

**GROWTH AND PERFORMANCE OF DAIRY SECTOR IN INDIA****M. S. Deshmukh**

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Abstract

Milk production is a very important element of the whole dairy chain. Dairy co-operatives, helped to create strong network and linkages in millions of rural households scattered across the country. Currently India contributes more than 16 percentage of the world's total milk production. India's milk output is estimated to be 133 million tonnes (GOI, 2012-13). There is sustained growth in the availability of milk for the burgeoning population of the country. The per capita availability of milk has also increased to a level of about 297 grams per day, which is higher than the world average and even more than 220 grams recommended by ICMR. The share of agriculture sector and livestock sector in total GDP of India has declined from 34.72% and 4.82% in 1980-81 to 15.18% and 3.92% in 2011-12 respectively. However the share of livestock sector in agricultural GDP of India has increased from 13.88% in 1980-81 to 25.85% in 2011-12. Moreover the compound growth rate of milk production in India was 4.16% during 1990-91 to 2012-13. The co-operative sector in India has emerged as one of the largest in the world and is playing an important role in socio-economic development of millions of rural families.

Key words : Growth, Performace, Dairy Sector

Indian dairy sector contributes the large share in agricultural gross domestic products. The co-operatives play an important role in animal husbandry and dairying sector, whose share in agricultural GDP of country has increased from 13.88% in 1980-81 to 25.85% in 2011-12. Dairy co-operatives, helped to create strong network and linkages in millions of rural households scattered across the country. The co-operative sector in India has emerged as one of the largest in the world and is playing an important role in socio-economic development of the country. Presently dairy sector of our country is contributing more than 16 percent of the world's total milk production. India's milk output is estimated to be 133 million tonnes (GOI, 2012-13). There is sustained growth in the availability of milk for the burgeoning population of the country. The per capita availability of milk has also increased to a level of about 297 gram per day. Present paper focuses on growth and performance of dairy sector in India and provides recommendations to meet future challenges. The results of the study indicate that 80 percent of the milk produced by the rural producer is handled by an unorganized sector and the remaining 20 percent is handled by an organized sector. It is found that the dairy co-operatives play a vital role in alleviating rural poverty. Moreover Milk quality, product development, infrastructure support, and global competition are found to be future challenges of India's dairy sector.

Objectives of the Study

The main objectives of this research paper are as follows.

To study the trends of dairy sector in India.

To find out the constraints and opportunities of dairy sector in India.

To examine the role of co-operatives in development of dairy sector in India.

To suggest the remedial measures for the overall performance of Indian dairy sector.

Database & Research Methodology

The present research paper is descriptive and based on secondary data. The secondary has been obtained from various sources such as Economic Survey, Ministry of Finance, Government of India; Basic Animal Husbandry Statistics (BAHS), Ministry of Agriculture, Government of India; National Dairy Development Board (NDDB), Government of India and various reports of Reserve Bank of India. The basic statistical tools such as percentage, growth rate, variation are used for the economic analysis.

Result & Discussion**A. Status of Dairy Sector in the World**

India has now emerged as world's largest producer of milk, currently it contributes more than 16 percent of the world's total milk production followed by USA (12.1 %), China (5.71%) and Pakistan (4.92%).



Table-1
Top milk Producing Countries in the World

Countries/ years	Production (million tonnes)				Share in Percentage				Rank in
	1970	1990	2000	2010	1970	1990	2000	2010	2010
India	20.8	53.68	79.66	117	5.31	9.9	13.8	16.2	1
USA	53.07	67.01	76.02	87.46	13.5	12.4	13.1	12.1	2
China	1.96	7.04	12.37	41.14	0.5	1.3	2.14	5.71	3
Pakistan	7.45	14.72	25.57	35.49	1.9	2.71	4.42	4.92	4
Russia	0	0	32.28	32.14	0	0	5.58	4.46	5
Brazil	7.42	15.08	20.53	31.82	1.89	2.78	3.55	4.41	6
Germany	28.18	31.34	28.35	29.67	7.19	5.78	4.9	4.12	7
France	22.85	26.81	25.74	24.21	5.83	4.94	4.45	3.36	8
New Zealand	5.99	7.51	12.24	17.01	1.53	1.38	2.11	2.36	9
UK	12.97	15.25	14.49	13.19	3.31	2.81	2.5	1.83	10
World	391.87	542.47	578.88	720.98	100	100	100	100	-

Source: NDDB, Government of India.

Table: 1 reveals that the top ten countries of the world are contributing around 60 % of the world milk output in 2010. The investment, innovation, energy and application of scientific production techniques by our small, medium and large farmers have made India becoming a major player in the world dairy sector.

B. Share of Agriculture and Livestock Sector in GDP :

Table: 2 reveals that the share of agriculture sector and livestock sector in total GDP of India has declined from 34.72% and 4.82% in 1980-81 to 15.18% and 3.92% in 2011-12 respectively. However the livestock sector has shown a rising trend in terms of share in agricultural GDP, which increased from 13.88% in 1980-81 to 25.85% in 2011-12.

Table-2
Share of Agriculture and Livestock sector in GDP at current prices

year	GDP	GDP Agriculture		GDP Livestock		% share of Agricultural GDP
		Rs Crores	%	Rs Crores	% share of Total GDP	
1980-81	1224	425	34.72	59	4.82	13.88
1990-91	4778	1352	28.30	308	6.45	22.78
2000-01	19250	4089	21.24	1047	5.44	25.61
2001-02	20977	4425	21.09	1093	5.21	24.70
2002-03	22614	4255	18.82	1149	5.08	27.00
2003-04	25382	4830	19.03	1183	4.66	24.49
2004-05	29714	4766	16.04	1193	4.01	25.03
2005-06	33905	5368	15.83	1275	3.76	23.75
2006-07	39532	6046	15.29	1426	3.61	23.59
2007-08	45820	7162	15.63	1692	3.69	23.62
2008-09	53035	8066	15.21	2004	3.78	24.85
2009-10	61089	9286	15.20	2371	3.88	25.53
2010-11	72670	11320	15.58	2761	3.80	24.39
2011-12	83535	12681	15.18	3278	3.92	25.85

Source: Basic Animal Husbandry Statistics (BAHS-2013 Ministry of Agriculture, Government of India)

**C. Dairy Sector Scenario in India:**

Though India has become the largest milk producing country in the world, its position in terms of per capita availability is one of the lowest. The per capita availability of milk was about 124 gms per day in 1950-51 which has declined to 112 gms per day in 1970-71. But the dairy sector took a leap forward after 1970-71 and per capita availability of milk increased from 112 gms in 1970-71 to about 297 gms per day in 2011-12. However, the present level of per capita availability is little higher than the world average of 285 gms and even more than 220 gms recommended by the Nutritional Advisory Committee of the Indian Council of Medical Research (ICMR).

Table-3
Milk Production and per capita availability in India

Year	Production (million tonnes)	Per capita Availability (gms/day)	Human Population Million no	Growth Rate of Production (%)
1950-51	17	130	359	-
1960-61	20	126	434	1.64
1980-81	31.6	128	679	2.31
1990-91	53.9	176	839	5.48
2000-01	80.6	217	1019	2.94
2001-02	84.4	222	1040	4.71
2002-03	86.2	224	1056	2.13
2003-04	88.1	225	1072	2.20
2004-05	92.5	233	1089	4.99
2005-06	97.1	241	1106	4.97
2006-07	102.6	251	1122	5.66
2007-08	107.9	260	1138	5.17
2008-09	112.2	266	1154	3.99
2009-10	116.4	273	1170	3.74
2010-11	121.8	281	1186	4.64
2011-12	127.9	290	1210	5.01
2012-13	133	297	1216	3.99
CGR (1990-91 to 2012-13)	4.15	2.38	1.72	-

Source: Basic Animal Husbandry Statistics (BAHS-2013 Ministry of Agriculture, Government of India.

D. Growth Rate of Milk Production in India :

The Indian dairy sector has acquired substantial growth from 6th plan onwards.

Table-4
Compound Decadal Growth Rate and Compound Plan wise Growth Rate of Milk Production in India

Year wise	Growth Rate (%)	Plan wise	Growth Rate (%)
1950-51 to 1960-61	1.64	5th plan (1975-76 to 1979-80)	2.91
1960-61 to 1973-74	1.15	6th plan (1980-81 to 1984-85)	6.42
1973-74 to 1980-81	4.51	7th plan (1985-86 to 1989-90)	4.37
1980-81 to 1990-91	5.48	8th plan (1992-93 to 1996-97)	4.41
1990-91 to 2000-01	4.11	9th plan (1997-98 to 2001-02)	4.08
2000-01 to 2010-11	4.22	10th plan (2002-03 to 2006-07)	3.64
2010-11 to 2011-12	4.97	11th plan (2007-08 to 2011-12)	4.33

Source: Basic Animal Husbandry Statistics (BAHS-2013 Ministry of Agriculture, Government of India



The growth rate of milk production in India has increased from 1.64 % in 1950-51 to 1960-61 to 4.22% in 2000-01 to 2010-11. Moreover during the fifth five year plan its growth rate was 2.91 % as compared to 4.33% during eleventh five year plan.

E. State Wise Status of Milk Production in India :

Uttar Pradesh is the largest milk producing state in the country, producing about 22.5 million tonnes of milk, followed by Rajasthan (13.5 million tonnes), Andhra Pradesh (12.1 mil-

lion tonnes), Gujarat (9.8 million tonnes), Punjab (9.5 million tonnes) Maharashtra (8.4 million tonnes) and Madhya Pradesh (8.1 million tonnes) in 2011-12. These seven states accounted for about more than 65 percentage of India's milk production. In terms of per capita availability of milk, there are wide inter-state and inter-regional disparities. Regarding the milk production, Maharashtra ranked at 6th position in all India level during 2011-12.

Table-5
Major Milk Producing States in India (MT)

States	1997-98	200-01	2010-11	2011-12	1997-98	2000-01	2010-11	2011-12	Rank
Andhra Pradesh	4473	5521	11203	12088	6.20	6.85	9.19	9.45	3
Bihar	3420	2489	6517	6643	4.74	3.09	5.35	5.19	10
Gujarat	4913	5312	9321	9817	6.81	6.59	7.65	7.68	4
Haryana	4373	4850	6267	6661	6.06	6.02	5.14	5.21	9
Karnakata	3970	4599	5114	5447	5.50	5.71	4.20	4.26	11
Madhya Pradesh	5377	4761	7514	8149	7.45	5.91	6.17	6.37	7
Maharashtra	5193	5849	8044	8469	7.20	7.26	6.60	6.62	6
Punjab	7165	7777	9423	9551	9.93	9.65	7.73	7.47	5
Rajasthan	6487	7455	13234	13512	8.99	9.25	10.86	10.56	2
Tamil Nadu	4061	4910	6831	6968	5.63	6.09	5.61	5.45	8
Utter Pradesh	12934	13857	21031	22556	17.93	17.19	17.26	17.64	1
All India	72128	80607	121848	127904	100.00	100.00	100.00	100.00	2 nd in world

Source: Basic Animal Husbandry Statistics (BAHS-2013 Ministry of Agriculture, Government of India

F. Co-Operative Sustainability :

The withdrawal of government regulation has enabled the use of co-operatives as an institutional set up for implementing programmes relating to socio-economic development.



Table: 6
State wise Number of Dairy Plants Registered under MMPO (1992) as on March 2011 (Capacity 000 liters per day)

States		Cooperative		Private		Others		Total	
		No	Capacity	No	Capacity	No	Capacity	No	Capacity
AP	Central	8	2125	7	4605	0	0	15	6730
	State	1	25	32	1088	0	0	33	1113
Bihar	Central	6	575	2	400	0	0	8	975
	State	4	125	0	0	0	0	4	125
Chhattisgarh	Central	1	100	0	0	0	0	1	100
	State	0	0	0	0	0	0	0	0
Delhi	Central	0	0	1	3500	1	500	2	4000
	State	0	0	0	0	0	0	0	0
Goa	Central	1	30	1	210	0	0	2	240
	State	0	0	2	60	0	0	2	60
Gujarat	Central	12	12900	2	370	2	400	16	13670
	State	4	260	13	547	0	0	17	807
Haryana	Central	4	400	7	1340	0	0	11	1740
	State	1	70	24	1077	1	60	26	1207
HP	Central	0	0	2	345	0	0	2	345
	State	3	60	2	200	0	0	5	260
J&K	Central	0	0	1	30	0	0	1	30
	State	0	0	0	0	0	0	0	0
Karnataka	Central	13	4203	1	120	0	0	14	4323
	State	3	120	7	365	0	0	10	485
Kerala	Central	2	200	4	175	0	0	6	375
	State	13	1022.5	6	198	0	0	19	1220.5
MP	Central	5	1000	5	2875	0	0	10	3875
	State	0	0	30	1137.5	0	0	30	1137.5
Maharashtra	Central	22	5030	15	6250	13	2320	50	13600
	State	64	2835	261	9391	20	766	345	12992
Orissa	Central	4	294.5	0	0	0	0	4	294.5
	State	9	228.5	2	75	0	0	11	303.5
Pondicherry	Central	1	50	0	0	0	0	1	50
	State	0	0	0	0	0	0	0	0
Punjab	Central	12	1720	8	3470	0	0	20	5190
	State	1	100	56	3059	0	0	57	3159
Rajasthan	Central	11	2040	7	2475	0	0	18	4514
	State	7	380	13	886	0	0	20	1266
Sikkim	Central	1	25	0	0	0	0	1	25
	State	0	0	0	0	0	0	0	0
Tamil Nadu	Central	11	4030	5	3920	0	0	16	7950
	State	0	0	21	1369	0	0	21	1369
Tripura	Central	1	10	0	0	0	0	1	10
	State	0	0	0	0	0	0	0	0
UP	Central	7	1560	37	13179	0	0	44	14739
	State	28	916	179	9390	0	0	207	10306
WB	Central	3	816	2	650	0	0	5	1466
	State	0	0	10	495	0	0	10	495
Total	Central	125	37109	107	43914	16	3220	248	84243
	State	138	6142	658	29338	21	826	817	36306

Source: Basic Animal Husbandary Statistics (2013 part-3)

The delicensing of dairy industry under Industrial Development and Regulation Act (IRDA-1951) and promulgation of milk and milk products order (MMPO-1992) have helped many milk unions in the country to increase their liquid milk collection and business turnover tremendously. The information related to state-wise number of dairy plants registered under MMPO is given in the Table 6. Among various states, Utter Pradesh ranks first in terms of number and capacity of milk plants operating under central registered authorities followed by Gujarat and Maharashtra. But Maharashtra rank first in terms of number and capacity of milk plants operating under state registered authorities followed by Utter Pradesh and Punjab. Several brands have been created by co-operatives like Amul (GCMMF), Vijaya (AP), Verka (Punjab), Saras (Rajasthan), Nandini (Karnataka), Milma (Kerala) and Gokul (Kolhapur).

G. Dairy co-operatives' Challenges :

The dairy sector is characterized by small-scale, scattered, and unorganized milk-animal holders; inadequate and inappropriate animal feeding and health care; low productivity; an inadequate basic infrastructure for provision of production inputs and services; lack of an assured year-round remunerative producer price for milk; an inadequate basic infrastructure for procurement, transportation, processing and marketing of milk; and lack of professional management. Low productivity of milk animals is a serious constraint to dairy development.

Policy Implications & Suggestions :

The dairy cooperative movement has not only improved the lives of rural people but also generated employment opportunities for farm families and made significant contribution to the economy of the nation as well. The need of the hour for the cooperative sector in the era of liberalized environment is to seize every opportunity available. Vertical integration is important for maintaining efficiency in the procurement supply chain, and this is best demonstrated by the cooperatives. Development of cooperatives has to be promoted, and reckless government intervention in management of cooperatives should be checked. Following are the important suggestions for the betterment of dairy sector in India.

To strengthen, expand and bring transparency in the village level milk procurement system to reduce the collection and transport cost. There is a need for an end-to-end approach for ensuring the success of the dairy sector. Therefore convergence in the provision of services relating to breeding, nu-

trition, healthcare, processing and marketing is an essential requirement for success. Literacy movement should be launched to spread knowledge of food safety as well as animal hygiene and sanitation. Mergers and acquisitions need to be given importance in dairy industry, primarily to obtain economies of scale. The co-operatives should be professionally managed and authority and accountability should go together at all levels. There is a need to minimize the interference of Political and bureaucratic people in routine administration. The role of government should be to direct, coordinate, and regulate the activities of various organizations engaged in dairy development to establish and maintain a level playing field for all stakeholders; and to create and maintain a congenial socio-economic, institutional, and political environment for smallholder dairy development. The major constraint in milk marketing is the involvement of the unorganized sector. Changing the dairy-cooperative laws and regulations can reduce the unorganized sector's role in milk marketing. Human resource development is important both at the farmer and professional levels. Farmer-level capacity building as well as in the farms of outstanding dairy entrepreneurs (farmer to farmer learning). Public policies in the fields of import and export of animal feed, input and output pricing, investment and infrastructure development should ensure the sustainability and survival of small scale dairy farming. The future of dairying will also rely on the continued adaptation of management techniques to suit markets, environments, and socio-economic conditions. Women play a pivotal role in dairy farming should be kept in view, while developing support systems gender specific needs should be met. The dairy sector in India needs to enhance its competitive economic in terms of both quality and cost and its credibility in international markets.

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