Current Agriculture Research Journal Vol. **4**(1), 108-113 (2016)

Performance of Livestock Sector in India (With Reference to Bovine Population)

B. SREENIVASA REDDY[1] and P. RAMAPPA[2]

Post Doctoral Fellow Dept. of Economics Sri Krishna Devaraya University,
Ananthapuramu- 515003 Andhra Pradesh, India.
Department of Economics Sri Krishna Devaraya University,
Ananthapuramu- 515003 Andhra Pradesh, India.

http://dx.doi.org/10.12944/CARJ.4.1.12

(Received: April 18, 2016; Accepted: May 12, 2016)

ABSTRACT

Most of the farmers in India depend on agriculture and allied activities. The dairying has been playing a major role by providing livelihoods to the rural people. The objectives of the study are: to know the growth in the bovine population in India, analyse the trends in milk production and per capita availability of milk and analyse the share of livestock production in GDP. The study reveals that the percentage share of cows declined and that of buffaloes significantly increased. It is due to high price for buffalo milk. It is observed that the percentage of CB cattle in total cattle increased and that of indigenous cattle population declined. The per capita availability of milk increased from 130 grams per day in 1950 to 299 grams in 2012. The share of livestock sector in agriculture GDP also increased from 13.88% in 1980-81 to 29.20% in 2012-13. Among the top ten countries in the world India is in 2nd position in cow milk production. It is also evident that among the top ten countries India is in 1st position in buffalo milk production. It is observed that the milk yield per head is low in India. Hence there is need to raise the milk yield in order to enhance the per capita availability of milk and to meet the increasing demand. Measures must also be taken to protect the cattle and to increase their number.

Keywords: Bovines, Crossbreed, GDP, Livestock, Per Capita Availability, Milk Production.

INTRODUCTION

Agricultural sector plays a key role in the development of Indian economy. But most of the Indian farmers depend on monsoons. The evidence shows that frequent crop failures occur due to low rainfall and natural calamities. Most of the farmers in India depend on agriculture and allied activities. Among the allied activities the dairying has been playing a major role by providing livelihoods to the rural people. About 70% of rural households own livestock. Small and marginal farmers account for more than 60% of the total households.

Objectives of the study

1. To know the growth in the bovine population in India
2. To analyse the trends in milk production and per capita availability of milk
3. To analyse the share of livestock production in GDP
4. To know the world estimates of live stock population & production
5. To present the concluding remarks.

Data Base and Methodology

This study depends on Secondary data. The data relating to livestock, milk production, per capita

availability and agriculture & allied activities have been collected from Animal Husbandry department at Hyderabad, Reports of Centre for Economic and Social Studies (CESS), National Institute of Rural Development (NIRD), journals and other sources.

Census- Wise Livestock Population of India

Census- Wise Live stock population in India is shown in table 1. Here bovine population includes cattle and buffaloes. In 1951 there were 155.30 million (78%) cattle and 43.40 million (22%) buffaloes, by

Table-1 Census-Wise Livestock Population of India (Livestock in Millions)

Year	Cattle	Growth Over Previous census Year (%)	Buffaloes	Growth Over Previous census Year (%)	Total Bovines	Total Livestock	Growth Over Previous census Year (%)
1951	155.30	-	43.40				
	(78.15)		(21.84)	-	198.70	292.80	-
1956	158.70	2.18	44.90				
	(77.94)		(22.05)	3.45	203.60	306.60	4.71
1961	175.60	10.64	51.20	14.03	226.80	335.40	9.39
	(77.42)		(22.57)				
1966	176.20	0.34	53.00	3.51	229.20	344.10	2.59
	(76.87)		(23.12)				
1972	178.30	1.19	57.40	8.30	235.70	353.60	2.76
	(75.64)		(24.35)				
1977	180.00	0.95	62.00	8.01	242.00	369.00	4.35
	(74.88)		(25.61)	12.54	262.23	419.59	13.71
1982	192.45	6.91	69.78				
	(73.38)		(26.61)				
1987	199.69	3.76	75.97	8.87	275.66	444.29	5.88
	(72.44)		(27.55)				
1992	204.58	2.44	84.21	10.84	288.79	470.86	5.98
	(70.84)		(29.15)				
1997	198.88	-2.78	89.92	6.78	288.80	485.39	3.08
	(68.86)		(31.13)				
2003	185.18	-6.88	97.92	8.89	283.10	485.00	-0.08
	(65.41)		(34.58)				
2007	199.08	7.50	105.34	7.57	304.42	529.70	9.07
	(65.39)		(34.60)				
2012	190.90	-4.10	108.70	3.18	299.60	512.06	-3.33
	(63.71)		(36.28)				

Source: Dept. of Animal Husbandry, Dairying & Fisheries, Ministry of Agriculture Govt. of India.
Note:
1. Figures in Brackets are percentage to total Bovines.
2. Total Livestock Includes: Cattle, Buffaloes, horses, pigs, Donkeys, goats and sheep.
3. Bovines: Cattle, buffaloes.

2012 the population of cattle was 190.90 million (64%) and that of buffaloes was 108.70 million (34%). It means that the percentage share of cows declined and that of buffaloes significantly increased. It is also evident that the growth of cattle from one census year to another census year is fluctuating. The growth of cattle was negative in 1997 (-2.78%), 2003 (-6.88%) and 2012 (-4.10%). In the case of total livestock also the growth was negative in 2003 (-0.08%) and 2012 (3.33%). The population of buffaloes increased due to high price for buffalo milk and the farmers need not take special care to maintain buffaloes.

1. Figures in Brackets are percentage to total Bovines.
2. Total Livestock Includes: Cattle, Buffaloes, horses, pigs, Donkeys, goats and sheep.
3. Bovines: Cattle, buffaloes.

Category– Wise distribution of Bovine population

Category– Wise distribution of Bovine population is shown in table 2. The cattle population (Cross breed) increased from 33060 thousand in 2007 to 39732 thousand in 2012. In 2012 male cattle accounted for 15.0 percent of total cross breed cattle and that of female for 85.0 percent. About 93.0 percent of the total Cross breed cattle are in rural areas and only 7.0 percent are in urban areas. Of the total C.B female cattle the percentage of cattle in milk is estimated at 42.7 in 2012.

The population of indigenous cattle declined from 166015 thousand in 2007 to 157172 thousand in 2012 registering a negative growth. In 2012 in total indigenous cattle the share of male cattle was 41 percent while that of female is 59 percent. As high as 98 percent of the total indigenous cattle are in rural areas and the rest 2 percent in urban areas. It is observed that the female cattle in milk is low at 35.7 percent in 2012.

It is noticed that the percentage of CB cattle in total cattle increased from 16.60 in 2007 to 20.81 in 2012. But the percentage of indigenous cattle in total cattle population declined from 88.39 percent to 79.19 during the same period. The above statistics also reveal that the increase in total cattle population (CB + Indigenous) during 2007-2012 is insignificant (0.41 percent).

Milk Production and Per Capita Availability of Milk

Milk production and per capita availability of milk in India is shown in table 3. In 1950-51 the total milk production was 17 Million Tonnes (MTs). Human

Table 2: Category-Wise Distribution of Bovine Population in India (In Thousands)

Category		2007			2012		
		Total	of which the % of		Total	of which the % of	
			Rural	Urban		Rural	Urban
A.	Cross Breed Cattle						
1.	Total Male	6844	91.86	8.14	5971	93.22	6.78
2.	Total Female	26216	90.27	9.73	33760	92.63	7.37
3.	Of which Female in milk	10716	90.60	9.40	14305	92.71	7.29
I.	Total Cross Breed Cattle (1+2)	33060	90.60	9.40	39732	92.71	7.29
	B.Indigenous Cattle						
1.	Total Male	76779	97.67	2.33	61949	98.28	1.72
2.	Total Female	89236	95.65	4.35	89224	96.40	3.60
3.	Of which Female in milk	30687	94.99	5.01	29649	96.04	3.96
II.	Total Indigenous Cattle (1+2)	166015	96.58	3.42	151172	97.17	2.83
	Total Bovine (I+II)	199075	95.59	4.41	190904	96.24	3.76

Source: Dept. of Animal Husbandry, Dairying & Fisheries, Ministry of Agriculture, Govt. of India.

population was 359 million and per capita availability of milk was 130 grams per day. By 2000-01 the milk production increased to 80 Million Tonnes (MTs) and the human population rose to 1019 millions. While the per capita availability of milk was estimated at 217 grams per day. In 2012-13 the milk production was 132.4 Million Tonnes (MTs), the per capita availability of milk was 299 grams/day and the human population was 1212 million. The milk production increased by 7.78 times and human population by 3.38 times during 1950-51 to 2012-13.

Compound Annual Growth rates of Milk

Compound Annual Growth rates of Milk are shown in table-4. During the period from 1950-51 to 2012-13 the growth rate of milk fluctuated from year to year. Between 1950-51 and 1960-61 the growth rate was 1.64%, but during 1960-61 to 1973-74 the growth rate was 1.15%. Then it increased to 4.51% during 1973-74 to 1980-81. It further increased to 5.48% during 1980-81 to 1990-91. During 2010-11 to 2012-13 it was recorded at 4.25%. Thus the above analysis reveals that the milk production increased. But there was no steady growth.

Table 3: Milk Production and Per Capita Availability of Milk in India

Year	Milk Production (Million Tonnes)	Human Population (Millions)	Per Capita Availability of milk (grams Per day)
1950-51	17.0	359	130
	19.0	393	132
1955-5-56	(11.76)	(9.47)	(1.53)
1960-61	20.0	434	126
	(5.26)	(10.43)	(-4.54)
1968-69	21.2	518	112
	(6)	(19.35)	(-11.11)
1973-74	23.2	580	110
	(9.43)	(11.96)	(-1.78)
1980-81	31.6	679	128
	(36.20)	(17.06)	(16.36)
1985-86	44.0	755	160
	(4.4)	(11.19)	(25)
1990-91	53.9	839	176
	(22.5)	(11.12)	(10)
1995-96	66.2	928	195
	(22.82)	(10.60)	(10.79)
2000-01	80.6	1019	217
	(21.75)	(9.80)	(11.28)
2005-06	97.1	1106	241
	(20.47)	(8.53)	(11.05)
2010-11	121.8	1186	281
	(25.43)	(7.23)	(16.59)
2012-13	132.4	1212	299
	(8.70)	(2.19)	(6.40)

Source: State/ UT Animal Husbandry Departments
Note: 1.Figures in brackets shows the growth over the previous year.
2. UT: Union Territory.

Share of Agriculture & Allied activities and Livestock sector in GDP of India

The share of agriculture sector in GDP of India at constant prices from 1980-81 to 2012-13 is shown in table 5. Here agriculture sector includes agriculture, forestry& logging, fishing and livestock. It indicates that the share of agriculture sector showed a declining trend from 34.72% in 1980-81 to 11.84 in 2012-13. While the share of livestock sector to total GDP is fluctuating year to year. But the share of livestock sector in agriculture GDP increased from 13.88% in 1980-81 to 29.20% in 2012-13. Thus the share of agriculture sector in total GDP is declining while the share of livestock sector in agriculture GDP is increasing.

Table 5: Share of Agriculture & Allied Activities and Livestock Sector in GDP of India (Rs.in Billion)

Year	Total GDP	GDP of Agriculture and Allied Sector		GDP of Livestock Sector		
	Rs.	Rs.	% to Total GDP	Rs.	% to Total GDP	% to Agriculture GDP
At 1980-81 Prices						
1980-81	1224	425	34.72	59	4.82	13.88
1985-86	1566	499	31.86	87	5.56	17.43
1990-91	2123	610	28.73	122	5.75	20.00
At 1993-94 Prices						
1995-96	8996	2305	25.62	558	6.20	24.21
At 1999-00 Prices 2000-01	18643	4072	21.84	986	5.29	23.50
At 2004-05 Prices 2005-06	32531	5030	15.46	1268	3.90	25.20
2010-11	49370	6068	12.29	1703	3.45	28.07
2012-13	54829	6494	11.84	1896	3.46	29.20

Source: National Accounts Division, Central Statistical Office, M/O Statistics & Programme Implementation.
Note: GDP: Gross Domestic Product.

Table 4: Compound Annual Growth Rates of Livestock Product (Milk) (In %)

Year	Growth rate of Milk
1950-51 to 1960-61	1.64
1960-61 to 1973-74	1.15
1973-74 to 1980-81	4.51
1980-81 to 1990-91	5.48
1990-91 to 2000-01	4.11
2000-01 to 2010-11	4.22
2010-11 to 2012-13	4.25

Source: National Accounts Division, Central Statistical Office, M/O Statistics & Programme Implementation.

Comparison with world Estimates

In 2008-09 there were 207 countries in the world with 1347.473 millions of cattle. In the top ten countries in cow milk production India is in 2nd position. India's contribution to the world milk production declined from 13.02 percent in 2008-09 to 9.5 percent in 2011-12.

In 2008-09 there were 41 countries with 180.703 millions of buffaloes. In top 10 countries in buffalo milk production India is in 1st position.

Indonesia and Thailand are in 9th and 10th positions respectively. India's contribution to the world buffalo milk production declined from 54.56 percent in 2008-09 to 52 percent in 2011-12. However India is still in the 1st position. Srilanka and Turkey are in 9th and 10th positions respectively.

Despite India being the largest milk producer in the world, its yield continues to remain low at 1.1 tonnes per head during 2010-12. USA has the world's highest milk yield with 9.7 tonnes per head followed by European Union (6.6 tonnes per head) during the same period.

CONCLUSION

It is observed that the buffalo population is increasing. But the growth in cattle and total live stock was negative in 2012. The percentage of cross breed cattle is increasing while that of indigenous is declining slowly. In 2012 the percentage of male cattle in total indigenous cattle was high (41.0%) and the same in crossbreed cattle was low at 15.0%. The production of milk and per capita availability of milk increased significantly over a period of time. At the same time the share of live stock sector in Agriculture GDP showed increasing trend. The statistics reveal that India is the largest milk producer in the world. But the milk yield per head is low. Hence there is need to raise the milk yield in order to enhance the per capita availability of milk and to meet the increasing demand. Measures must be taken to protect the cattle and to increase their number.

REFERENCES

1. Bardhan.D, Y.P.S.Dabas and A. Kumar, "Role Performance and Scope of Indian Livestock sector in the new World order", *Agricultural Situation in India*, Vol.LXIV, No.**9**, December (2007).
2. Jignesh shah and Darshana Dave, "Regional Trends and Pattern in Milk Production and Drivers for future growth in Gujarat State", *Agricultural Economics Research Review*, Vol.**23**, July-December, pp. 295-302 (2010).
3. Parminder kour, Arjinder kour and menakshi Gupta, "India's dairy sector-current scenario of production and trade", *Indian Journal of Agricultural Economics*, Vol.**62**, No.3, July-September, (2007) .
4. Rajarajan.T.R, V.Sarvanakumar and Rajvirsingh, "Implications of Trade Liberalization on Indian Dairy Sector: An Empirical Analysis", *Indian Journal of Agricultural Economics*, Vol.**62**, No.3 (2007).
5. Smita Sirohi and Pranajit Bhowmik, "Dairy input Procurement and output Disposal system in South Tripura: Implications for Dairy Development", *Indian Journal of Agricultural Marketing*, **23** (2) (2009) .