior to the investigation. Feeding pattern in gaushalas was operationalised as the total quantity of green fodder, dry fodder, concentrate and mineral mixture etc. fed to the cattle in a day (g or kg) at intervals in the gaushalas. Income pattern was operationalised as the cash money earned from animals, from sale of milk, milk products and by-products in a year or the financial assistance received from other funding sources or agencies. Expenditure pattern was operationally defined as the amount/fund utilized for expenditure on different purposes or activities *viz.*, expenditure for animal shed/ infrastructure, feed and fodder, healthcare and management, farm tools and implements, labour wages etc. Cattle herd dynamics was operationalised as the total inflow and outflow of cattle in the gaushalas observed during the period of study. The inflow variables comprised of cattle donated or abandoned by the owners, stray cattle brought and cattle purchased by the gaushala management. The outflow variables were cattle sold, donated and dead. The gaushalas were classified into small, medium and large size based on the herd size on the basis of mean and standard deviation. The statistical tools used for the analysis of the results were indicated in frequency and percentages.

RESEARCH FINDINGS AND ANALYSIS.....

The results obtained from the present investigation as well as relevant discussion have been summarized under following heads :

Herd composition in gaushalas:

Results presented in Table 1 revealed that, the sample of 40 gaushalas comprised of total herd size of

Table 1 : Herd composition in gaushalas **(n=40)**

Sr. No.	Category	Small				Medium				Large			
		Indigenous		Crossbred		Indigenous		Crossbred		Indigenous		Crossbred	
		F	(%)	F	(%)	F	(%)	F	(%)	F	(%)	F	(%)
1.	In Milk	100	16	15	52	358	15	45	37	500	16	80	45
2.	Dry	120	19	10	34	400	16	25	20	750	23	25	14
3.	Calves	85	14	4	14	190	8	10	8	275	9	11	6
4.	Heifer	80	13	0	0	240	10	0	0	350	11	0	0
5.	Bull	35	6	0	0	165	7	2	2	150	5	8	4
6.	Old	200	32	0	0	1112	45	40	33	1200	37	55	31
	Total	620	100	29	100	2465	100	122	100	3225	100	179	100
	Total (%)	96.00	-	4.00	-	95.00	-	5.00	-	95.00	-	5.00	-

6640 cattle and were further categorized into small, medium and large sized gaushalas based on the herd size. It was observed that, in all the gaushalas more than 95.00 per cent of the herd composition was indigenous cattle followed by a meagre 5.00 per cent of crossbred. Among the indigenous cattle maintained in the gaushalas, most of them were old and unproductive cattle in small (32.00%), medium (45.00%) and large sized gaushalas (37.00%). A notable percentage (16.00%) of the indigenous cattle were found to be 'in milk' population in all the gaushalas whereas, among the crossbred cattle the 'in milk' population were composed of 52.00 per cent, 45.00 per cent and 37.00 per cent in small, large and medium sized gaushalas, respectively. It is noteworthy to mention that, majority (95.00%) of the gaushalas comprised of indigenous cattle in general and among them most of them were found to be unproductive and old which could be related to their primary objective to serve the old, infirm and unproductive cattle. It was also found that the percentage share of milch cattle in indigenous cattle was less than that of the crossbred which could be attributed to less milk productivity in indigenous milk as most of the gaushalas maintained old, stray and unproductive cattle. The findings of the present study are in line with the findings of Yadav and Vij (2010) who revealed in his study on gaushalas in Haryana State that majority (67.00%) of the cattle maintained were in dry stage followed by 6.00 per cent in milking stage. Kumar *et al.* (2009) also reported that almost all gaushalas in Jind district of Haryana State comprised of indigenous cattle breeds compared to crossbred.

Data presented in Table 2 indicated that a significant per cent (45.00%) of the gaushalas possessed medium herd size (between 51 to 150 nos. cattle), followed by a considerable 30.00 per cent of small herd size (upto 50 nos.) and one-fourth (25.00%) possessed larger herd size (more than 150 cattle). Thus, it can be inferred from the study that majority of the gaushalas maintained medium to small herd size.

Milk production:

Results shown in Table 3 revealed that majority (60.00%) of large sized gaushalas, followed by a sizeable 11.00 per cent of medium sized gaushalas belonged to higher milk production category (above 150 litres/day). Majority (56.00%) of medium sized gaushalas, followed

Table 2 : Distribution of gaushalas based on herd size **(n=40)**

Sr. No.	Category	F	(%)
1.	Small (Upto 50)	12	30
2.	Medium (51-150)	18	45
3.	Large (above 150)	10	25
	Total	40	100

Table 3 : Distribution of gaushalas based on milk production in (litres/day) **(n=40)**

Sr. No.	Category	Small		Medium		Large	
		F	(%)	F	(%)	F	(%)
1.	Low (Upto 50) litres	10	83	6	33	0	0
2.	Medium (50-150) litres	2	17	10	56	4	40
3.	High (above 150) litres	0	0	2	11	6	60
	Total	12	100	18	100	10	100

Table 4 : Feeding pattern in different gaushalas **(n=40)**

Sr. No.	Category	Small	Medium	Large
		Average Intake (kg/day/animal)		
1.	Dry fodder	5	6	8
2.	Green fodder	2.5	3.5	4
3.	Concentrate	0.2	0.5	0.5
4.	Mineral mixture	0.05	0.05	0.05

by a significant 40.00 per cent of large sized and a notable 17.00 per cent of small sized gaushalas had medium milk production (between 51 to 150 litres/day) whereas, a large majority (83.00%) of small sized gaushalas followed by a considerable number of (33.00%) of medium sized gaushalas had low milk production category (below 50 litres/day). This could be attributed to the herd size that majority of the large sized gaushalas maintained more number of milch cattle as compared to small and medium gaushalas. The results were in line with the study of Kumar *et al.* (2009) who observed the similar milk yield pattern in gaushalas of Haryana state.

Feeding pattern:

The results in Table 4 clearly depict the existing feeding pattern of cattle in the gaushalas under study. It could be observed that an average intake of dry fodder (ranging from 5.0-8.0 kg/day), green fodder (ranging from 2.5-4.0 kg), concentrate (around 0.2-0.5 kg) and mineral mixture (around 50g) was fed to the cattle in small, medium and large size gaushalas. The type of green fodder fed to the cattle were sorghum, maize and napier grass, whereas, paddy straw, ragi straw and maize kadbi were the commonly fed dry fodder. Findings of the present study clearly indicates that, cattle in all the gaushalas were underfed as they failed to serve the recommended level of feeding pattern for the cattle, which could be due to inadequate land under fodder cultivation and lack of knowledge about balanced feeding practices. The result is in agreement with the findings of Kumar *et al.* (2009) who also revealed that a limited concentrate was fed to the lactating and pregnant cows maintained in gaushalas at Haryana state.

Income pattern:

A critical observation of Table 5 on the income pattern in large gaushalas revealed that the main source of the income was contributed by funds from government agencies (45.00%), followed by sale of milk (20.00%) and sale of surplus cattle (12.00%). In the case of medium size gaushalas major funding or assistance was from

Table 5 : Income and expenditure pattern of gaushalas **(n=40)**

Sr. No.	Particulars	Small	Medium	Large
		%	%	%
Income pattern in gaushalas				
1.	Fund from Government agencies	10	25	45
2.	Individual donors	50	18	7
3.	Sale of milk	10	15	20
4.	Sale of cattle	2	8	12
5.	Sale of FYM	18	20	10
6.	Sale of Panchagavya	5	10	5
7.	Miscellaneous	5	4	1
	Total	100	100	100
Expenditure pattern in gaushalas				
1.	Expenditure towards feed and fodder	40	42	44
2.	Labour wages/salary	28	30	30
3.	Animal shed/Infrastructure	14	12	12
4.	Manufacturing of by-products	5	4	4
5.	Healthcare and management	2	3	3
6.	Transportation cost	2	1	2
7.	Farm tools/implements/machinery	3	3	2
8.	Cultivation and plantation cost	2	2	1
9.	Expenses for organizing cultural/religious programme	3	2	1
10.	Miscellaneous	1	1	1
	Total	100	100	100

Government support (25.00%) and sale of farm yard manure (20.00%), while in small gaushalas, major funding was from individual donations (50.00%) and sale of farm yard manure (18.00%). It could be inferred that majority of the large sized gaushalas received funds from Government agencies like (AWBI, State AH and VS Department) on an annual basis as compared to medium and small sized gaushalas. And, therefore, the gaushalas mostly relied most upon the donation from individual donors and also through farm income which included sale of milk, surplus cattle, farm yard manure and *Panchagavya* for their sustenance. The findings were in conformity to the studies conducted by Kothari and Mishra (2002) who reported that more than 50.00 per cent of the financial aid to the gaushalas was received through Animal Welfare of India. Kachhawaha *et al.* (2015) also observed that majority of the gaushalas in Rajasthan state generated income by selling of indigenous cows (*i.e.* Tharparkar cows).

Expenditure pattern:

It is noted from Table 5 that around two-fifth (40.00 to 44.00%) of the expenditure in all the three categories of gaushalas (small, medium and large size) incurred expenditure on purchase of feed and fodder, followed by 28.00 per cent to 30.00 per cent towards labour wages/salary and 12.00 per cent to 14.00 per cent was spent on animal shed/infrastructure. Besides this, funds were also allocated and utilized for other regular expenditure like, health care and management, transportation charges, farm tools and machineries, cultivation and plantation cost, manufacturing of by-products and organizing cultural programmes.

Cattle herd dynamics:

It was observed from the Table 6 that there was regular inflow and outflow of cattle in all types of gaushalas. In the case of inflow of cattle in small (45.00%), medium (42.00%) and large sized gaushalas (40.00%) comprised of 'cattle abandoned by owners/ donated'. In case of 'stray cattle brought by gaushala management' around 37.00 per cent, 33.00 per cent and 34.00 per cent belonged to small, medium and large sized gaushalas, respectively, whereas remaining inflow in case of small (18.00%), medium (25.00%) and large (26.00%) was due to cattle 'purchased by gaushala management'. In the case of outflow of cattle in gaushalas, the percentage of cattle 'donated' was (58.00%), (51.00%) and (82.00%) in small, medium and large sized gaushalas, respectively. The outflow of cattle due to 'sale of cattle' in small, medium and large gaushalas was 38.00 per cent, 43.00 per cent and 10 per cent, respectively. The outflow of cattle due to death or mortality of cattle in small, medium and large gaushalas was found to be 4.00 per cent, 6.00 per cent and 8.00 per cent, respectively. Therefore, the total inflow and outflow of cattle in gaushalas per annum was found to be 527 and 193 numbers of cattle, respectively. Yadav and Vij (2011) revealed similar results that on gaushalas located in Haryana State, among 101 gaushalas and found that total inflow and outflow of cattle in gaushalas per annum was 245 and 168, respectively.

Conclusion:

The overall assessment of the soico-economic profile of gaushalas indicated that most of the large sized gaushalas performed better than medium and small sized

Table 6 : Cattle herd dynamics in gaushalas

Sr. No.	Particulars	Small		Medium		Large	
		F	(%)	F	(%)	F	(%)
	Inflow of cattle						
1.	Cattle abandoned by owners/donated	17	45	63	42	136	40
2.	Stray cattle brought by gaushala management	13	37	50	33	116	34
3.	Purchased by gaushala management	7	18	37	25	88	26
	Total inflow	37	100	150	100	340	100
	Outflow of cattle						
1.	Died/mortality	1	4	4	6	8	8
2.	Sold	10	38	30	43	10	10
3.	Donated	15	58	35	51	80	82
	Total outflow	26	100	69	100	98	100

gaushala. The under performance of small and medium gaushalas was attributed to lack of resources and adequate training facilities. Majority of the gaushalas housed indigenous cattle breeds, thus largely contributing towards sustainable breed conservation. Adequate and regular feeding pattern directly enhanced the milk production in gaushalas. The income generated through sale of different cattle by-products compensated the expenditure incurred in gaushalas. Cattle herd dynamics helps to properly monitor and keep proper record of the cattle individually. It also helps to understand the herd composition and structure in the gaushalas which enables proper management of feeding, breeding and health care activities in gaushalas. The study will thus be helpful in taking decisions on management aspects, breeding policy, buying and selling strategies. It will also be very helpful in formulating improvement and conservation strategies of cattle genetic resources in gaushalas.

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