

## Socio-economic status of lesser known Kathani cattle owners in Vidarbha region of eastern Maharashtra state

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### ABSTRACT

Data collected on 9,750 Kathani cattle owners from 118 randomly selected villages distributed in thirteen tehsils of three districts (Chandrapur, Gadchiroli and Gondia) from Vidarbha region of eastern Maharashtra collected during December 2017 to May 2018 were analyzed for studying socio-economic aspects. As Kathani cattle is not yet registered breed at national level consequently these animals were considered under Non-Descript category in animal census. The study results indicated that total Kathani cattle population was observed to be 68,146 in the survey area of which 84.37 per cent were large ruminants, while 15.63 per cent small ruminants. In large ruminants the fraction of Kathani population was 89.95 per cent. All farmers under survey were found keeping 51,720 Kathani animals leading to an average herd size of 5.30 per family. Nearly 85.81 per cent respondents were involved in agriculture farming, percentage of agriculture labours was 14.04 and a small fraction of less than one per cent (0.15) engaged in business like repairing, barber, cow Rakhwaldari, Chaprashi, tailor, goat keeping etc. In survey areas 75.10 per cent farmers were landholders owning average land  $3.42 \pm 0.05$  acres, however percentage of landless was 24.90. Animal status-wise it was noticed that 62.53 per cent animals were breed-able, 23.19 per cent young stock (1 to 3years age), while 14.27 per cent calves below 1 year. The utility of animals revealed that 89.14 per cent Kathani cattle owners were mainly used these animals for agricultural operations and nearly 10.48 per cent of farmers considered these animals fit for milk production, mainly to meet home consumption needs. The study further showed that 85.70 per cent owners narrated specific benefits they were gained from maintaining these cattle and the benefits were broadly classified as for religious purpose, quality manure for agriculture land, fulfils households need as and when arises by animal sale, milk for home consumption, bullocks for draft purpose, help to maintain clean environment, more disease resistance and no frequent illness, very good draft-ability of agriculture work, less requirement of feed and fodder and minimum maintenance cost. Along with benefits achieved through maintaining Kathani cattle the owners narrated expectations for betterment of these animals in future, these expectations were better market facility for milk and animal sale, sufficient feed and fodder, good quality bull and semen availability for breeding their animals, more availability of grazing land in forest areas, some type of incentives like vaccination, deworming, animal health care, supply of mineral mixture, help for animal shed constructions, health supplements to the animals etc.

**Keywords:** Socio-economic aspects, Kathani cattle, breeding tract, Vidarbha region, Maharashtra state

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### INTRODUCTION

The advantages of indigenous animals on draught power capacity, heat tolerance, disease resistance, adapt-ability to harsh climatic conditions, ability to survive and perform under low input systems make them still more important in the given socio-cultural milieu. Increasing concern is expressed towards reduction in number of these animals and the difficulties faced in managing crossbred cattle, necessitate fresh look to the indigenous breeds of cattle although their milk production is low as

compared to their European counterparts. In addition to 43 recognized breeds of cattle, various cattle populations exist in India, which have not yet been properly documented. Characterization of all such cattle populations is important to provide overall picture of cattle genetic diversity. Change in production system, mechanization, loss of rangeland grazing resources, inappropriate breeding policies, their implementation and indiscriminate introduction of exotic breeds are resulting in the disappearance of uncharacterized local populations

of cattle, along with the unique gene and gene combinations (Bhinchhar et.al, 2017). Kathani cattle is one of such important indigenous draft breeds of Vidarbha region of Eastern Maharashtra State. The available published scanty reports do not throw much light on the status of the breed and their owners rearing them. An attempt therefore was made to study the socio-economic status of these cattle owners in breeding tract.

#### MATERIAL AND METHODS

A survey on socio-economic status of lesser known Kathani cattle breed owners was under taken during the period of December 2017 to May 2018 in 118 randomly selected villages distributed in thirteen tehsils spread over three districts i.e. five tehsils from Chandrapur and four each from Gadchiroli and Gondia in Vidarbha region of Eastern Maharashtra as per technical programme described by Singh and Sharma (2016). The cattle in the breed tract were generally maintained by extensive system of management and are occasionally fed with home-made mixed concentrate to only milking, pregnant cows or working bullocks. By and large, open system of housing is provided. Animals are vaccinated for epidemic diseases like FMD, Black Quarter and Hemorrhagic Septicemia as and when Government dispensaries make available these vaccines. The breeding is largely by natural service and mostly in the grazing hours when animals roam in jungles. The data on 9,750 farmers were collected through survey assistants at monthly interval and was compiled,

validated and analyzed using standard statistical procedures as described by Snedecor and Cochran (1967).

#### RESULTS AND DISCUSSION

##### *Distribution of Kathani cattle*

As Kathani cattle is not yet registered cattle breed at national level consequently these animals were considered under Non-Descript category in animal census and district-wise cattle population in the project area studied is presented in Table-1. Total animal population was observed to be 68,146 of which 84.37 per cent were large ruminants while 15.63 per cent small ruminants. The portion of Kathani population among large ruminants was 89.95 per cent. The population of crossbred animals in project area was 1.14 per cent, whereas buffalo population was 8.18 per cent, remaining 0.72 per cent was part of recognized breed of cattle in Vidarbha region (Gaolao). District-wise distribution of livestock population revealed that buffalo population was highest in Gadchiroli (11.76%) followed by Chandrapur (7.47%) and Gondia (4.91%) districts. Review of status of other indigenous cattle breeds in Maharashtra like Dangi (Gokhale, 2003) Deoni (Singh et. al., 2006) and Khillar (Gokhale, 2006) indicated that status of Kathani animals in terms of population is comfortable compared to other breeds exists in the survey area. The survey area is well known for non-descript dairy animal population and cattle are mainly reared for drought purpose rather than milk

**Table-1:** Species wise livestock population in Kathani cattle survey area

S.N.	Animal species	District			Total
		Chandrapur	Gadchiroli	Gondia	
1	Gaolao cattle	52 (0.23)	338 (1.76)	26 (0.16)	416 (0.72)
2	Crossbred	384 (1.73)	103 (0.54)	170 (1.05)	657 (1.14)
3	Non- Descript	20081 (90.57)	16477 (85.94)	15162 (93.88)	51720 (89.95)
4	Buffalo	1656 (7.47)	2255 (11.76)	793 (4.91)	4704 (8.18)
	Sub Total	22173 (85.42)	19173 (79.61)	16151 (89.22)	57497 (84.37)
5	Goat	3593 (94.93)	4580 (93.24)	1897 (97.18)	10070 (94.56)
6	Sheep	192 (5.07)	332 (6.76)	55 (2.82)	579 (5.44)
	Sub Total	3785 (14.58)	4912 (20.39)	1952 (10.78)	10649 (15.63)
	<b>Grand Total</b>	<b>25958 (38.09)</b>	<b>24085 (35.34)</b>	<b>18103 (26.57)</b>	<b>68146 (100)</b>

Figures in parenthesis indicate percentage

**Table 2:** District wise mean herd size in Kathani cattle survey area

S N	Herd Strength	District			Total
		Chandrapur	Gadchiroli	Gondia	
1	10 & below	3659 (93.72)	1868 (82.00)	3467 (97.17)	8994 (92.25)
2	11 to 15	200 (5.12)	262 (11.50)	80 (2.24)	542 (5.56)
3	> 15	45 (1.15)	148 (6.50)	21 (0.59)	214 (2.19)
	Total	3904 (40.04)	2278 (23.36)	3568 (36.59)	9750 (100)
	<b>Average</b>	<b>5.14±0.05</b>	<b>7.23±0.12</b>	<b>4.25±0.04</b>	<b>5.30±0.04</b>

Figures in parenthesis indicate percentage of respondents

production. The study results of Mooventhan et.al.(2016) in Chhattisgarh state also indicated that population of ND cattle was predominant in livestock category and further reported that rearing of livestock animals especially in rural area mainly for draught power rather than milk production. In small ruminants' category, goats' ranks highest (94.56%), which indicated the importance and advantages of goatery farming.

#### Herd size

From Table-2 it was revealed that all the farmers under survey were found keeping 51,720 Kathani cattle for different purposes. The percentage of Kathani cattle population was highest in Chandrapur district (40.04%), followed by Gondia (36.59%) and lowest in Gadchiroli district (23.36%). Highest cattle population in Chandrapur district might be due to one extra tehsil and in Gondia district change of enumerator added more villages under survey. Percentage of animal holders having 10 and less animals per family was highest (92.25) followed by 11 to 15 animals per family (5.56) and more than 15

animals per family (2.19). The percentage of farmers maintaining big herds having 11 to 15 animals and more than 15 animals per family was highest in Gadchiroli district (11.50 & 6.50%), followed by Chandrapur (5.12 & 1.15%) and lowest in Gondia district (2.24 & 0.59%). Average herd size per family was observed to be 5.30±0.04 and ranged from 4.25±0.04 in Gondia district to 7.23±0.12 in Gadchiroli district. The observations of Gokhale (2003) for Dangi cattle owners herd size under hilly conditions were found to be equivalent (3.84) to that of Gondia district's farmers. The results further indicated that since the tribal farmers are economically backward they are unable to maintain their herd in large size. It might be due to the respondents are not only depend on dairy alone for their livelihood and they also engaged themselves in different enterprises like minor forest produce collection, agriculture, wage labour etc. these results were comparable with that reported by Mooventhan et.al.(2016) in Northern hills zone of Chhattisgarh state.

*Family size, literacy and dairying:* Total human

**Table 3:** Average family size of farmers in Kathani cattle survey area

S N	Main Head	Sub Head	District			Average
			Chandrapur	Gadchiroli	Gondia	
1	Total number of respondents		3904	2278	3568	9750
2	Family Members	Male	2.33±0.02	2.62±0.03	2.61±0.02	2.50±0.01
		Female	2.13±0.02	2.31±0.03	2.49±0.02	2.30±0.01
		Total members	4.46±0.03	4.94±0.05	5.09±0.03	4.81±0.02
3	Literacy	Male	1.95±0.02	1.38±0.02	1.86±0.02	1.79±0.01
		Female	1.58±0.02	1.02±0.03	1.68±0.02	1.49±0.01
		Total literacy	3.54±0.03	2.40±0.04	3.54±0.04	3.27±0.02
4	Family members engaged in dairy	Male	1.24±0.01	1.50±0.02	0.77±0.01	1.13±0.01
		Female	1.10±0.01	1.44±0.02	0.59±0.01	0.99±0.01
		Total members in dairy	2.35±0.02	2.94±0.04	1.36±0.01	2.12±0.01

**Table-4:**Type of occupation of respondents in Kathani cattle survey area

S N.	Occupation type	District			Total
		Chandrapur	Gadchiroli	Gondia	
1	Agriculture	2730 (69.93)	2217 (97.32)	3419 (95.82)	8366 (85.81)
2	Agriculture labour	1166 (29.87)	60 (2.63)	143 (4.01)	1369 (14.04)
3	Business	8 (0.20)	1 (0.04)	6 (0.17)	15 (0.15)
	Total	3904 (40.04)	2278 (23.36)	3568 (36.59)	9750

\*Figures in parenthesis indicate percentage of respondents

population of 46,851 in surveyed area was distributed to average  $4.81 \pm 0.02$  family members per family in which  $2.50 \pm 0.01$  male and  $2.30 \pm 0.01$  female members out of which  $1.79 \pm 0.01$  male and  $1.49 \pm 0.01$  female members were literate (Table-3). The average family size noticed here was corresponded with the observations of Kulkarni et.al.(2013). Among the three districts studied average male members per family in Gadchiroli and Gondia districts noticed to be at par ( $2.62 \pm 0.03$  &  $2.61 \pm 0.02$ ) and in Chandrapur district it was  $2.33 \pm 0.02$ , but trend for literate members per family was noticed to be contrary which was lowest in Gadchiroli ( $1.38 \pm 0.02$ ) and highest in Chandrapur district ( $1.95 \pm 0.02$ ). Female members per family as well as literacy among them was highest in Gondia district ( $2.49 \pm 0.02$  &  $1.68 \pm 0.02$ ) compared with other two districts. In animal keeping business it was noticed that average  $2.12 \pm 0.01$  members per family were engaged in which from Gondia district lowest members ( $1.36 \pm 0.01$ ) was adopting dairy as livelihood alternative compared with other two

districts. In Wayanad district of Kerala state Prasad et.al.(2017) indicated that the management of livestock was mainly done by women (64%), followed by men (22%) and both men and women (14%).

*Type of occupation:* Nearly 85.81 per cent respondents were involved in agriculture farming, percentage of agriculture labours was 14.04 and a small fraction of less than one per cent (0.15) engaged in business like repairing, barber, cow rakhwaldari, chaprashi, tailor, goat keeping etc. (Table 4). The percentage of farmers engaged in agriculture observed in present investigation was comparable with the results of Kulkarni et.al. (2013) who noticed 87.91 per cent of the respondents were engaged in agriculture. District-wise study revealed that percentage of agriculture labour was highest in Chandrapur district (29.87) and in Gadchiroli and Gondia districts it was at par (97.32 & 95.82). The percentage of agriculture labors in the study area was noticed to be on higher side compared with the results noticed in Dangi and Khillar cattle survey

**Table-5:** Land holding (acres) per family in Kathani cattle survey area

S N	Land holding group	District			Total	Average
		Chandrapur	Gadchiroli	Gondia		
1	Landless	1112 (28.48)	341 (14.97)	975 (27.33)	2428 (24.90)	Nil
2	5 & Below	2359 (60.43)	1763 (77.39)	2378 (66.65)	6500 (66.67)	$2.47 \pm 0.02$
3	> 5 to <10	321 (8.22)	142 (6.23)	159 (4.46)	622 (6.38)	$7.75 \pm 0.06$
4	>10 to <20	84 (2.15)	21 (0.92)	38 (1.07)	143 (1.47)	$14.99 \pm 0.28$
5	>20	28 (0.72)	11 (0.48)	18 (0.50)	57 (0.56)	$36.19 \pm 2.09$
	Total land holders	2792 (71.52)	1937 (85.03)	2593 (72.67)	7233 (75.10)	$3.42 \pm 0.05$
	Total respondents	3904	2278	3568	9750	Nil
	Irrigated land	770 (24.62)	361 (17.81)	678 (24.84)	1809 (18.55)	$3.42 \pm 0.10$
	Non irrigated land	2357 (75.38)	1666 (82.19)	2051 (75.16)	6074 (62.30)	$3.11 \pm 0.05$

Figures in parenthesis indicate percentage of respondents

area (Gokhale, 2003 & 2006). It was further noticed that none of the studied respondent opted for dairy as their main occupation this might be because of agro-climatic conditions, prevailing traditions and scope of dairy products were not favorable as compared to other districts in the state. The results obtained in present investigation is comparable with that of observations reported by Prem Chand et.al. (2018) in nearby triable Chhattisgarh state who noticed 80 per cent farmers were agriculturists and adopting predominantly monoculture of paddy due to seasonality of crop enterprises and lack of irrigation facilities.

*Per family land holding:* The mean land holding per respondent in survey area was observed to be  $3.42 \pm 0.05$  acres (Table-5), which was comparable to that of Dangi cattle owners ( $3.63 \pm 0.04$  acres) reported by Gokhale, 2003. In the surveyed area 75.10 per cent respondents were landholders and remaining 24.90 per cent landless. The percentage of landless farmers noticed here was less in comparison with Dangi cattle owners (33.22%) observed by Gokhale, 2003. Among the land holders two third farmers (66.67%) owned land up to 5 acres, 6.38 per cent farmers had 5 to 10 acres land, 1.47 per cent were owners of 10 to 20 acres and less than one per cent (0.56) were big landlords owned more than 20 acres of land (average 36.19). District-wise distribution of land holders showed that big landlords having land more than 20 acres were more in Chandrapur (0.72%) whereas small land holders (5 acres & below) were highest in Gadchiroli district (77.39%). Average irrigated and unirrigated land was noticed to be at par (3.42 & 3.11 acres) per family. The percentage of land holders having irrigation facility was lowest in Gadchiroli district (17.81) compared to that in Chandrapur (24.62) and Gondia district (24.84). It was further noticed that farmers in Gadchiroli districts were depends mostly on rain compared with other two districts. The findings reported by Dhama et.al.(2017) who observed 23.89 per cent landless farmers in triable and non-triable areas of middle Gujarat and the low level of irrigation facility and agriculture practices as observed in tribal area were due to undulating and

hilly topography of the region resembled with the existing results.

*Age and sex-wise distribution of Kathani cattle:* Age group and sex-wise distribution of Kathani cattle in survey area revealed that, 62.53 per cent animals were breed-able (3 years & above), 23.19 per cent were young stock (1 to 3 years), while 14.27 per cent were calves below 1 year (Table-6). The results recorded in present study collaborated with that of Khillar breed in Western Maharashtra, which specified 65.45 per cent breed-able population, 20.75 per cent young stock and 13.81 per cent calves below one year (Gokhale, 2006). The breed-able population was highest (68.95%) in Gadchiroli district while in Chandrapur and Gondia districts it was at par (59.92 & 59.01%). The mean male to female ratio in the age group of calves below one year, young stock and adult animals was observed to be 1:0.96, 1:1.38 and 1:0.77, respectively. Close male to female ratio for almost all age groups of animals and especially for breed-able populations indicated that natural service is more common and there is no shortage of breeding bulls for breeding purposes in all the three districts studied, although no systematic breeding is being followed due to free grazing practices being followed since ancient times owing to having more forest area and open land after harvest of paddy the sole crop being cultivated in Kharip season on large scale.

*Utility pattern of Kathani cattle:* The study based on farmers' perceptions revealed that 89.14 per cent of



**Table 6:** Age and sex-wise distribution of Kathani cattle in survey area

District / Age group	Below 1 Year		1 - 3 Years		3 Year & Above					
	Male	Female	Male	Female	Male			Female		
					Breeding	Breeding & work	Work only	In milk	Dry	Heifer
<b>Chandrapur</b>	1607	1606	1960	2876	456	654	5850	2356	1926	790
Total	3213		4836		6960			5072		
% distribution	50.02	49.98	40.53	59.47	6.55	9.40	84.05	46.45	37.97	15.58
M: F ratio	1:1		1:1.47		1:0.73					
Age wise % distribution	16.00		24.08		34.66			25.26		
<i>Gadchiroli</i>	967	881	1754	1513	987	1994	4131	2190	1395	665
Total	1848		3267		7112			4250		
% distribution	52.33	47.67	53.69	46.31	13.88	28.04	58.08	51.53	32.82	15.65
M: F ratio	1:0.91		1:0.86		1:0.60					
Age wise % distribution	11.22		19.83		43.16			25.79		
<i>Gondia</i>	1193	1129	1330	2563	149	336	3721	2366	1195	1180
Total	2322		3893		4206			4741		
% distribution	51.38	48.62	34.16	65.84	3.54	7.99	88.47	49.91	25.21	24.89
M: F ratio	1:0.95		1:1.93		1:1.13					
Age wise % distribution	15.31		25.68		27.74			31.27		
Total	3767	3616	5044	6952	1592	2984	13702	6912	4516	2635

**Table 7:** Utility pattern of Kathani cattle in survey area

S N	Utility pattern	District			Total
		Chandrapur	Gadchiroli	Gondia	
1	For milk purpose	285 (7.30)	23 (1.01)	714 (20.01)	1022 (10.48)
2	Agri operations	3603 (92.29)	2245 (98.55)	2843 (79.68)	8691 (89.14)
3	Race and exhibition	2 (0.05)	6 (0.26)	8 (0.22)	16 (0.16)
4	Breeding purpose	14 (0.36)	4 (0.18)	3 (0.08)	21 (0.22)
	Total	3904	2278	3568	9750

Figures in parenthesis indicate percentage of respondents

Kathani cattle owners were mainly used these animals for agricultural operations, followed by milk production purpose mostly for home consumption (10.48%) and less than one per cent for race and breeding purpose (Table-7). The results obtained here were differed with the observations of Kulkarni et.al.(2013) who reported that 65.55 per cent Kathani animal holders were found keeping these animals for agriculture purposes, 26.48% for dual purpose (milk and draught), 6.68% for milk purpose especially for home consumption while 1.29% respondents reared these animals either race or breeding purpose. District-wise distribution of opinion in this respect was observed that in Gadchiroli district 98.55 per cent farmers were using these animals for agriculture work, followed by Chandrapur district farmers (92.29%) and Gondia district farmers (79.68%). Although these animals were mainly reared for draft purpose, the other purposes, for which the breed found useful was for exhibition & race in Gadchiroli (0.26%) and Gondia districts (0.22%). For breeding it was more used by farmers from Chandrapur and Gadchiroli districts (0.36 & 0.18%). More farmers from Gondia district (20.01%) used these animals for milk purpose

compared to farmers from other two districts. This might be due to availability of resources and market for such type of animals in adjoining areas.

*Benefits achieved from Kathani cattle:* Every cattle owner has his own motto behind rearing of animals and efforts were made to understand such sayings for which they were maintained these animals. 85.70 per cent owners narrated specific benefits they gained from maintaining Kathani cattle. The benefits gained broadly classified into ten and these were 1). Religious purpose 2). Quality manure for agriculture land 3). Fulfills household needs as and when arises by animal sale 4). Milk for home consumption 5). Bullocks for draft purpose 6). Help to maintain clean environment 7). Disease resistance more and no frequent illness 8). Very good draft-ability of agriculture work 9). Less requirement of feed and fodder and 10). Minimum maintenance cost. It was revealed that 43.49 per cent owners reaped more than three benefits, the percentage of farmers who gained two benefits was 21.71 and 10.55 per cent farmers achieved four and more benefits (Table 8). The percentage of farmers who narrated single benefit was less than ten per cent (9.95). District-wise comparison revealed that 68.02 per cent

**Table 8:** Benefits achieved from Kathani cattle in survey area

S N	Benefits achieved	District			Total
		Chandrapur	Gadchiroli	Gondia	
1	Non respondents	825 (21.13)	439 (19.27)	130 (3.64)	1394 (14.30)
2	Single benefit	264 (6.76)	473 (20.76)	233 (6.53)	970 (9.95)
3	Two benefits	751 (19.24)	946 (41.53)	420 (11.77)	2117 (21.71)
4	Three benefits	1397 (35.78)	416 (18.26)	2427 (68.02)	4240 (43.49)
5	Four & more benefits	667 (17.09)	4 (0.18)	358 (10.03)	1029 (10.55)
	Total	3904	2278	3568	9750

Figures in parenthesis indicate percentage of respondents

**Table 9:** Difficulties faced while maintaining Kathani cattle in survey area

S N	Benefits achieved	District			Total
		Chandrapur	Gadchiroli	Gondia	
1	Single reason	15 (0.38)	774 (33.98)	10 (0.28)	799 (8.19)
2	Two reasons	280 (7.17)	517 (22.70)	687 (19.25)	1484 (15.22)
3	Three reasons	73 (1.87)	45 (1.98)	445 (12.47)	563 (5.77)
4	Four reasons	342 (8.76)	70 (16.24)	437 (12.25)	1149 (11.78)
5	Five & more	3194 (81.81)	572 (25.11)	1989 (55.75)	5755 (59.03)
	Total	3904	2278	3568	9750

Figures in parenthesis indicate percentage of respondents

farmers from Gondia district achieved three benefits, In Gadchiroli 41.53 per cent owners gained two benefits and 35.78 per cent farmers from Chandrapur district derived three benefits by maintaining Kathani cattle.

*Difficulties faced against maintaining Kathani cattle:*

It is known fact that every business has somewhat difficulties and considering Kathani cattle rearing we tried to undertake participants' constraints while maintaining these animals. Almost all the farmers under survey narrated the difficulties they were facing and broadly these were 1). Insufficient availability of land for animal grazing 2). Paucity of good quality semen and bull for breeding 3). For breeding the animals lack of nearby facility 4). Costlier breeding services 5). Shortage of fodder especially in summer season 6). Not getting remunerative price for animal sale 7). Less productivity of animals 8). Fear of becoming pray for wild animals during grazing in forests 9). Difficulty in getting animal herder (Gayaki) for grazing. All the farmers narrated either single or multiple reasons

and district-wise respondents were grouped in following Table-9. It was observed that more than half (59.03%) respondents had narrated five and more difficulties, followed by two difficulties (15.22%), three difficulties (11.78%) and four difficulties (5.77%). The percentage of owners giving single reason was less than ten per cent (8.19). District-wise study showed that farmers from Chandrapur (81.81%) were facing more difficulties while maintaining Kathani cattle, followed by Gondia (55.75%) and Gadchiroli district (25.11%) famers. The observations noticed by Prasad et.al. (2017) in Wayanad district of Karala state agreed with the existing results, they reported that major constraints faced by farmers was low price offered for milk, frequent disease outbreaks, mastitis and availability of fodder.

*Expectations of Kathani cattle owners:* Along with benefits achieved and difficulties faced by Kathani cattle owners, tried to understand the expectations for betterment of these animals in future. Multiple expectations were given by the farmers and they

**Table-10:** Suggestions / expectations of Kathani cattle owners in survey

S N	Expectations	District			Total
		Chandrapur	Gadchiroli	Gondia	
1	Non respondents	1260 (32.37)	1115 (48.95)	317 (8.88)	2692 (27.61)
2	Sufficient feed and fodder	1117 (28.61)	85 (3.73)	1220 4.19)	2422 (24.84)
3	Quality bull and semen	206 (5.28)	499 (21.91)	160 (4.48)	865 (8.87)
4	Some type of incentives	312 (7.99)	107 (4.70)	64 (1.79)	483 (4.95)
5	Milk and animals sale facility	1001 (25.64)	187 (8.21)	1491 41.79)	2679 (27.48)
6	Forest area for grazing	8 (0.20)	285 (12.51)	316 (8.86)	609 (6.25)
	Total	3904	2278	3568	9750

Figures in parenthesis indicate percentage of respondents

were clubbed into major groups in Table-10. The results indicated that more than one fourth per cent (27.61) owners were unable to explain any expectations. Among the owners who responded, the highest owners (27.48%) expressed market facility for milk and animals sale, followed by 24.84 per cent farmers expected sufficient feed and fodder, 8.87 per cent owners demanded good quality bulls and their semen availability for breeding the animals, 6.25 per cent farmers expected more availability of grazing land in forest areas, 4.95 per cent owners expected some type of incentives like vaccination, deworming, animal health care, supply of mineral mixture, help for animal shed constructions, health supplements to the animals etc. District-wise study showed that demand for sufficient feed and fodder was from Gondia district farmers (34.19%), availability of good quality bulls and their semen availability expectations were from Gadchiroli district (21.91%) farmers, demand of incentives was more from Chandrapur district ((7.99%) farmers, market facility for milk and animal sale expectations was more from Gondia district (41.79%) farmers and availability of more area for grazing the animals in forests major demand from Gadchiroli district (12.51%) farmers which seems logical as forest cover area is more in Gadchiroli district compared with other two districts..

#### CONCLUSION

Socio-economic survey involving 9,750 farmers from 118 randomly selected villages distributed in thirteen tehsils of three districts (Chandrapur, Gadchiroli and Gondia) of Vidarbha region in Eastern Maharashtra was carried out during December 2017 to May 2018 to study the status of Kathani cattle owners. The results indicated that all farmers were found keeping 51,720 Kathani animals with an average herd size of 5.30 per family for different purposes. Nearly 99.85 per cent respondents were involved in agriculture farming and it's labor however, a small fraction of less than one per cent (0.15) engaged in business like repairing, barber, cow rakhwaldari, chaprashi, tailor, goat keeping etc. 75.10 per cent farmers were landholders owning

average land  $3.42 \pm 0.05$  acres and 24.90 per cent landless. Regarding animal status it was noticed that 62.53 per cent animals were breed-able, 23.19 per cent young stock, while 14.27 per cent calves below one year. The study also revealed that 89.14 per cent Kathani cattle owners were mainly used these animals for agricultural operations and nearly 10.48 per cent of farmers also considered these animals fit them for milk production, mainly for home consumption.

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#### REFERENCES

- Bhinchhar BK, Paswan VK, Saroj, Yadav SP and Singh P. 2017. Characterization of Gangatiri cattle breed in Gangatic plains of Eastern Uttar Pradesh, India. *Indian Journal of Animal Research* 51 (6): 988-992.
- Dhami AJ, Parmar SC, Hadiya KK, Patel JA and Parmar CP. 2017. Dairy husbandry practices and problems of dairy farmers of tribal and non-tribal areas of Middle Gujarat. *Indian Journal of Dairy Science* 70(3): 351-356.
- Gokhale SB. 2003. Final report of network project on Animal Genetic Resources for Survey, Evaluation and Characterization of Dangi cattle. BAIF Development Research Foundation, Pune (MS).
- Gokhale SB. 2006. Final report of network project on Animal Genetic Resources for Survey, Evaluation and Characterization of Khillar cattle. BAIF Development Research Foundation, Pune (MS).
- Kulkarni S, Bhagat RL, Pande AB and Gokhale SB. 2013. Management and physical features of tribal Kathani cattle of Vidarbha region

- in Maharashtra state. *Indian Journal of Animal Sciences* 83 (6): 625–627.
- Mooventhan P, Kadian KS, Senthil Kumar R, Manimaran A and Sakthivel Selvan A. 2016. Tribal dairy farming status in the Northern Hills Zone of Chhattisgarh state, India - A survey research. *Asian Journal of Dairy and Food Research* 35 (4): 278-282.
- Prasad Kotresh, Savale Siddhartha, Mahantesh MT, Pavan M, Barman Deepandita and Abraham J. 2017. Socio-Economic Profile and Constraints Faced By Dairy Farmers of Wayanad District, India. *International Journal of Current Microbiology and Applied Science* 6 (6): 870-874.
- Prem Chand, Sirohi Smita, Saxena Raka and Mishra Anupam (2018). How profitable is dairying in tribal Chhattisgarh? *Indian Journal of Animal Sciences* 88 (6): 749–754.
- Singh PK and Sharma Arjava. 2016. Phenotypic characterization and documentation of animal genetic resources in India: A review. *Indian Journal of Animal Sciences* 86 (12): 1352–1365.
- Singh PK, Singh Gurmej, Pundir RK, Patil GR, Mitkari KR, Mukesh M, Sodhi Monika and Prakash B. 2006. A monograph on Cattle Genetic Resources of India: Deoni. National Bureau of Animal Genetic Resources, Karnal.
- Snedecor, WG and Cochran, WG. 1967. *Statistical Methods*. 6th edition. Oxford and IBH Publishing Co. Calcutta