

Trends of Livestock Population in India and Gujarat

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1. INTRODUCTION:

Majority of working population in India are engaged in agriculture as well as allied activities field. The livestock population is an important allied activity of agriculture in the world particularly agrarian based countries including India. The co operative societies have played a significant role in many countries of the world including India. This stock is providing important commodities like milk, meat, leathers and animal related services for human beings. Among these commodities, milk is an important food in the human basket.

In the world total 13 types of major animals are reported viz., goat & sheep, cattle, pigs, geese guinea, buffalos, beehives, horses, ass, camels, other rodents, mules and turkeys. Each type of animal wise and triennia ending TE 2003, 2006 and 2009 data reveal that Goat & Sheep population has remained the highest around 38 percent whereas Turkeys animals population as lowest of 01 percent consistently during all the TE 2003, 2006 and 2009. Total livestock population of the world in TE 2003 was 4676.12 million which increased to 5020.74 millions in TE 2009.

The animal husbandry work is an adjoining activity of agricultural sector which provide the additional income or assistance to the farming families of rural areas, particularly in slack summer season for livelihood. It is necessary to study animal related statistics. Therefore, livestock census wise data at all India level are presented in table 1. The total livestock population of India was 292.5 million in 1951 which increased to 525.35 million in year 2001. So nearly 80 percent animal population has increased during a period from 1951 to 2001. But this aggregate growth of total livestock population was found to vary significantly across different 10 types of animals during the same period. In this context, the important observations derived from Table 1 and 2 are detailed here under:

(1) Of the ten different types of animals cattle, goat, Buffalo and sheep put together constitute approximately 98 per cent of the total livestock population in India throughout a period from 1951 to 2001. so this four types of animals represent livestock population of India since the other six types of animals populations is quite meager in comparison with four major types of animals.

(2) The population of all the other six types of animals viz of pigs, camels, donkey, horses/ponies, mules and yanks put together constitute 2 to 3 per cent of total Indian livestock population throughout a period from 1951 to 2001. Out of these other six types of animals only four types of animals viz., pigs, camels, mules and yanks experienced a rise for certain periods whereas the remaining two (Donkey and Horses/ponies) experienced a fall and stagnancy for certain periods under study. Among these six types of animals pigs are found to have increased the highest (2.7 per cent) and mule's experienced the lowest increase (0.1 per cent) between the periods from 1951 to 2001.

(3) The population of cattle, goat and Buffalo is found to have increased consistently during a period from 1951 to 2001. However, the percentage growth of all these animals to total livestock population is found to vary significantly across different census years. The cattle and buffalo population experienced both an increase and a decrease in their respective share to total livestock population where as the goat population experienced an increase, a decrease and a state of stagnant between certain periods during the period of analysis from 1951 to 2001.

(4) Although the cattle population experienced both an increase and a decrease in its share to total livestock population during different census under study, its growth rate is found to have increased consistently during different periods under analysis. The growth rate of goat and buffalo population was also found to have increased during all the periods under analysis excepting the period from 1992 to 2001.

(5) The sheep population is found to have consistently increased from 1951 to 1966 but declined from 1966 to 1972 then consistently increased from 1972 to 1982. Again it decreased in the period 1982 to 1987 and then increased from 1987 to 2001. The share of sheep population to total livestock population is found to have increased in the periods from 1961 to 1966, 1977 to 1982 and 1982 to 1987 but declined in the periods from 1951 to 1961, 1966 to 1977, 1987 to 1992 and 1992 to 1977 and remained stagnant in the period 1997 to 2001. The growth rate of sheep population is found to have increased during all the periods under analysis excepting the period from 1992 to 2001.

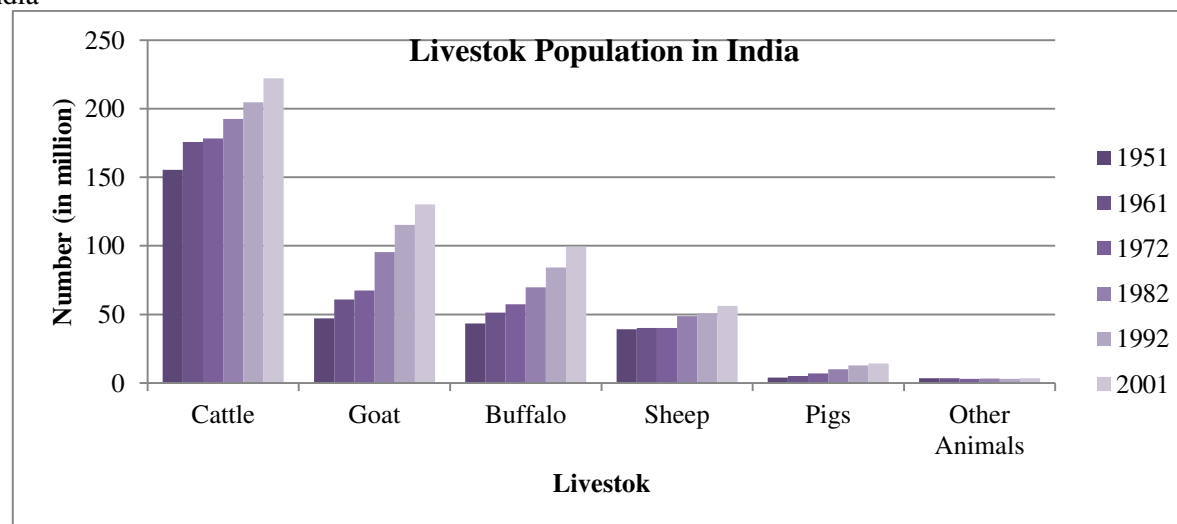
(6) Overall observation since 1951-2001 meanwhile 50 year long times it shown that India's total livestock has been increased. In 1951 total livestock was 292.5 million numbers will increased by 525.4 million numbers by last 50 years duration. If we are consider it by percentage last 50 years duration total livestock has been increased 55.68 percentages. In this consent livestock take important in the field like cattle, buffalo, pigs, sheep has been increased. For the milk business purpose at particular cattle and buffaloes are important. That will be made sound developing business of milk purpose.

Table 1: Livestock Population at All India during 1951- 2001 (In million Numbers)

Sr. No.	Census Year- Name of Animals	1951		1956		1961		1966		1972		1977		1982		1987		1992		1997		2000		2001	
		Popu- lation	Per cent	Popu- lation	Per cent	Popu- lation	Per cent	Popu- lation	Per cent	Popu- lation	Per cent	Popu- lation	Per cent	Popu- lation	Per cent	Popu- lation	Per cent	Popu- lation	Per cent	Popu- lation	Per cent	Popu- lation	Per cent	Popu- lation	Per cent
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
1	Cattle	155.3	53.1	158.7	51.8	175.6	52.2	176.2	51.2	178.3	50.5	180.0	48.6	192.5	45.9	199.7	44.9	204.6	43.5	210.1	42.2	218.3	42.1	222.2	42.3
2	Goat	47.2	16.1	55.4	18.1	60.9	18.1	64.6	18.8	67.5	19.1	75.6	20.4	95.3	22.7	110.2	24.8	115.3	24.5	125.4	25.2	129.7	25.0	130.1	24.8
3	Buffalo	43.4	14.8	44.9	14.6	51.2	15.2	53.0	15.4	57.4	16.3	62.0	16.8	69.8	16.6	76.0	17.1	84.2	17.9	92.3	18.5	97.4	18.8	99.3	18.9
4	Sheep	39.1	13.4	39.3	12.8	40.2	12.0	42.0	12.2	40.0	11.3	41.0	11.1	48.8	11.6	45.7	10.3	50.8	10.8	53.2	10.7	55.4	10.7	56.2	10.7
5	Pigs	4.0	1.4	4.9	1.6	5.2	1.6	5.0	1.5	6.9	2.0	7.6	2.1	10.1	2.4	10.6	2.4	12.8	2.7	13.1	2.6	13.9	2.7	14.2	2.7
6	Camels	0.6	0.2	0.8	0.3	0.9	0.3	1.0	0.3	1.1	0.3	1.1	0.3	1.1	0.3	1.0	0.2	1.0	0.2	1.1	0.2	1.1	0.2	1.1	0.2
7	Donkey	1.3	0.4	1.1	0.4	1.1	0.3	1.1	0.3	1.0	0.3	1.0	0.3	1.0	0.2	1.0	0.2	1.0	0.2	1.0	0.2	1.0	0.2	1.0	0.2
8	Horses/ponies	1.5	0.5	1.5	0.5	1.3	0.4	1.1	0.3	0.9	0.3	0.9	0.2	0.9	0.2	0.8	0.2	0.8	0.2	0.9	0.2	0.9	0.2	0.9	0.2
9	Mules	0.1	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.9	0.2	0.1	0.0	0.2	0.0	0.2	0.0	0.0	0.0	0.3	0.1	0.3	0.1
10	Yanks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.7	0.1	0.9	0.2	0.1	0.0
13	All Livestock	292.5	100	306.6	100	336.5	100	344.1	100	353.2	100	370.2	100	419.7	100	445.3	100	470.8	100	497.7	100	518.8	100	525.4	100

Source: Government of India (2002), Livestock Census,

Graph 1: Livestock Population in India



Source: Government of India (2002), Livestock Census

Table 2: Annual Compound Growth Rate (%) of Livestock in India

Sr. No.	Name of Animals	1951 to 1972	1972 to 1992	1992 to 2001	1951 to 2001
1	2	3	4	5	6
1	Cattle	0.63	0.66	0.83	0.70
2	Goat	1.64	2.58	1.21	2.01
3	Buffalo	1.28	1.84	1.66	1.64
4	Sheep	0.10	1.14	1.02	0.71
5	Pigs	2.51	2.99	1.04	2.52
6	Camels	2.79	-0.45	0.96	1.20
7	Donkey	-1.19	0.00	0.00	-0.51
8	Horses/ponies	-2.30	-0.56	1.18	-1.00
9	Mules	0.00	3.36	4.14	2.18
10	Yanks	0.00	0.00	0.00	0.00
13	All Livestock	0.86	1.38	1.10	1.16

Source: Calculated on the basis of data available from the Government of India (2002) Livestock Census,

2. LIVESTOCK POPULATION IN GUJARAT:

The livestock census wise data at state level in Gujarat are presented in Table 3. The total livestock population of Gujarat was 11977 thousand in 1951 which increased to 23795 thousand in year 2007. So nearly animal population has become double during a period from 1951 to 2007.

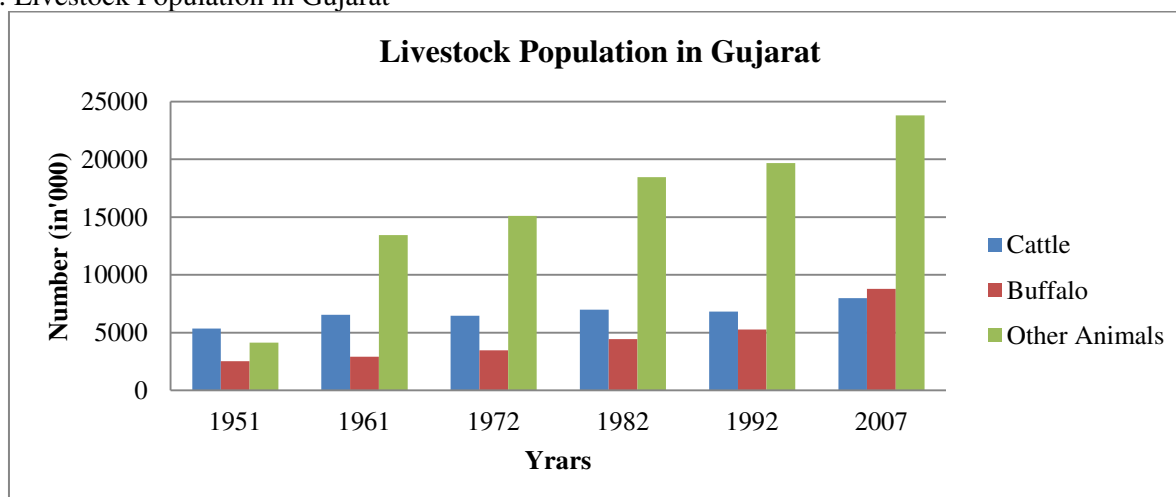
Table 3: Category wise Livestock Population their Percentage Change over previous period as in Gujarat (In '000)

Sr. No	Year	Total Cattle	Total Buffalo	Sheep	Goat	Others Livestock*	Total Livestock
1	2	3	4	5	6	7	8
1	1951	5345 (44.63)	2514 (20.99)	1574 (13.14)	2326 (19.42)	218 (1.82)	11977 (100.00)
2	1961	6537 (48.66)	2917 (21.71)	1481 (11.02)	2223 (16.55)	276 (2.05)	13434 (100.00)
3	1972	6457 (42.77)	3468 (22.97)	1722 (11.41)	3210 (21.26)	241 (1.60)	15098 (100.00)
4	1982	6994 (37.93)	4443 (24.09)	2357 (12.78)	3300 (17.90)	1346 (7.30)	18440 (100.00)
5	1992	6803 (34.58)	5268 (26.78)	2027 (10.83)	4241 (21.56)	1333 (6.78)	19672 (100.00)
6	2007	7976 (33.52)	8774 (36.87)	2002 (8.41)	4640 (19.50)	403 (1.69)	23795 (100.00)

* Other Livestock Includes Horses, Ponies, Mules, Donkeys, Camel, Dog, Pig

Source: Govt. of Gujarat (2007 & back issues), Livestock Census Report

Graph 2: Livestock Population in Gujarat



Source: Govt. of Gujarat (2007 & back issues), Livestock Census Report

But this aggregate growth of total livestock population was found to vary significantly across different types of animals during the same period. In this context, the important observations derived from Table 4, 5, and 6 are detailed here under:

Table: 4: Breedable cattle Population their Percentage Change over previous period As in Gujarat
(In '000)

Sr. No	Year	Breedable Cattle			Total Breedable Cattle	Non Breedable Cattle	Total Cattle	Ratio of 6 to 7
		In-Milk	Dry	NCEO				
1	2	3	4	5	6	7	8	9
1	1951	845 (55.12)	548 (35.75)	140 (09.13)	(28.68) 1533 (100.00)	(71.32) 3812	(100.00) 5345	1.0:0.40
2	1961	805 (44.18)	873 (47.91)	144 (07.90)	(27.87) 1822 (100.00)	(72.13) 4715	(100.00) 6537	1.0:0.39
3	1972	903 (50.25)	744 (41.40)	150 (08.35)	(27.83) 1797 (100.00)	(72.17) 4660	(100.00) 6457	1.0:0.39
4	1982	1072 (54.78)	752 (38.43)	133 (06.80)	(27.98) 1957 (100.00)	(72.02) 5037	(100.00) 6994	1.0:0.39
5	1992	1315 (56.32)	883 (37.82)	137 (05.87)	(34.32) 2335 (100.00)	(65.68) 4468	(100.00) 6803	1.0:0.52
6	2007	1732 (61.29)	797 (28.20)	297 (10.51)	(35.43) 2826 (100.00)	(64.57) 5150	(100.00) 7976	1.0:0.55

NCEO = Non Calved Even Once Source: Govt. of Gujarat (2007 & back issues), Livestock Census Report,

- (1) Of the four different types of animals, cattle, buffalo, sheep and goat put together constitute approximately 93 to 98 per cent of the total livestock population in Gujarat throughout a period from 1951 to 2007.
- (2) The population of buffalo is found to have increased consistently during a period from 1951 to 2007 but cattle; goat and sheep have increased during a period from 1950 to 1961 but then after they decreased with fluctuation during a period from 1972 to 2007. However, the percentage growth of all these animals to total livestock population is found to vary significantly across different census years.
- (3) Although the category wise population of cattle experienced both an increase and a decrease in percentage in the census year as compared to previous census year, among the cattle population, the in-milk cow has constantly increased except 1951 census.
- (4) The sheep population is found to have decreased from 1951 to 1961 but then after consistently increased in 1961 to 1982. During 1992 to 2007 it has significantly decreased. The goat population is found to have experienced fluctuation from 1951 to 2007 census.
- (5) The total livestock population is found to have consistently increased during all the census year from 1951 to 2007.

Table: 5: Breedable Buffaloes Population their % Change over previous period As in Gujarat
(In '000)

Sr. No	Year	Breedable Buffaloes			Total Breedable Buffaloes	Non Breedable Buffaloes	Total Buffaloes	Ratio of 6 to 7
		In-Milk	Dry	NCEO				
1	2	3	4	5	6	7	8	9
1	1951	987 (64.17)	421 (27.37)	130 (08.45)	(61.18) 1538 (100.00)	(38.82) 976	(100.00) 2514	1.0:1.58
2	1961	899 (53.38)	655 (38.90)	130 (07.72)	(57.73) 1684 (100.00)	(42.27) 1233	(100.00) 2917	1.0:1.37

3	1972	1095 (53.68)	779 (38.19)	166 (08.14)	(58.82) 2040 (100.00)	(41.18) 1428	(100.00) 3468	1.0:1.43
4	1982	1620 (63.33)	790 (30.88)	148 (05.79)	(57.57) 2558 (100.00)	(42.43) 1885	(100.00) 4443	1.0:1.36
5	1992	2085 (66.23)	899 (28.56)	164 (05.21)	(59.76) 3148 (100.00)	(40.24) 2120	(100.00) 5268	1.0:1.48
6	2007	3040 (62.95)	1350 (27.96)	439 (09.09)	(55.04) 4829 (100.00)	(44.96) 3945	(100.00) 8774	1.0:1.22

NCEO = Non Calved Even Once, Source: Govt. of Gujarat (2007 & back issues), Livestock Census Report,

- (6) The sheep population is found to have decreased from 1951 to 1961 but then after consistently increased in 1961 to 1982. During 1992 to 2007 it has significantly decreased. The goat population is found to have experienced fluctuation from 1951 to 2007 census.
- (7) The total livestock population is found to have consistently increased during all the census year from 1951 to 2007.
- (8) The annual compound growth rate in respect of breedable cattle of in-milk, dry and total cattle worked out to 1.27 percent, 0.66 percent and 0.70 percent for the period of 1951 to 2007, respectively. In case of breedable buffalo, the percentage growth rate of in-milk, dry and total worked out to 1.99 percent, 2.07 percent and 2.22 percent during 1951 to 2007 respectively. During same period, the sheep and goat population has increased with 0.42 percent and 1.22 percent annually and the total livestock population growth rate was 1.21 percent.

Table 6: Annual Compound Growth Rate of Livestock in Gujarat

Sr. No.	Period	Breedable Cattle				Breedable Buffaloes				Sheep	Goat	Total Livestock
		In-milk	Dry	NCEO	Total	In-milk	Dry	NCEO	Total			
1	1951 to 1972	1.27	0.66	1.33	0.70	1.99	2.07	2.16	2.22	0.42	1.22	1.21
2	1972 to 1992	1.72	-0.39	-0.41	0.24	2.97	0.65	-0.06	1.92	0.74	1.27	1.21
3	1992 to 2007	1.74	0.97	4.95	1.00	2.38	2.57	6.35	3.24	-0.08	0.56	1.20
4	1951 to 2007	1.27	0.66	1.33	0.70	1.99	2.07	2.16	2.22	0.42	1.22	1.21

Source: Govt. of Gujarat (2007 & back issues), Livestock Census Report,

The annual compound growth rate in respect of breedable cattle of in-milk, dry and total cattle worked out to 1.27 percent, 0.66 percent and 0.70 percent for the period of 1951 to 2007, respectively. In case of breedable buffalo, the percentage growth rate of in-milk, dry and total worked out to 1.99 percent, 2.07 percent and 2.22 percent during 1951 to 2007 respectively. During same period, the sheep and goat population has increased with 0.42 percent and 1.22 percent annually and the total livestock population growth rate was 1.21 percent.

3. SUMMARY AND CONCLUSIONS

The total livestock population of India was 292.5 million in 1951 which increased to 525.35 million in year 2001. So nearly 80 percent animal population has increased during a period from 1951 to 2001. But this aggregate growth of total livestock population was found to vary significantly across different types of animals during the same period. In this context, the two important findings are: (1) Of the ten types of animals cattle, goat, buffalo and sheep put together constituted approximately 98 per cent of the total livestock population in India. The population of cattle, goat and buffalo is found to have increased consistently during the same period. The cattle and buffalo population experienced both an increase and a decrease in their respective share to total livestock population. (2) Although the growth rate of cattle population is found to have increased consistently during different periods under analysis. The growth rate of goat and buffalo population was also found to have increased during all the periods under analysis excepting the period from 1992 to 2001.

The total livestock population of Gujarat was 11977 thousand in 1951 which increased to 23795 thousand in year 2007. So nearly animal population has become double during a period from 1951 to 2007. But this aggregate growth of total livestock population was found to vary significantly across different types of animals during the same period. In this context, the three important observations are: (1) The four kinds of animals i.e. cattle, buffalo, sheep and goat put together constituted approximately 93 to 98 per cent of the total livestock population in Gujarat. The population of buffalo is found to have increased consistently during a period from 1951 to 2007 but cattle, goat and

sheep has increased during a period from 1950 to 1961 but then after experienced fluctuation during a period from 1972 to 2007. However, the percentage growth of all these animals to total livestock population is found to vary significantly across different census years. (2) Although the category wise population of cattle experienced both an increase and a decrease in percentage in the census year as compared to previous census year, among the cattle population, the in-milk cow has constantly increased except 1951 census. The total livestock population is found to have consistently increased during the census year from 1951 to 2007. (3) The annual compound growth rate of in-milk, dry and total cattle worked out 1.27 percent, 0.66 percent and 0.70 percent for the period of 1951 to 2007 respectively. In case of buffalo, the percentage growth rate of in-milk, dry and total was 1.99 percent, 2.07 percent and 2.22 percent during 1951 to 2007 respectively. During the same period, the sheep and goat population has increased with 0.42 percent and 1.22 percent annually. The total livestock population growth rate was 1.21 percent during 1951 to 2007.

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