



National Dairy
Development
Board

DAIRYING IN



GUJARAT

A STATISTICAL PROFILE 2013





FOREWORD

In this compilation of the statistical profiles of the dairy sector in various States, the main landmarks or highlights are: Trends in human demographics, animal population and production; Inputs for enhancement of productivity such as breeding, health and nutrition; and Government expenditure, along with supporting resources.

This review includes statistical tables on selected parameters for each State taken as a whole, along with time-series data for districts wherever available. Since spatial presentation of data can yield insights not immediately comprehensible from tables, thematic maps for selected parameters (with data both at a point of time as well as changes over a period of time) have also been included.

The objective of this publication is to provide a detailed presentation of various parameters, underlying factors, and their inter-linkages so as to enable effective planning and implementation of development interventions. We also hope that a wide range of readers, students, researchers, veterinarians, planners, scientists, administrators, policy makers and academics, as well as other development practitioners and professionals in government and non-governmental organisations, will find this publication useful for their studies and projects.

Although a wealth of information is available on many aspects of dairying from different sources, it is not only scattered but also there are inconsistencies on the same aspect in data maintained by different agencies. While limited data could mean being less informed, extensive information could mean an overload and defeat the very purpose of organising it. This review therefore aims at balancing the most comprehensive information with the most relevant. We sincerely thank government and non-government agencies for providing information. While extreme care has been taken in juxtaposing data, some errors cannot be ruled out.

This publication “Dairying in Gujarat – A Statistical Profile 2013” is the first in a series of similar publications for other states which will follow shortly.

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PART I. GENERAL STATISTICS

PEOPLE: Census records place Gujarat's human population at 60.4 million in 2011. Half that population is distributed across seven districts, namely, Ahmedabad, Surat, Vadodara, Rajkot, Banaskantha, Bhavnagar and Junagadh, with the rest spread across the remaining 19 districts. As elsewhere, urbanisation is on the rise, with urban areas accounting for 43 per cent of the population.

The State has 918 females per 1,000 males as against the national average of 940 females per thousand.

GDP: With five per cent population of the country, Gujarat accounts for more than seven percent of the national Gross Domestic Product. Agricultural output grew at a higher annual rate than the all-India one (2005-06 to 2012-13).

About 43 lakh families keep livestock in Gujarat as a primary or secondary source of income. Livestock output at constant prices was reported at Rs. 141 billion in 2011-12, of which milk contributes about 86 per cent, or Rs. 122 billion. The livestock sub-sector (comprising milk, meat, egg, dung and others), contributes five per cent of the total GDP of Gujarat, or 23 per cent of the agriculture and allied sectors.





I.1. Gujarat at a Glance

TABLE I.1.1: General Statistics: Gujarat State vs. India

Item	Unit	Year	Gujarat	India
Total Human Population	'000	2011	60,439	12,10,193
Males	"	"	31,491	6,23,724
Females	"	"	28,948	5,86,469
Rural	"	2011	34,694	8,33,088
Urban	"	2011	25,745	3,77,106
Districts	No.	2011	26	640
Talukas (<i>sub-districts</i>)	"	"	225	5,924
Statutory Towns	"	"	195	4,041
Census Towns	"	"	153	3,894
Villages (<i>including un-inhabited</i>)	"	"	18,225	6,40,867
Density of Population (<i>population/sq km</i>)	No.	2011 (P)	308	382
Decadal Growth Rate in Population	%	2001-2011 (P)	19	18
Scheduled Caste Population	'000	2011	4,074	2,01,378
Scheduled Tribe Population	"	2011	8,917	1,04,281
Sex Ratio (<i>females per 1,000 males</i>)	No.	2011 (P)	918	940
Rural	"	"	947	947
Urban	"	"	880	926
Literate Population	'000	2011 (P)	41,949	7,78,454
No. of Census Houses	'000	2011	17,524	3,30,836
Rural	"	"	9,293	2,20,695
Urban	"	"	8,230	1,10,139
State Income: Gross Domestic Product				
At Current Prices	Rs. Crore	2011-12 (Q)	6,11,767	83,53,495
At Constant (2004-05) Prices	"	"	3,98,884	52,43,582
Per Capita Income at Current Prices	Rs.	2011-12 (Q)	89,668	61,564
Per Capita Income at Constant (2004-05) Prices	"	"	57,508	38,037
Reporting Area for Land Utilisation				
Net Sown Area	'000 Ha.	2010-11 (P)	19,069	3,05,903
Total Cropped Area	"	"	10,302	1,41,579
Forests Area	"	"	12,247	1,98,969
Area under Total Coarse Cereals	"	2011-12 (P)	1,834	70,006
Area under Total Pulses	"	"	1,592	26,422
Area under Total Food Grains	"	"	957	24,462
Net Irrigated Area	"	2010-11	4,736	1,24,755
Net Irrigated Area	"	2010-11	4,233	63,601
Consumption of Electricity for Agriculture Purpose				
Consumption of Electricity for Agriculture Purpose	GWh	2008-09	11,730	1,07,776
Total Electricity Consumption	"	"	45,968	5,27,564
Total Livestock Population				
Total Livestock Population	'000 No.	2007 (P)	23,515	5,29,698
Cattle	"	"	7,976	1,99,075
Buffaloes	"	"	8,774	1,05,343
Sheep and Goats	"	"	6,642	2,12,095
Other Livestock	"	"	123	13,184

Contd..



Item	Unit	Year	Gujarat	India
Milk Production	'000 MT	2012-13	10,314	1,32,430
Egg Production	million	2012-13	1,456	69,731
Estimated Meat Production	'000 MT	2012-13	34	5,948
Marine & Inland Fish Production	'000 tonne	2012-13	849	9,062
Wool Production	'000 kg	2012-13	2,663	46,054
Groundwater Status				
Safe	%	2009	70	73
Semi-critical			9	9
Critical			3	3
Over-exploited			12	14
Salinity-affected			6	1

P = Provisional, Q = Quick Estimates

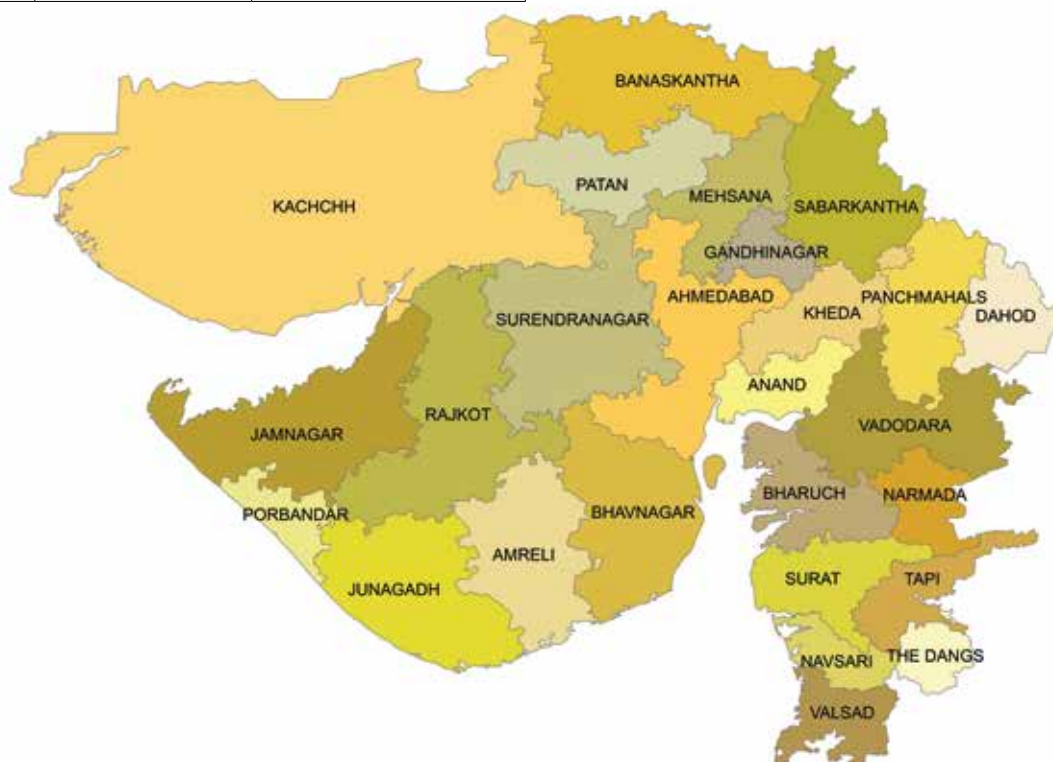
SOURCES:

- Census 2001 & 2011, Office of the Registrar General and Census Commissioner, Govt of India, New Delhi.
- 18th Livestock Census, Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture, Govt of India.
- Minutes of the Meeting of Technical Committee on Direction for improvement of Animal Husbandry Statistics held during 4th to 5th July, 2013, Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture, Govt of India.
- Dynamic Ground Water Resources of India as on 31st March, 2009, Central Ground Water Board, Ministry of Water Resources, Govt of India.
- Directorate of Economics and Statistics, Ministry of Agriculture, Govt of India.
- Ministry of Statistics and Programme Implementation, Govt of India.

Formation of Districts in Gujarat

Districts	Year of Formation	Carved Out of
Anand	2 October - 1997	Kheda
Dahod	2 October - 1997	Panchmahals
Gandhinagar	1964	Ahmedabad and Mehsana
Narmada	2 October - 1997	Bharuch, Vadodara
Navsari	2 October - 1997	Valsad

Districts	Year of Formation	Carved Out of
Patan	2 October - 1997	Banaskantha and Mehsana
Porbandar	2 October - 1997	Junagadh
Tapi	2 October - 2007	Surat
Valsad	1966	Surat





I.2: Social Statistics: Human Population

TABLE I.2.1: Human Population by Residence and Sex – 2011

Districts	Rural ('000)			Urban ('000)			Total ('000)		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
GUJARAT	17,799	16,896	34,695	13,692	12,053	25,745	31,491	28,948	60,440
Ahmedabad	596	556	1,151	3,193	2,871	6,063	3,788	3,426	7,214
Amreli	573	555	1,128	199	188	387	771	743	1,514
Anand	759	699	1,458	329	306	635	1,087	1,006	2,093
Banaskantha	1,394	1,312	2,706	217	198	415	1,610	1,510	3,121
Bharuch	529	497	1,026	276	249	525	806	745	1,551
Bhavnagar	869	829	1,698	621	561	1,182	1,490	1,390	2,880
Dahod	971	965	1,936	98	94	192	1,069	1,058	2,127
Gandhinagar	408	383	791	315	285	601	724	668	1,392
Jamnagar	610	579	1,189	504	467	971	1,114	1,046	2,160
Junagadh	940	896	1,837	464	442	906	1,404	1,339	2,743
Kachchh	714	650	1,364	383	345	729	1,097	996	2,092
Kheda	915	861	1,776	271	253	524	1,186	1,114	2,300
Mehsana	787	734	1,521	269	245	514	1,057	979	2,035
Narmada	269	259	528	32	30	62	301	289	590
Navsari	465	456	921	213	196	409	678	652	1,330
Panchmahals	1,053	1,003	2,056	174	161	335	1,227	1,164	2,391
Patan	548	514	1,063	146	135	281	694	649	1,344
Porbandar	153	147	300	147	139	286	300	285	585
Rajkot	816	774	1,591	1,158	1,056	2,214	1,974	1,830	3,805
Sabarkantha	1,056	1,009	2,065	188	176	364	1,244	1,184	2,429
Surat	640	592	1,232	2,762	2,087	4,849	3,402	2,679	6,081
Surendranagar	650	610	1,259	260	237	497	910	846	1,756
Tapi	362	366	728	41	39	80	402	405	807
The Dangs	102	102	204	12	13	25	114	115	228
Vadodara	1,078	1,022	2,100	1,076	990	2,066	2,154	2,012	4,166
Valsad	543	528	1,070	345	291	636	887	819	1,706

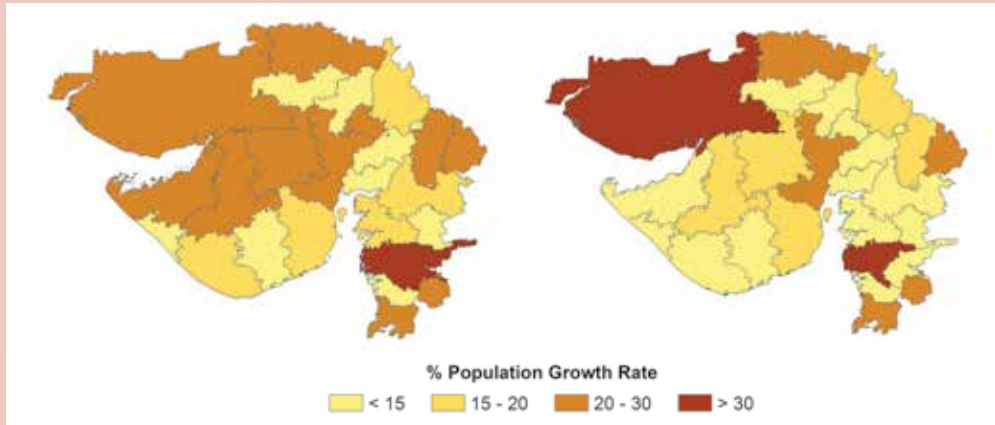
SOURCE: Census 2011, Office of the Registrar General and Census Commissioner, Govt of India, New Delhi.



% Decadal Growth Rate of Population

1991-2001

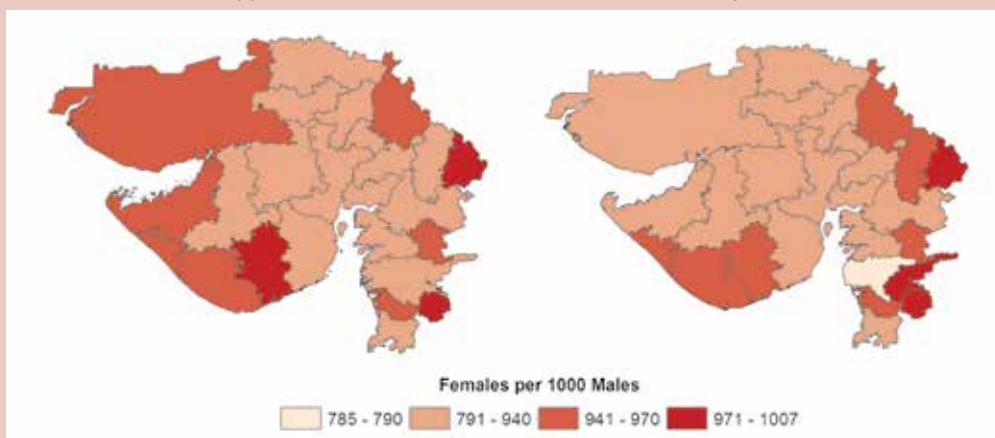
2001-2011



Sex Ratio (Females per 1,000 Males)

2001

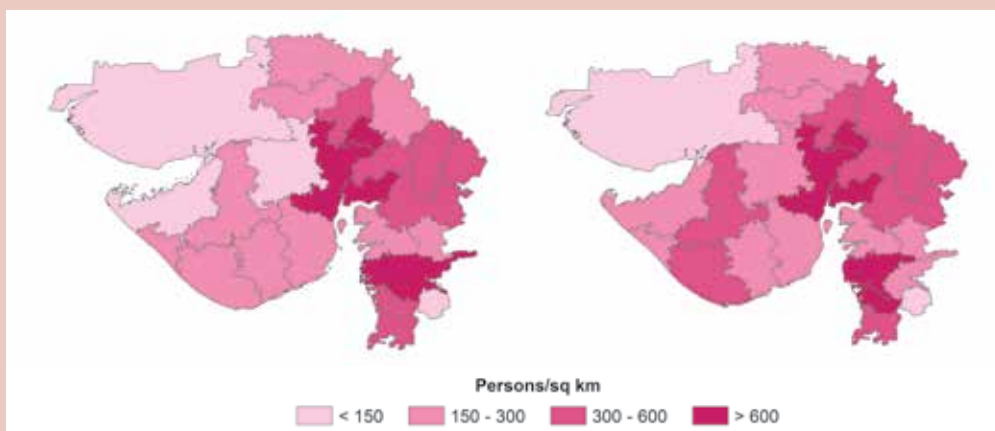
2011



Population Density

2001

2011

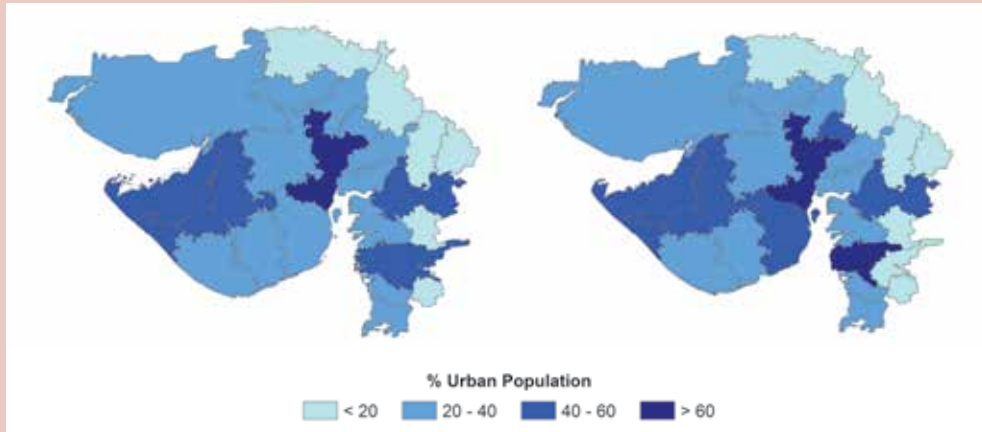




Urbanisation (%)

2001

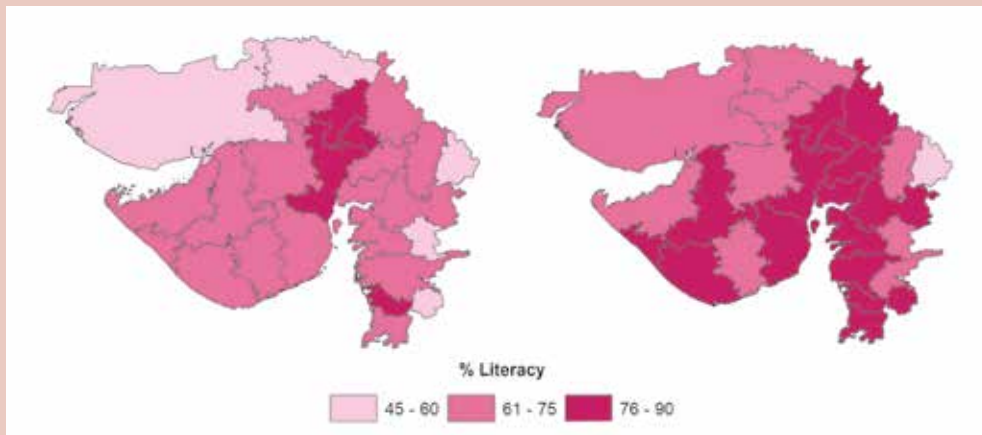
2011



Literacy Rate (%)

2001

2011





I.2. Social Statistics: Human Population

TABLE I.2.2: Human Population by Residence and Sex – 2001

Districts	Rural ('000)			Urban ('000)			Total ('000)		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
GUJARAT	16,318	15,423	31,741	10,068	8,862	18,930	26,386	24,285	50,671
Ahmedabad	601	552	1,153	2,473	2,190	4,664	3,075	2,742	5,817
Amreli	540	541	1,081	161	152	313	702	692	1,394
Anand	707	642	1,349	265	243	508	972	885	1,857
Banaskantha	1,153	1,076	2,229	145	131	276	1,297	1,207	2,504
Bharuch	529	489	1,018	185	168	353	714	657	1,371
Bhavnagar	782	752	1,535	493	442	935	1,275	1,195	2,470
Dahod	744	736	1,480	80	76	156	824	812	1,636
Gandhinagar	451	417	867	248	220	467	698	637	1,335
Jamnagar	545	523	1,068	436	400	836	981	923	1,904
Junagadh	885	851	1,737	367	345	712	1,252	1,196	2,448
Kachchh	568	541	1,108	248	227	475	815	768	1,583
Kheda	842	76	1,618	211	195	407	1,053	971	2,024
Mehsana	737	689	1,426	217	195	412	954	884	1,838
Narmada	237	226	462	27	25	52	264	250	514
Navsari	453	440	893	176	161	336	629	601	1,230
Panchmahals	913	859	1,772	132	121	253	1,045	980	2,025
Patan	487	457	944	125	114	238	612	571	1,183
Porbandar	141	134	276	135	127	261	276	261	537
Rajkot	793	751	1,544	849	777	1,626	1,642	1,528	3,170
Sabarkantha	952	905	1,857	117	108	225	1,070	1,013	2,083
Surat	1,027	973	1,999	1,696	1,300	2,996	2,723	2,273	4,995
Surendranagar	577	536	1,113	211	192	402	788	728	1,515
The Dangs	94	93	187	0	0	0	94	93	187
Vadodara	1,034	961	1,996	863	783	1,646	1,897	1,744	3,642
Valsad	526	503	1,029	208	173	381	735	676	1,411

SOURCE: Census 2001, Office of the Registrar General and Census Commissioner, Govt of India, New Delhi.



I.2. Social Statistics: Human Population

TABLE I.2.3: District-wise SC and ST Population – 2001 & 2011

Districts	SC Population ('000)		ST Population ('000)	
	2001	2011	2001	2011
GUJARAT	3,592.7	4,074.4	7,481.2	8,917.2
Ahmedabad	620.8	759.5	58.0	89.1
Amreli	115.5	132.9	3.3	7.3
Anand	98.5	104.5	22.8	24.8
Banaskantha	271.5	327.5	205.9	284.2
Bharuch	61.5	62.2	444.0	488.2
Bhavnagar	142.1	157.0	7.3	9.1
Dahod	32.9	41.4	1,182.5	1,580.9
Gandhinagar	116.0	108.6	17.7	18.2
Jamnagar	154.8	173.9	10.5	24.2
Junagadh	235.6	265.8	18.8	55.6
Kachchh	185.9	258.9	130.1	24.2
Kheda	106.1	115.6	32.4	40.3
Mehsana	148.6	162.3	9.0	9.4
Narmada	10.0	8.7	401.7	481.4
Navsari	39.6	35.5	591.2	639.7
Panchmahals	92.5	100.4	556.0	721.6
Patan	116.9	123.4	12.6	13.3
Porbandar	48.2	51.8	6.5	13.0
Rajkot	244.4	290.2	13.2	24.0
Sabarkantha	173.3	187.7	420.2	542.2
Surat	169.3	158.1	1,408.3	857.0
Surendranagar	166.2	179.5	14.3	21.5
Tapi		8.2		679.3
The Dangs	0.9	1.0	175.1	216.1
Vadodara	204.3	221.6	967.4	1,149.9
Valsad	37.3	38.2	772.4	902.8

SC: Scheduled Caste, ST: Scheduled Tribe

SOURCE: Census 2001 and 2011, Office of the Registrar General and Census Commissioner, Govt of India, New Delhi.



I.2. Social Statistics: Human Population

TABLE I.2.4: Rural Households, Electricity & Tap Water Supply – 2001 & 2011

Districts	Rural Households ('000)		Rural Households with Electricity ('000)		Rural Households with Tap Water (inclusive – treated & untreated) ('000)	
	2001	2011	2001	2011	2001	2011
GUJARAT	5,942	6,774	4,245	5,749	2,889	3,773
Ahmedabad	223	228	187	211	146	168
Amreli	193	219	174	201	77	138
Anand	265	298	176	256	177	216
Banaskantha	375	478	214	321	247	273
Bharuch	208	217	148	194	131	155
Bhavnagar	254	302	227	272	85	187
Dahod	216	299	72	209	8	9
Gandhinagar	173	162	130	144	147	141
Jamnagar	194	230	158	199	86	133
Junagadh	304	348	283	323	158	214
Kachchh	225	286	159	250	149	225
Kheda	318	360	193	276	178	213
Mehsana	283	317	226	283	239	279
Narmada	93	109	44	90	19	30
Navsari	187	203	152	180	59	72
Panchmahals	312	379	165	334	44	68
Patan	177	209	115	168	142	177
Porbandar	55	63	49	57	19	29
Rajkot	286	315	248	290	133	240
Sabarkantha	356	406	260	367	197	226
Surat	417	270	275	230	153	145
Surendranagar	201	241	167	207	83	147
Tapi		160		127		31
The Dangs	36	40	19	26	4	6
Vadodara	389	418	249	348	190	215
Valsad	204	217	156	187	21	37

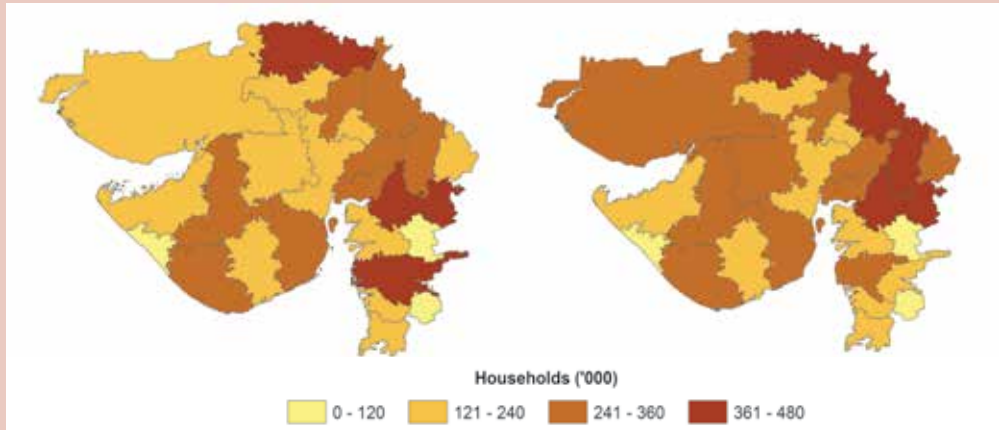
SOURCE: Census 2001 and 2011, Office of the Registrar General and Census Commissioner, Govt of India, New Delhi.



Rural Households

2001

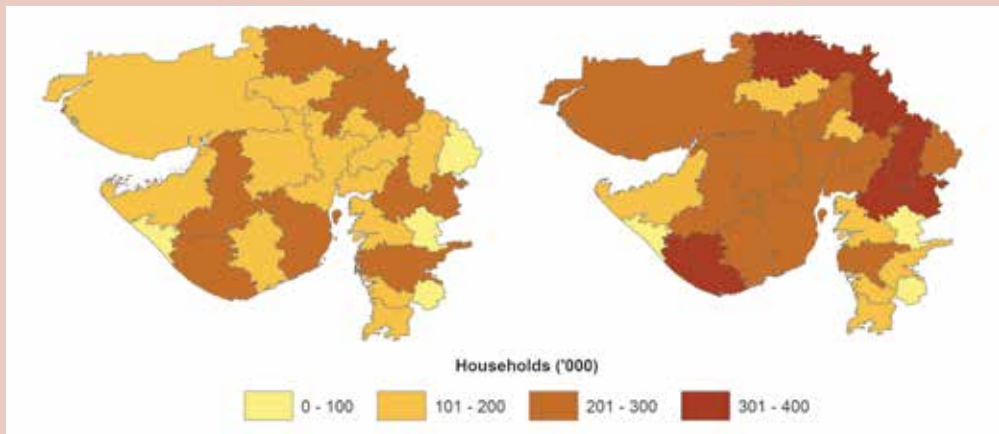
2011



Households with Electricity

2001

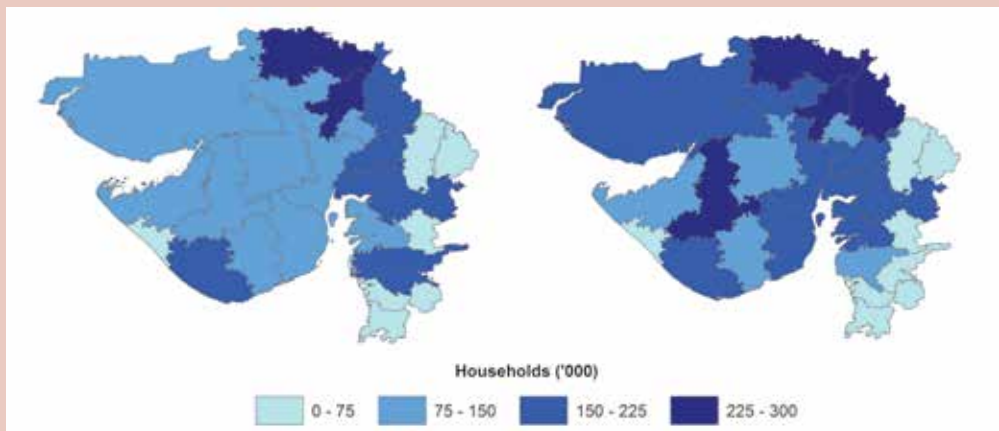
2011



Households with Tap Water (including treated & untreated)

2001

2011





I.3. State Economy

TABLE I.3.1: Net State Domestic Product (NSDP) and Per Capita Income

At Current Prices (Rs. crores)									
	Sector	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
State Domestic Product		1,72,265	2,06,440	2,40,733	2,81,579	3,14,485	3,71,187	4,62,583	5,33,390
1.	Agriculture	24,803	33,141	39,575	48,237	46,865	55,049	90,626	1,06,889
2.	Forestry & Logging	4,445	4,887	5,643	4,358	5,222	5,564	6,513	6,764
3.	Fishing	1,268	1,795	1,974	2,070	2,305	2,534	2,762	2,782
4.	Agriculture & Allied*	30,516	39,823	47,192	54,665	54,392	63,147	99,901	1,16,435
	As % of NSDP	17.71	19.29	19.60	19.41	17.30	17.01	21.60	21.83
a.	Sub-total of Primary	36,378	46,503	54,051	61,956	61,971	71,126	1,08,788	1,25,775
	As % of NSDP	21.12	22.53	22.45	22.00	19.71	19.16	23.52	23.58
b.	Sub-total of Secondary	55,417	66,733	78,702	93,299	1,06,264	1,34,678	1,55,428	1,74,656
	As % of NSDP	32.17	32.33	32.69	33.13	33.79	36.28	33.60	32.74
c.	Services	80,470	93,204	1,07,980	1,26,324	1,46,250	1,65,383	1,98,367	2,32,959
	As % of NSDP	46.71	45.15	44.85	44.86	46.50	44.56	42.88	43.68
State Per Capita Income (Rs.)		32,021	37,780	43,395	50,016	55,068	64,097	78,802	89,668

At 2004-05 Prices (Rs. crores)									
	Sector	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
State Domestic Product		1,72,265	1,97,270	2,13,954	2,39,253	2,49,480	2,84,732	3,15,754	3,42,088
1.	Agriculture	24,803	31,896	31,372	34,750	30,683	29,339	37,650	40,052
2.	Forestry & Logging	4,445	4,474	4,468	4,503	4,532	4,585	4,554	4,554
3.	Fishing	1,268	1,501	1,547	1,421	1,539	1,567	1,581	1,532
4.	Agriculture & Allied*	30,516	37,871	37,387	40,674	36,754	35,491	43,785	46,138
	As % of NSDP	17.71	19.20	17.47	17.00	14.73	12.46	13.87	13.49
a.	Sub Total of Primary	36,378	43,702	43,256	46,581	42,085	40,865	49,282	51,653
	As % of NSDP	21.12	22.15	20.22	19.47	16.87	14.35	15.61	15.10
b.	Sub Total of Secondary	55,417	63,011	69,900	79,475	85,090	1,08,430	1,16,010	1,20,814
	As % of NSDP	32.17	31.94	32.67	33.22	34.11	38.08	36.74	35.32
c.	Services	80,470	90,557	1,00,798	1,13,197	1,22,305	1,35,437	1,50,462	1,69,621
	As % of NSDP	46.71	45.91	47.11	47.31	49.02	47.57	47.65	49.58
State Per Capita Income (Rs.)		32,021	36,102	38,568	42,498	43,685	49,168	53,789	57,508

* Includes Livestock, Forestry & Fisheries

SOURCE: Ministry of Statistics and Programme Implementation, Govt of India.



I.3. State Economy

TABLE I.3.2: Value of Output: Agriculture and Livestock

Item	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11 (P)	2011-12 (Q)
Value of Output at Current Prices (Rs. billion)								
Agriculture & Allied*	448	565	644	735	743	859	1274	1464
Agriculture	278	376	421	492	476	549	898	1030
Livestock	99	106	127	156	178	207	257	310
Share of Value of Output to Agriculture and Allied* (%)								
Agriculture	62.1	66.5	65.4	66.9	64.1	63.9	70.5	70.4
Livestock	22.1	18.8	19.7	21.2	24.0	24.1	20.2	21.2
Value of Output at Constant Prices (Rs. billion) (2004-05)								
Agriculture & Allied*	449	430	494	556	526	513	628	647
Agriculture	278	350	307	361	318	312	424	437
Livestock	99	105	112	118	129	133	134	141
Share of Value of Output to Agriculture and Allied* (%)								
Agriculture	61.9	81.4	62.1	64.9	60.5	60.7	67.6	67.6
Livestock	22.0	24.4	22.7	21.2	24.5	25.8	21.3	21.8
Value of Livestock Output at Current Prices (Rs. billion)								
Milk	85.8	89.9	107.1	133.1	145.1	169.8	214.4	255.1
Meat	6.4	7.3	10.9	12.1	19.6	18.7	20.3	27.8
Egg	0.8	0.9	1.3	1.6	2.9	3.0	4.0	5.1
Dung	4.1	4.6	5.0	5.3	5.4	5.8	6.1	7.1
Others^	2.5	3.0	3.4	4.4	5.6	9.6	12.0	15.1
Share of Livestock Output at Current Prices (%)								
Milk	86.2	85.1	83.8	85.1	81.2	82	83.5	82.2
Meat	6.4	6.9	8.5	7.7	11.0	9.0	7.9	9.0
Egg	0.8	0.9	1.1	1.0	1.6	1.5	1.6	1.6
Dung	4.1	4.4	3.9	3.4	3.0	2.8	2.4	2.3
Others^	2.5	2.8	2.7	2.8	3.2	4.6	4.7	4.9
Value of Livestock Output at Constant Prices (Rs. billion) (2004-05)								
Milk	85.8	89.9	94.9	99.5	105.3	110.4	116.0	121.8
Meat	6.4	7.1	9.0	9.6	13.8	11.4	6.6	7.1
Egg	0.8	0.9	1.2	1.4	2.1	2.1	2.2	2.4
Dung	4.1	4.3	4.5	4.4	4.4	2.5	2.5	2.7
Others^	2.5	2.8	3.1	3.4	3.5	6.2	6.7	7.2
Share of Livestock Output at Constant Prices (%)								
Milk	86.2	85.6	84.2	84.1	81.5	83.2	86.6	86.3
Meat	6.4	6.7	8.0	8.1	10.7	8.6	4.9	5.0
Egg	0.8	0.9	1.1	1.1	1.6	1.6	1.6	1.7
Dung	4.1	4.1	4.0	3.8	3.4	1.9	1.9	1.9
Others^	2.5	2.7	2.7	2.9	2.7	4.7	5.0	5.1

P: Provisional Estimates, Q: Quick Estimates, * Includes Livestock, Forestry & Fisheries, ^ Includes Wool and Hair, Silkworm Cocoons & Honey, Increment in Stock

SOURCE: Directorate of Economics and Statistics, Govt of Gujarat.



I.3. State Economy

TABLE I.3.3: Plan Outlay and Expenditure on Animal Husbandry and Dairy Development

Rs. in lakh

Plan Period	Plan Outlay			Expenditure		
	Animal Husbandry (Revised)	Dairy Development (Revised)	Total	Animal Husbandry (Revised)	Dairy Development (Revised)	Total
Fifth Five Year Plan 1974-1978	755.0	247.0	1,002.0	304.6	245.0	549.5
Annual Plan 1978-79 to 1979-80	514.0	116.0	630.0	496.1	355.1	851.2
Sixth Five Year Plan 1980-1985	1,770.0	205.0	1,975.0	1,432.8	219.7	1,652.5
Seventh Five Year Plan 1985-1990	1,820.0	127.0	1,947.0	1,875.9	121.3	1,997.1
Eighth Five Year Plan 1990-95	2,610.0	270.0	2,880.0	2745.0	191.5	2,936.5
Border Area	110.0	55.0	165.0	108.6	50.0	158.6
Annual Plan 1995-96	861.0	70.0	931.0	909.5	61.1	970.6
Border Area	55.0	50.0	105.0	49.7	50.0	99.7
Annual Plan 1996-97	916.0	70.0	986.0	937.8	120.3	1058.2
Border Area	0	50.0	50.0	0.0	0.0	0.0
Ninth Five Year Plan 1997-2002	7,450.0	530.0	7,980.0	7,655.6	437.8	8,093.4
Tenth Five Year Plan 2002-2007	14,339.8	848.9	15,188.8	12,635.5	813.7	13,449.3
Annual Plan 2007-2008	6,300.0	3,000.0	9,300.0	5,497.3	2,334.1	7,831.4
Revised	(6,641.3)	(2,477.6)				
Annual Plan 2008-2009	9,187.0	2,500.0	11,687.0	6,613.5	2,351.7	8,965.2
Revised	(9,047.0)	(3,273.6)				
Annual Plan 2009-2010	10,337.0	1,350.0	11,687.0	9,040.3	1,139.7	10,179.9
Revised	(9,797.3)	(1,297.0)				
Annual Plan 2010-2011	11,433.0	2,000.0	13,433.0	9,679.9	2,968.0	12,647.9
Revised	(10,804.2)	(2971.1)				
Annual Plan 2011-2012	14,641.1	8,350.0	22,991.1	12,725.6	8,317.1	21,042.7
Revised	(13,136.5)	(8,494.4)				

SOURCE: Bulletin of Animal Husbandry and Dairying Statistics, 2011-12, Directorate of Animal Husbandry, Govt of Gujarat.



I.3 State Economy

TABLE I.3.4: Rashtriya Krishi Vikas Yojana (Animal Husbandry and Dairy Development)

Rs. In lakh

	2008-09		2009-10		2010-11		2011-12		Total	
	Grant Released	Expenditure Incurred	Grant Released	Expenditure Incurred	Grant Released	Expenditure Incurred	Grant Released	Expenditure Incurred	Grant Released	Expenditure Incurred
State	740.0	740.0	3,198.8	2,721.1	1,034.8	1,042.2	58.0	58.0	5,031.6	4,561.3
Districts	0.0	0.0	332.5	122.9	1,014.2	1,094.8	3,700.0	2,984.9	5,046.7	4,202.5
Total	740.0	740.0	3,531.3	2,844.0	2,049.0	2,137.0	3,758.0	3,042.9	10,078.3	8,763.8

SOURCE: Bulletin of Animal Husbandry and Dairying Statistics, 2011-12, Directorate of Animal Husbandry, Govt of Gujarat.

I.3 State Economy

TABLE I.3.5: Centrally-sponsored Scheme (Animal Husbandry and Dairy Development)

Rs. in lakh

	2008-09		2009-10		2010-11		2011-12		Total	
	Grant Released	Expenditure Incurred	Grant Released	Expenditure Incurred	Grant Released	Expenditure Incurred	Grant Released	Expenditure Incurred	Grant Released	Expenditure Incurred
State	235.0	178.0	323.4	358.7	319.0	312.7	323.3	310.0	1,386.3	1,341.2
Districts	2,080.4	1,218.0	1,961.9	1,804.0	1,755.5	1,271.4	3,398.8	3,355.5	11,089.5	9,135.2
Total	2,315.4	1,396.0	2,285.3	2,162.7	2,074.5	1,584.1	3,722.1	3,665.6	12,475.9	10,476.4

SOURCE: Bulletin of Animal Husbandry and Dairying Statistics 2011-12, Directorate of Animal Husbandry, Govt of Gujarat.

PART II: LIVESTOCK CENSUS

The 2007 Livestock Census puts the total livestock population in Gujarat at 23.5 million, which was 8.8 per cent higher than the 2003 Census. The females among the indigenous cattle, crossbred and buffalo population numbered 3.5 million, 0.9 million and 7.8 million, respectively and as for the in-milk females, there was a decline of 5.1 per cent, and increase of 58.4 per cent and 8.8 per cent respectively, over the 2003 Census.

Banaskantha has the highest number of in-milk buffaloes and cows, with Sabarkantha and Mehsana in second and third positions. Sabarkantha has the highest number of in-milk crossbreds, and Kachchh, the highest in in-milk indigenous cattle. In-milk indigenous cattle like Gir are predominantly spread across Saurashtra region covering Rajkot, Junagadh and Bhavnagar districts of Gujarat, whereas Kankrej are found mostly in northern Gujarat and Kachchh region.





II.1. Total Animal Population

TABLE II.1.1: District-wise Total Bovine Population

Districts	Indigenous Cattle ('000)				Crossbred Cattle ('000)				Buffalo ('000)			
	1992	1997	2003	2007	1992	1997	2003	2007	1992	1997	2003	2007
GUJARAT	6,572	6,406	6,785	6,834	231.3	342.5	639.0	1142.2	5,268	6,285	7,140	8,774
Ahmedabad	253	183	217	200	6.0	5.3	9.2	17.4	301	244	277	344
Amreli	289	266	253	261	1.9	1.6	2.3	8.5	152	181	177	201
Anand		88	93	80		29.1	39.0	67.1		303	291	407
Banaskantha	430	357	434	529	7.2	23.0	61.1	131.0	452	538	715	955
Bharuch	279	127	132	103	6.3	7.1	10.0	18.8	156	131	133	154
Bhavnagar	332	324	328	329	5.1	3.6	7.9	11.5	255	280	307	334
Dahod		656	513	582		1.3	2.4	6.9		271	214	284
Gandhinagar	21	70	78	80	0.9	14.2	46.6	68.4	79	222	311	364
Jamnagar	330	318	348	349	0.2	0.8	1.0	1.5	139	174	210	257
Junagadh	479	431	451	467	1.2	3.2	4.8	14.1	308	301	305	378
Kachchh	344	372	331	381	1.1	2.9	4.2	8.0	128	165	178	226
Kheda	242	171	155	147	57.7	14.4	46.0	80.5	654	414	488	628
Mehsana	254	112	105	114	44.1	42.4	55.1	102.6	636	467	478	568
Narmada		136	168	137		3.0	3.1	4.2		51	61	59
Navsari		80	84	61		55.7	80.9	95.6		106	117	102
Panchmahals	944	398	634	537	4.9	5.2	10.1	51.2	462	345	517	616
Patan		128	112	123		3.5	4.5	8.4		261	222	364
Porbandar		76	83	81		0.1	0.1	2.0		79	85	105
Rajkot	438	407	424	430	5.0	9.8	14.9	21.8	206	246	274	362
Sabarkantha	415	401	478	469	22.6	42.1	110.3	151.8	459	589	683	775
Surat	341	322	337	128	22.1	40.0	66.3	98.5	252	330	408	247
Surendranagar	280	272	293	342	0.4	0.2	0.5	4.8	113	165	203	290
Tapi				169				45.1				177
The Dangs	72	67	81	60	0.2		3.1	9.9	16	19	27	21
Vadodara	429	438	444	458	11.7	9.1	16.8	23.7	315	337	386	462
Valsad	401	208	209	219	32.6	25.0	38.9	88.9	187	68	76	97

SOURCE: 15th, 16th, 17th and 18th Livestock Census, Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture, Govt of India.



II.1. Female Animal Population

TABLE II.1.2: District-wise Female Population

Districts	Indigenous Cattle ('000)				Crossbred Cattle ('000)				Buffalo ('000)			
	1992	1997	2003	2007	1992	1997	2003	2007	1992	1997	2003	2007
GUJARAT	3,031	3,251	3,499	3,518	194.5	280.3	521.1	930.7	4,872	5,740	6,473	7,757
Ahmedabad	152	138	174	155	4.8	4.3	7.6	14.1	283	227	255	307
Amreli	140	130	119	122	1.6	1.4	1.6	5.3	140	169	161	179
Anand		64	72	56		26.5	32.6	60.1		287	273	373
Banaskantha	197	202	251	318	6.0	20.4	54.6	113.5	416	490	650	832
Bharuch	106	47	57	48	4.7	6.1	6.0	14.0	143	122	118	134
Bhavnagar	181	184	189	193	2.8	3.0	5.7	8.4	237	250	274	301
Dahod		236	186	216		1.0	1.2	2.4		236	175	220
Gandhinagar	13	47	55	55	0.8	12.5	42.6	63.5	74	205	291	337
Jamnagar	157	157	172	149	0.2	0.7	0.7	0.9	131	165	195	236
Junagadh	227	208	215	225	1.1	2.4	3.1	9.1	291	280	283	341
Kachchh	239	275	253	281	0.8	2.4	3.4	6.3	115	146	161	193
Kheda	99	71	69	70	50.6	12.2	34.1	65.9	614	381	455	566
Mehsana	140	78	76	82	39.9	35.7	49.2	90.0	608	426	452	521
Narmada		52	68	53		1.5	1.3	1.9		43	54	50
Navsari		45	41	32		42.9	67.3	79.9		91	100	83
Panchmahals	308	131	234	192	4.1	3.5	7.0	32.8	418	318	457	540
Patan		87	78	88		3.1	3.8	7.4		247	205	333
Porbandar		37	38	34		0.1	0.0	1.3		76	80	100
Rajkot	226	218	223	227	3.3	6.8	11.0	17.0	194	229	256	329
Sabarkantha	160	177	216	207	19.3	36.6	91.4	136.3	428	544	626	685
Surat	154	167	180	79	17.8	32.1	51.8	72.3	230	297	361	219
Surendranagar	176	199	219	253	0.4	0.2	0.4	3.2	105	154	186	257
Tapi				69				31.3				151
The Dangs	30	32	32	22	0.1		2.6	7.9	5	5	7	5
Vadodara	151	172	179	196	9.3	6.6	11.7	18.8	291	307	346	407
Valsad	178	98	103	96	26.9	18.5	30.5	67.1	149	47	54	61

SOURCE: 15th, 16th, 17th and 18th Livestock Census, Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture, Govt of India.



II.1. Breedable Animal Population

TABLE II.1.3: District-wise Breedable Population

Districts	Indigenous Cattle ('000)				Crossbred Cattle ('000)				Buffalo ('000)			
	1992	1997	2003	2007	1992	1997	2003	2007	1992	1997	2003	2007
GUJARAT	2,276	2,498	2,635	2,569	143.7	207.7	383.8	662.9	3,590	4,377	4,808	5,612
Ahmedabad	119	107	135	113	3.6	3.4	5.7	10.1	206	176	198	222
Amreli	102	98	89	89	1.1	1.0	1.2	3.9	101	127	118	130
Anand		51	56	41		20.8	25.1	44.5		234	210	269
Banaskantha	150	158	185	218	4.5	14.7	38.4	79.5	302	364	462	579
Bharuch	79	35	45	36	3.6	4.5	4.5	9.7	109	92	90	100
Bhavnagar	136	133	143	143	2.0	2.1	4.2	6.2	176	181	204	221
Dahod		177	136	152		0.6	0.9	1.4		175	126	155
Gandhinagar	10	40	43	40	0.5	10.1	32.3	48.2	54	162	214	242
Jamnagar	115	123	130	112	0.2	0.6	0.6	0.7	99	130	149	178
Junagadh	167	163	162	165	0.7	1.8	2.4	6.8	213	220	215	251
Kachchh	175	211	189	205	0.6	1.6	2.7	3.7	86	112	125	143
Kheda	77	54	54	52	38.7	9.3	26.4	47.7	457	285	336	402
Mehsana	110	60	59	62	29.2	27.1	35.8	62.8	445	320	331	372
Narmada		42	52	39		1.1	1.0	1.4		34	40	37
Navsari		33	30	22		29.8	46.8	56.0		68	73	60
Panchmahals	231	105	175	139	3.0	2.6	4.9	23.9	306	242	331	389
Patan		69	60	67		2.5	2.8	5.4		193	153	248
Porbandar		28	29	25		0	0	1.1		58	62	74
Rajkot	169	169	170	169	2.4	5.2	8.4	12.6	144	180	195	243
Sabarkantha	121	135	162	155	13.9	27.2	68.0	96.5	310	407	460	487
Surat	115	124	133	58	13.3	23.8	38.6	50.7	175	227	272	166
Surendranagar	131	148	166	186	0.3	0.1	0.3	2.4	75	111	138	184
Tapi				50.5				21.9				108
The Dangs	22	24	24	17	0.1		1.9	6.0	3	3	6	4
Vadodara	115	135	133	144	7.0	5.0	9.1	14.0	219	239	261	305
Valsad	133	76	76	70	19.0	12.9	21.9	45.9	110	36	40	43

SOURCE: 15th, 16th, 17th and 18th Livestock Census, Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture, Govt of India.



II.1. In-milk Animal Population

TABLE II.1.4: District-wise In-milk Population

Districts	Indigenous Cattle ('000)				Crossbred Cattle ('000)				Buffalo ('000)			
	1992	1997	2003	2007	1992	1997	2003	2007	1992	1997	2003	2007
GUJARAT	1,221	1,346	1,406	1,334	94.6	134.8	250.8	397.2	2,085	2,547	2,794	3,041
Ahmedabad	62	60	64	58	2.0	2.3	3.5	5.5	110	101	116	116
Amreli	61	57	53	51	0.7	0.7	0.7	2.2	62	79	77	79
Anand		30	35	23		13.7	16.8	28.9		138	131	153
Banaskantha	81	82	94	107	2.8	10.4	24.4	48.1	167	201	257	292
Bharuch	38	22	27	16	2.3	3.2	2.9	5.1	64	60	56	55
Bhavnagar	82	77	82	77	1.3	1.5	2.4	3.6	108	106	128	124
Dahod		72	66	67		0.4	0.5	0.6		81	62	75
Gandhinagar	5	28	24	21	0.4	6.0	20.5	32.1	31	84	117	125
Jamnagar	73	73	81	63	0.1	0.5	0.3	0.4	65	81	96	105
Junagadh	101	98	97	91	0.4	1.1	1.7	3.6	129	135	135	145
Kachchh	94	108	95	118	0.4	0.8	1.8	2.2	49	62	65	85
Kheda	46	31	27	29	26.6	6.1	16.7	29.3	281	176	187	202
Mehsana	65	37	32	35	18.9	19.2	24.5	39.7	268	202	199	217
Narmada		19	24	19		0.3	0.6	0.6		17	23	19
Navsari		17	17	12		17.0	30.4	32.3		39	45	34
Panchmahals	91	44	81	63	1.8	1.6	2.8	12.3	145	130	166	190
Patan		37	31	32		1.5	1.9	3.3		111	87	133
Porbandar		18	19	15		0.0	0.0	0.6		37	41	42
Rajkot	103	107	100	93	1.6	3.6	5.1	7.2	87	121	124	141
Sabarkantha	62	71	83	79	8.8	17.2	43.8	58.9	169	223	251	262
Surat	61	68	77	35	9.5	16.0	27.0	29.0	108	145	176	105
Surendranagar	63	73	82	90	0.2	0.1	0.2	1.1	39	60	72	95
Tapi				24				12.8				57
The Dangs	10	8	9	8			1.1	4.4	2	2	3	2
Vadodara	58	74	71	74	4.7	3.3	6.0	8.1	136	138	159	166
Valsad	65	38	37	35	12.0	8.3	15.0	25.1	66	22	24	23

SOURCE: 15th, 16th, 17th and 18th Livestock Census, Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture, Govt of India.





II.1. Milch Animal Population

TABLE II.1.5: District-wise Milch Population

Districts	Indigenous Cattle ('000)				Crossbred Cattle ('000)				Buffalo ('000)			
	1992	1997	2003	2007	1992	1997	2003	2007	1992	1997	2003	2007
GUJARAT	1,878	2,001	2,120	2,004	120.6	169.7	317.9	525.0	2,984	3,533	3,937	4,390
Ahmedabad	104	86	103	90	3.0	2.9	4.7	7.6	172	143	170	174
Amreli	85	80	75	71	0.9	0.8	1.0	3.0	85	104	101	106
Anand		42	47	34		17.3	20.7	36.9		194	172	208
Banaskantha	128	125	150	166	3.8	12.6	32.3	64.0	251	289	377	442
Bharuch	64	27	37	27	2.9	3.5	3.5	6.7	92	75	74	79
Bhavnagar	113	113	115	116	1.6	1.8	3.0	4.9	147	155	171	181
Dahod		138	107	109		0.5	0.7	1.0		137	96	116
Gandhinagar	8	35	37	32	0.5	8.0	26.3	40.8	44	114	171	192
Jamnagar	95	103	109	87	0.1	0.5	0.4	0.6	83	107	127	143
Junagadh	141	136	134	131	0.5	1.5	2.1	5.1	176	183	182	201
Kachchh	144	169	153	171	0.5	1.1	2.2	3.2	73	90	105	119
Kheda	65	43	42	42	33.1	7.8	22.0	39.1	380	234	268	301
Mehsana	94	49	49	51	24.6	22.7	30.2	50.0	375	262	272	299
Narmada		33	41	28		0.5	0.8	1.0		28	33	28
Navsari		25	24	16		23.4	38.1	42.8		53	59	46
Panchmahals	184	73	133	103	2.4	2.1	3.8	18.3	247	188	257	298
Patan		57	50	53		1.8	2.4	4.5		162	128	203
Porbandar		24	24	21		0.0	0.0	0.9		48	52	59
Rajkot	143	142	141	136	2.0	4.5	6.8	10.1	121	154	164	197
Sabarkantha	99	100	127	121	11.4	22.2	56.4	76.7	251	310	365	373
Surat	92	97	106	46	11.3	19.4	32.4	38.5	148	188	227	135
Surendranagar	109	122	134	145	0.3	0.1	0.2	1.7	61	91	112	143
Tapi				37				16.8				83
The Dangs	16	17	17	13	0.0		1.6	5.1	3	3	5	3
Vadodara	93	107	108	108	5.8	4.2	7.8	11.0	187	192	219	230
Valsad	102	59	58	51	15.7	10.5	18.4	34.6	90	29	32	32

Source: 15th, 16th, 17th and 18th Livestock Census, Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture, Govt of India



II.1. Male Animal Population

TABLE II.1.6: District-wise Male Population

Districts	Indigenous Cattle ('000)				Crossbred Cattle ('000)				Buffalo ('000)			
	1992	1997	2003	2007	1992	1997	2003	2007	1992	1997	2003	2007
GUJARAT	3,541	3,155	3,286	3,316	36.8	62.1	117.8	211.5	396	544	667	1,016
Ahmedabad	100	45	43	44	1.2	1.0	1.6	3.3	18	17	22	37
Amreli	149	137	134	139	0.3	0.3	0.7	3.2	12	12	16	21
Anand		24	20	24		2.7	6.3	7.0		16	19	34
Banaskantha	234	154	183	212	1.2	2.6	6.4	17.5	36	48	65	123
Bharuch	173	80	75	56	1.6	0.9	3.9	4.7	13	9	15	20
Bhavnagar	151	140	140	136	2.3	0.6	2.3	3.1	18	29	33	34
Dahod		420	327	366		0.3	1.2	4.5		34	39	64
Gandhinagar	8	23	23	25	0.1	1.7	4.0	4.8	5	18	20	27
Jamnagar	173	161	176	200	0.0	0.1	0.3	0.6	8	9	15	21
Junagadh	252	223	235	243	0.1	0.9	1.8	5.0	17	21	22	37
Kachchh	105	97	78	100	0.3	0.6	0.8	1.7	13	19	17	33
Kheda	143	100	86	76	7.1	2.2	11.9	14.6	39	33	34	62
Mehsana	114	34	29	32	4.2	6.7	5.8	12.6	28	41	26	47
Narmada		84	100	83		1.5	1.8	2.3		8	7	9
Navsari		35	43	29		12.7	13.6	15.6		15	16	19
Panchmahals	636	267	401	346	0.8	1.7	3.1	18.4	44	27	60	76
Patan		41	34	34		0.4	0.7	1.0		14	17	30
Porbandar		40	46	48		0.0	0.0	0.7		3	4	6
Rajkot	212	189	201	203	1.7	2.9	3.9	4.8	12	17	18	34
Sabarkantha	255	225	262	261	3.3	5.5	19.0	15.5	32	45	57	90
Surat	187	155	158	49	4.2	7.9	14.6	26.2	22	33	47	28
Surendranagar	105	73	74	89	0.0	0.0	0.1	1.6	8	12	17	34
Tapi				101				13.9				25
The Dangs	41	35	49	38	0.1		0.5	1.9	11	14	21	16
Vadodara	278	266	265	262	2.4	2.5	5.1	4.9	24	31	39	56
Valsad	224	110	106	123	5.7	6.5	8.4	21.8	38	21	22	36

SOURCE: 15th, 16th, 17th and 18th Livestock Census, Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture, Govt of India.



II.2. Sex Ratio in Dairy Animals

TABLE II.2.1: District-wise Male-Female Ratio

Districts	Indigenous Cattle (%)				Crossbred Cattle (%)				Buffalo (%)			
	1992	1997	2003	2007	1992	1997	2003	2007	1992	1997	2003	2007
GUJARAT	54	49	48	50	16	18	18	19	8	9	9	12
Ahmedabad	40	24	20	22	20	18	18	19	6	7	8	11
Amreli	52	51	53	53	14	16	29	37	8	7	9	11
Anand		27	22	30		9	19	11		5	6	8
Banaskantha	54	43	42	40	16	12	11	13	8	9	9	13
Bharuch	62	63	57	54	25	13	39	25	8	7	11	13
Bhavnagar	46	43	43	41	45	17	29	27	7	10	11	10
Dahod		64	63	63		24	50	66		13	18	23
Gandhinagar	39	33	29	32	14	12	9	7	6	8	6	8
Jamnagar	53	51	50	57		13	27	41	6	5	7	8
Junagadh	53	52	52	52	12	27	37	36	5	7	7	10
Kachchh	30	26	23	26	26	20	19	21	10	12	10	15
Kheda	59	59	55	52	12	15	26	18	6	8	7	10
Mehsana	45	30	28	28	9	16	11	12	4	9	5	8
Narmada		62	59	61		49	57	55		15	12	14
Navsari		44	51	48		23	17	16		14	14	19
Panchmahals	67	67	63	64	17	33	31	36	9	8	12	12
Patan		32	31	28		11	15	11		5	8	8
Porbandar		52	55	59		7	11	33		4	5	5
Rajkot	48	46	47	47	35	30	26	22	6	7	7	9
Sabarkantha	62	56	55	56	15	13	17	10	7	8	8	12
Surat	55	48	47	38	19	20	22	27	9	10	12	11
Surendranagar	37	27	25	26	5	13	18	34	7	7	8	12
Tapi				59				31				14
The Dangs	58	52	61	63	50	0	16	20	71	75	76	76
Vadodara	65	61	60	57	20	27	30	21	8	9	10	12
Valsad	56	53	51	56	18	26	22	25	20	31	29	37

SOURCE: Estimated from 15th, 16th, 17th and 18th Livestock Census, Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture, Govt of India.



II.3. Wet-Dry Ratio of Dairy Animals

TABLE II.3.1: District-wise Wet-Dry Ratio

Districts	Indigenous Cattle (%)				Crossbred Cattle (%)				Buffalo (%)			
	1992	1997	2003	2007	1992	1997	2003	2007	1992	1997	2003	2007
GUJARAT	65	67	66	67	78	79	79	76	70	72	71	69
Ahmedabad	60	69	62	65	67	81	74	72	64	70	68	66
Amreli	72	71	70	72	81	81	75	75	73	76	76	75
Anand		70	74	69		79	81	78		71	76	73
Banaskantha	64	65	63	64	75	83	76	75	66	70	68	66
Bharuch	59	83	73	60	77	91	84	76	70	80	76	69
Bhavnagar	72	68	72	67	79	84	78	74	74	68	75	68
Dahod		53	61	61		78	63	66		59	65	64
Gandhinagar	64	79	66	65	81	75	78	79	70	74	68	65
Jamnagar	77	71	74	73	80	91	69	73	79	75	76	74
Junagadh	72	72	72	69	81	74	82	71	73	74	74	72
Kachchh	65	64	62	69	78	75	80	68	67	70	62	71
Kheda	71	73	65	68	80	78	76	75	74	75	70	67
Mehsana	70	76	66	69	77	84	81	79	72	77	73	73
Narmada		57	59	66		62	77	65		59	71	69
Navsari		70	73	71		72	80	75		74	77	74
Panchmahals	50	60	61	61	73	74	75	67	59	69	64	64
Patan		65	61	60		82	77	74		69	68	65
Porbandar		76	76	71		82	82	66		76	78	71
Rajkot	72	75	71	68	78	81	76	72	72	78	76	71
Sabarkantha	63	71	65	66	77	78	78	77	67	72	69	70
Surat	66	70	72	77	83	83	83	75	73	77	77	78
Surendranagar	58	60	61	62	72	81	74	65	64	65	64	66
Tapi				66				31				69
The Dangs	62	43	54	66	73	0	74	86	67	67	60	67
Vadodara	62	69	66	69	81	79	77	74	73	72	73	72
Valsad	63	64	65	69	77	79	82	72	73	74	74	73

SOURCE: Estimated from 15th, 16th, 17th and 18th Livestock Census, Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture, Govt of India.



II.4. Livestock and Bovine Animal Density

TABLE II.4.1: District-wise Livestock and Bovine Density

Districts	Livestock (No. per sq km)				Bovine (No. per sq km)			
	1992	1997	2003	2007	1992	1997	2003	2007
GUJARAT	94	101	110	112	62	66	74	72
Ahmedabad	89	66	83	89	64	50	62	69
Amreli	102	110	98	100	65	66	58	63
Anand			176	222			144	188
Banaskantha	124	136	162	201	70	72	112	150
Bharuch	73	65	67	65	49	29	42	42
Bhavnagar	103	104	118	114	53	54	64	68
Dahod			307	391			199	239
Gandhinagar	186	172	233	272	156	141	201	237
Jamnagar	60	64	70	71	33	35	40	43
Junagadh	96	88	110	116	74	69	86	97
Kachchh	31	36	33	37	10	12	11	13
Kheda	157	175	201	240	132	142	163	203
Mehsana	130	169	172	205	103	142	146	179
Narmada			122	99			84	73
Navsari			176	150			127	117
Panchmahals	230	201	312	323	159	143	223	231
Patan			90	116			59	86
Porbandar			101	105			73	82
Rajkot	104	102	110	111	58	59	64	73
Sabarkantha	170	187	227	248	121	140	172	189
Surat	102	118	137	77	80	90	106	62
Surendranagar	65	68	77	92	38	42	47	61
Tapi								222
The Dangs	71	71	88	77	11	11	15	12
Vadodara	138	140	159	168	144	150	279	311
Valsad	163	144	151	186	118	99	106	133

SOURCE: Estimated from 15th, 16th, 17th and 18th Livestock Census, Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture, Govt of India.



II.4. Small Ruminants and Poultry Density

TABLE II.4.2: District-wise Small Ruminants and Poultry Density

Districts	Small Ruminants (No. per sq km)				Poultry (No. per sq km)			
	1992	1997	2003	2007	1992	1997	2003	2007
GUJARAT	32	33	34	34	11	37	42	59
Ahmedabad	21	14	17	18	19	10	4	56
Amreli	36	43	38	37	4	2	2	2
Anand			28	29		706	786	1,562
Banaskantha	53	41	47	44	15	12	11	25
Bharuch	23	22	22	22	43	30	27	42
Bhavnagar	49	49	49	46	17	36	60	125
Dahod			106	140		160	114	162
Gandhinagar	29	27	29	29	18	43	27	86
Jamnagar	26	28	29	27	3	2	2	3
Junagadh	21	17	20	17	13	11	12	8
Kachchh	23	29	34	35	253	183	111	109
Kheda	20	24	21	23	1		1	1
Mehsana	25	25	22	23	12	7	13	26
Narmada			36	26		34	52	45
Navsari			41	31		164	253	276
Panchmahals	70	55	87	86	145	66	79	92
Patan			28	27		1	2	4
Porbandar			26	20		2	7	13
Rajkot	45	42	44	37	5	7	12	16
Sabarkantha	48	47	52	56	32	29	40	54
Surat	21	24	28	14	84	100	125	100
Surendranagar	27	25	27	31	1		1	
Tapi								67
The Dangs	22	22	24	21	25	53	86	89
Vadodara	40	38	42	42	41	89	111	234
Valsad	43	44	43	49	93	169	238	344

SOURCE: Estimated from 15th, 16th, 17th and 18th Livestock Census, Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture, Govt of India.



II.5. Indigenous Breed-wise Population

TABLE II.5.1: District & Breed-wise Indigenous Cattle Population – 2007

Districts	Indigenous Cattle ('000)				
	Dangi	Gir	Kankrej	Nondescript	Total Indigenous Cattle
GUJARAT	208.9	1,399.7	2,681.8	2,543.2	6,833.5
Ahmedabad		28.0	155.0	16.4	199.5
Amreli		176.4	71.4	12.7	260.5
Anand	0.2	14.4	41.2	24.3	80.0
Banaskantha	1.1	0.5	439.7	87.7	529.1
Bharuch	3.0	9.9	35.6	54.7	103.1
Bhavnagar		211.5	74.6	42.5	328.6
Dahod	0.7	2.1	46.0	532.9	581.6
Gandhinagar		1.3	78.7	0.0	80.1
Jamnagar		117.1	163.7	67.7	348.5
Junagadh	0.3	269.9	105.4	91.4	467.0
Kachchh	2.2	3.8	330.3	44.4	380.7
Kheda	1.9	17.5	108.0	19.2	146.5
Mehsana	1.7	2.9	105.0	4.1	113.7
Narmada	55.7	4.1	38.8	37.9	136.6
Navsari	8.6	4.4	6.4	41.3	60.7
Panchmahals	9.6	10.4	106.6	410.7	537.4
Patan	0.1	0.2	121.6	0.7	122.7
Porbandar		21.5	42.6	17.1	81.1
Rajkot	0.2	262.4	98.4	68.8	429.9
Sabarkantha		8.6	145.0	315.2	468.9
Surat	14.4	39.1	43.4	31.4	128.4
Surendranagar		129.9	150.9	61.2	342.0
Tapi	53.4	12.5	24.3	79.2	169.4
The Dangs	55.5	0.6	0.3	3.7	60.1
Vadodara		41.2	137.2	279.9	458.2
Valsad		9.6	11.5	198.2	219.3

SOURCE: 18th Livestock Census, Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture, Govt of India.





II.5. Indigenous Breed-wise Population

TABLE II.5.2: District-wise Male, Female and Milch Animals of Indigenous Breeds – 2007

Districts	Dangi ('000)			Gir ('000)			Kankrej ('000)		
	Male	Milch	Female	Male	Milch	Female	Male	Milch	Female
GUJARAT	120.3	48.9	88.5	558.4	496.5	841.3	1,225.0	842.6	1456.7
Ahmedabad				6.0	12.5	22.0	33.7	70.7	121.4
Amreli				72.3	61.3	104.1	61.5	5.7	9.9
Anand		0.1	0.1	4.2	6.2	10.1	13.5	16.7	27.7
Banaskantha	0.5	0.5	0.6	0.2	0.1	0.3	173.3	138.3	266.4
Bharuch	1.5	1.0	1.5	4.3	3.2	5.5	21.5	8.5	14.1
Bhavnagar				72.6	82.9	138.9	45.4	17.9	29.2
Dahod	0.4	0.1	0.2	1.5	0.4	0.6	30.7	8.9	15.3
Gandhinagar				0.3	0.5	1.0	25.0	31.4	53.7
Jamnagar				54.3	37.8	62.8	105.4	33.6	58.3
Junagadh	0.2	0.1	0.1	133.8	78.8	136.1	64.7	24.0	40.7
Kachchh	0.4	1.0	1.9	1.3	1.2	2.5	85.6	148.9	244.6
Kheda	1.2	0.4	0.7	4.6	7.4	12.9	60.2	28.8	47.8
Mehsana	0.7	0.6	1.1	0.7	1.3	2.2	29.1	47.1	75.9
Narmada	34.3	11.7	21.5	2.2	1.2	1.9	23.6	8.3	15.2
Navsari	4.7	2.3	3.9	1.1	1.7	3.3	3.3	1.6	3.1
Panchmahals	5.1	2.4	4.6	4.9	3.6	5.6	72.5	19.3	34.2
Patan			0.1	0.1	0.1	0.1	33.8	53.2	87.9
Porbandar				12.5	5.6	9.0	27.2	9.5	15.3
Rajkot			0.2	108.4	93.7	154.1	67.4	18.3	31.0
Sabarkantha				3.0	3.1	5.7	89.7	31.6	55.3
Surat	5.7	4.8	8.8	10.9	16.8	28.2	18.8	14.0	24.7
Surendranagar				34.7	54.9	95.2	40.4	63.7	110.6
Tapi	30.9	12.3	22.6	5.4	3.6	7.0	15.5	4.8	8.9
The Dangs	34.9	11.5	20.6	0.6			0.2		
Vadodara				13.7	16.2	27.4	77.2	35.3	59.9
Valsad				4.9	2.6	4.7	5.9	2.8	5.6

SOURCE: 18th Livestock Census, Directorate of Animal Husbandry, Govt of Gujarat, Gandhinagar.



II.5. Exotic Breed-wise Population

TABLE II.5.3: District & Breed-wise Exotic and Crossbred Population – 2007

Districts	Exotic and Crossbred Cattle ('000)			
	Jersey Exotic & Crossbred	Holstein Friesian Exotic & Crossbred	Other Exotic & Crossbred	Total Exotic & Crossbred Cattle
GUJARAT	411.2	618.3	112.8	1,142.2
Ahmedabad	7.8	7.6	2.0	17.4
Amreli	3.7	1.7	3.1	8.5
Anand	40.2	19.7	7.3	67.3
Banaskantha	24.1	97.3	9.7	131
Bharuch	11.3	6.2	1.2	18.8
Bhavnagar	7.4	4.1	0	11.5
Dahod	5.7	0.2	1.0	6.9
Gandhinagar	13.0	53.8	1.6	68.4
Jamnagar	0.8	0.5	0.2	1.5
Junagadh	8.3	3.5	2.3	14.1
Kachchh	3.3	0.7	4.1	8.0
Kheda	24.2	50.5	5.8	80.5
Mehsana	20.7	78.8	3.1	102.6
Narmada	2.2	1.4	0.5	4.2
Navsari	37.3	47.3	11.0	95.6
Panchmahals	20.7	18.6	12.0	51.2
Patan	2.4	5.1	0.9	8.4
Porbandar	1.3	0.6	0.1	2.0
Rajkot	16.2	4.8	0.8	21.8
Sabarkantha	41.6	97.2	13.0	151.8
Surat	44.2	43	11.3	98.5
Surendranagar	2.3	0.2	2.3	4.8
Tapi	24.0	16.1	5.1	45.1
The Dangs		9.9		9.9
Vadodara	13.0	10.6		23.7
Valsad	35.4	39.1	14.5	88.9

SOURCE: 18th Livestock Census, Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture, Govt of India.



II.5. Breed-wise Crossbred Population

TABLE II.5.4: District-wise Male, Female and Milch Animals of Jersey, Holstein & Other Crossbreds – 2007

Districts	Jersey Crossbred ('000)			Holstein Crossbred ('000)			Other Crossbreds ('000)		
	Male	Milch	Female	Male	Milch	Female	Male	Milch	Female
GUJARAT	92.8	178.6	318.3	87.9	302.6	530.4	30.8	43.7	82.0
Ahmedabad	1.1	3.8	6.7	1.7	3.1	5.9	0.5	0.7	1.5
Amreli	1.4	1.4	2.3	0.6	0.6	1.1	1.2	1.1	1.9
Anand	4.2	22.5	36.1	2.0	11.0	17.7	1.0	3.5	6.3
Banaskantha	3.5	11.9	20.6	11.8	47.5	85.5	2.3	4.5	7.4
Bharuch	3.1	3.7	8.3	1.2	2.6	5.1	0.5	0.4	0.7
Bhavnagar	2.1	3.0	5.3	0.9	1.9	3.1			
Dahod	4.0	0.7	1.7	0.1		0.1	0.4	0.3	0.6
Gandhinagar	0.9	7.5	12.1	3.8	32.5	50.0	0.2	0.8	1.4
Jamnagar	0.3	0.3	0.5	0.2	0.2	0.3	0.1	0.1	0.1
Junagadh	2.5	3.2	5.8	1.6	1.2	1.9	0.9	0.7	1.3
Kachchh	0.7	1.4	2.6	0.1	0.5	0.6	0.9	1.3	3.1
Kheda	6.6	10.4	17.6	6.0	26.6	44.5	2.0	2.1	3.8
Mehsana	3.7	8.6	17.1	8.3	40.1	70.4	0.6	1.3	2.5
Narmada	1.1	0.6	1.1	0.8	0.3	0.6	0.4	0.1	0.2
Navsari	6.4	16.4	30.8	6.9	21.9	40.5	2.4	4.5	8.6
Panchmahals	7.5	7.4	13.1	6.3	6.8	12.3	4.6	4.0	7.3
Patan	0.3	1.4	2.1	0.6	2.7	4.6	0.1	0.4	0.8
Porbandar	0.6	0.5	0.7		0.3	0.5		0.1	0.1
Rajkot	3.8	7.2	12.5	0.9	2.4	3.9	0.1	0.5	0.7
Sabarkantha	5.2	20.6	36.4	8.1	50.1	89.1	2.2	6.0	10.8
Surat	12.0	17.6	32.2	10.3	17.2	32.7	4.0	3.7	7.3
Surendranagar	0.8	0.9	1.5	0.1	0.1	0.1	0.7	0.8	1.6
Tapi	7.5	8.7	16.5	4.3	6.5	11.8	2.1	1.6	3.0
The Dangs				1.9	5.1	7.9			
Vadodara	2.9	5.9	10.2	2.1	5.1	8.6			
Valsad	10.7	13.1	24.6	7.6	16.2	31.5	3.5	5.3	10.9

SOURCE: 18th Livestock Census, Directorate of Animal Husbandry, Govt of Gujarat, Gandhinagar.



II.5. Breed-wise Buffalo Population

TABLE II.5.5: District & Breed-wise Buffalo Population – 2007

Districts	Buffalo Breed Population ('000)					
	Banni	Jaffarabadi	Mehsana	Surti	Nondescript	Total Buffalo
GUJARAT	525.0	1,470.0	3,370.2	1,556.9	1,851.5	8,773.6
Ahmedabad	4.2	12.5	263.9	39.8	23.3	343.7
Amreli		193.1	2.5	1.0	4.0	200.6
Anand	21.9	10.8	61.3	266.4	46.6	407.1
Banaskantha	35.1	0.5	880.2	4.4	34.9	955.2
Bharuch	4.3	8.8	29.8	73.0	37.9	153.8
Bhavnagar	1.9	276.0	10.8	4.1	41.3	334.1
Dahod	2.5	1.8	10.0	31.9	237.6	283.8
Gandhinagar	18.7	0.3	323.6	21.5		364.0
Jamnagar		190.5	6.7	4.2	55.4	256.8
Junagadh	7.9	275.8	9.6	6.4	77.9	377.5
Kachchh	168.9	3.0	11.1	0.4	42.5	226.0
Kheda	39.7	4.1	111.4	421.9	50.6	627.8
Mehsana	8.4	0.8	554.7	0.6	3.1	567.6
Narmada	1.2	0.4	12.4	34.6	10.3	59.0
Navsari	1.5	2.9	15.6	58.8	23.2	102.1
Panchmahals	8.4	5.5	56.8	150.5	394.7	616.0
Patan	12.3		350.4	0.8	0.1	363.5
Porbandar	0.6	83.0	0.8		20.9	105.3
Rajkot	17.6	245.3	34.3	1.6	63.2	362.0
Sabarkantha	78.6	7.1	322.1	34.1	333.0	774.9
Surat	11.2	35.4	96.8	91.4	11.7	246.6
Surendranagar	55.6	89.1	77.5		67.9	290.1
Tapi	6.4	12.4	48.6	82.9	26.2	176.5
The Dangs			2.2	13.5	5.0	20.7
Vadodara	14.3	5.9	49.4	200.1	192.7	462.4
Valsad	3.7	4.8	27.5	12.9	47.5	96.5

SOURCE: 18th Livestock Census, Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture, Govt of India.



II.5. Breed-wise Buffalo Population

TABLE II.5.6: District-wise Male, Female and Milch Animals of Banni and Mehsana Breeds – 2007

Districts	Banni ('000)			Mehsana ('000)		
	Male	Milch	Female	Male	Milch	Female
GUJARAT	70.4	263.5	454.6	359.6	1,696.4	3,010.7
Ahmedabad	0.4	2.1	3.8	28.1	133.4	235.8
Amreli				0.8	0.9	1.8
Anand	2.6	11.1	19.3	6.4	31.2	54.9
Banaskantha	6.2	15.9	28.9	111.2	408.4	768.9
Bharuch	0.7	2.2	3.6	4.1	15.2	25.7
Bhavnagar	0.2	1.1	1.7	1.2	5.5	9.6
Dahod	0.5	1.3	2.0	1.6	4.7	8.4
Gandhinagar	1.5	9.5	17.2	23.9	172.7	299.7
Jamnagar				1.0	3.7	5.7
Junagadh	1.1	3.7	6.8	1.5	4.4	8.1
Kachchh	26.1	89.0	142.8	1.6	5.4	9.5
Kheda	4.9	18.8	34.8	12.2	55.7	99.2
Mehsana	0.7	4.9	7.7	45.4	292.7	509.3
Narmada	0.1	0.5	1.1	1.7	6.1	10.7
Navsari	0.2	0.7	1.4	2.7	7.3	12.9
Panchmahals	1.0	4.3	7.5	8.1	27.3	48.8
Patan	1.0	5.9	11.3	29.2	196.8	321.2
Porbandar		0.4	0.6	0.1	0.5	0.7
Rajkot	1.6	9.4	16.0	3.0	17.8	31.3
Sabarkantha	8.7	38.6	69.9	33.8	154.5	288.4
Surat	2.0	4.9	9.3	11.0	55.1	85.8
Surendranagar	6.7	27.8	48.9	8.5	37.2	69.0
Tapi	1.0	2.9	5.3	7.5	22.7	41.1
The Dangs				1.5	0.4	0.7
Vadodara	1.4	7.9	12.8	6.7	25.2	42.7
Valsad	1.7	0.8	2.0	6.7	11.5	20.8

SOURCE: 18th Livestock Census, Directorate of Animal Husbandry, Govt of Gujarat, Gandhinagar.



II.5. Breed-wise Buffalo Population

TABLE II.5.7: District-wise Male, Female and Milch Animals of Jaffarabadi and Surti Breeds – 2007

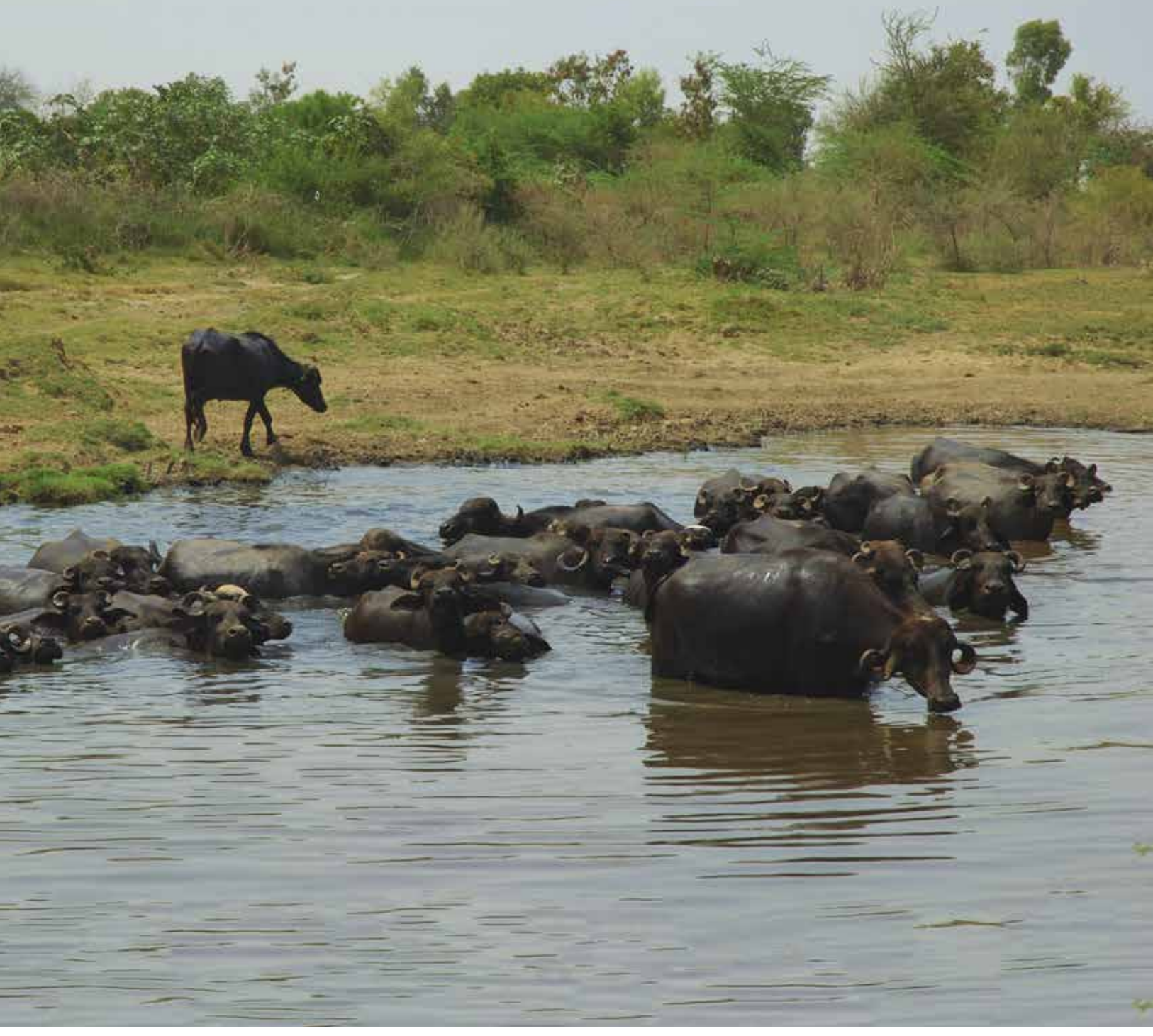
Districts	Jaffarabadi ('000)			Surti ('000)		
	Male	Milch	Female	Male	Milch	Female
GUJARAT	140.1	797.0	1,329.9	178.0	754.6	1,378.9
Ahmedabad	1.5	6.4	11.0	3.6	20.5	36.2
Amreli	19.8	102.7	173.2	0.3	0.4	0.7
Anand	1.1	5.4	9.7	19.8	137.2	246.6
Banaskantha	0.1	0.2	0.4	1.1	1.8	3.3
Bharuch	1.3	4.8	7.5	8.8	38.1	64.2
Bhavnagar	27.0	149.6	249.0	0.4	2.2	3.6
Dahod	0.2	0.8	1.5	6.0	14.1	25.8
Gandhinagar	0	0.2	0.2	2.0	9.9	19.5
Jamnagar	14.0	107.1	176.5	1.1	2.1	3.0
Junagadh	26.1	148.3	249.7	0.7	2.9	5.7
Kachchh	0.5	1.4	2.6	0.1	0.2	0.4
Kheda	0.5	2.3	3.7	39.1	199.8	382.9
Mehsana	0.1	0.5	0.8	0.1	0.3	0.5
Narmada	0.1	0.2	0.3	5.4	16.3	29.2
Navsari	0.6	1.3	2.4	10.3	26.2	48.6
Panchmahals	1.1	2.0	4.5	18.0	70.6	132.5
Patan				0.1	0.4	0.7
Porbandar	4.7	46.5	78.3			
Rajkot	23.1	135.4	222.1	0.2	0.8	1.4
Sabarkantha	0.7	3.6	6.4	3.9	17.0	30.2
Surat	3.6	21.3	31.9	9.6	47.4	81.9
Surendranagar	10.8	45.3	78.3			
Tapi	1.8	6.2	10.6	11.6	38.6	71.3
The Dangs				10.3	1.7	3.2
Vadodara	0.8	3.0	5.1	20.8	101.6	179.3
Valsad	0.7	2.5	4.2	4.7	4.6	8.2

SOURCE: 18th Livestock Census, Directorate of Animal Husbandry, Govt of Gujarat, Gandhinagar.

PART III: CATTLE BREEDS

India has a total 137 breeds of domesticated animals, of which about 18 breeds, including some internationally recognised ones, are available in Gujarat. The State has high-quality, high-yielding breeds of cattle and buffaloes. The Gir and Kankrej breeds of cows and Jaffarabadi, Mehsana, and Surti breeds of buffaloes are well known for their high milk-yield capacity and constitute a valuable genetic resource.

With the recognition of the Banni breed by the National Bureau of Animal Genetic Resources (NBAGR), Gujarat is now proud home to four major buffalo breeds of the total 12 recognised breeds in India.



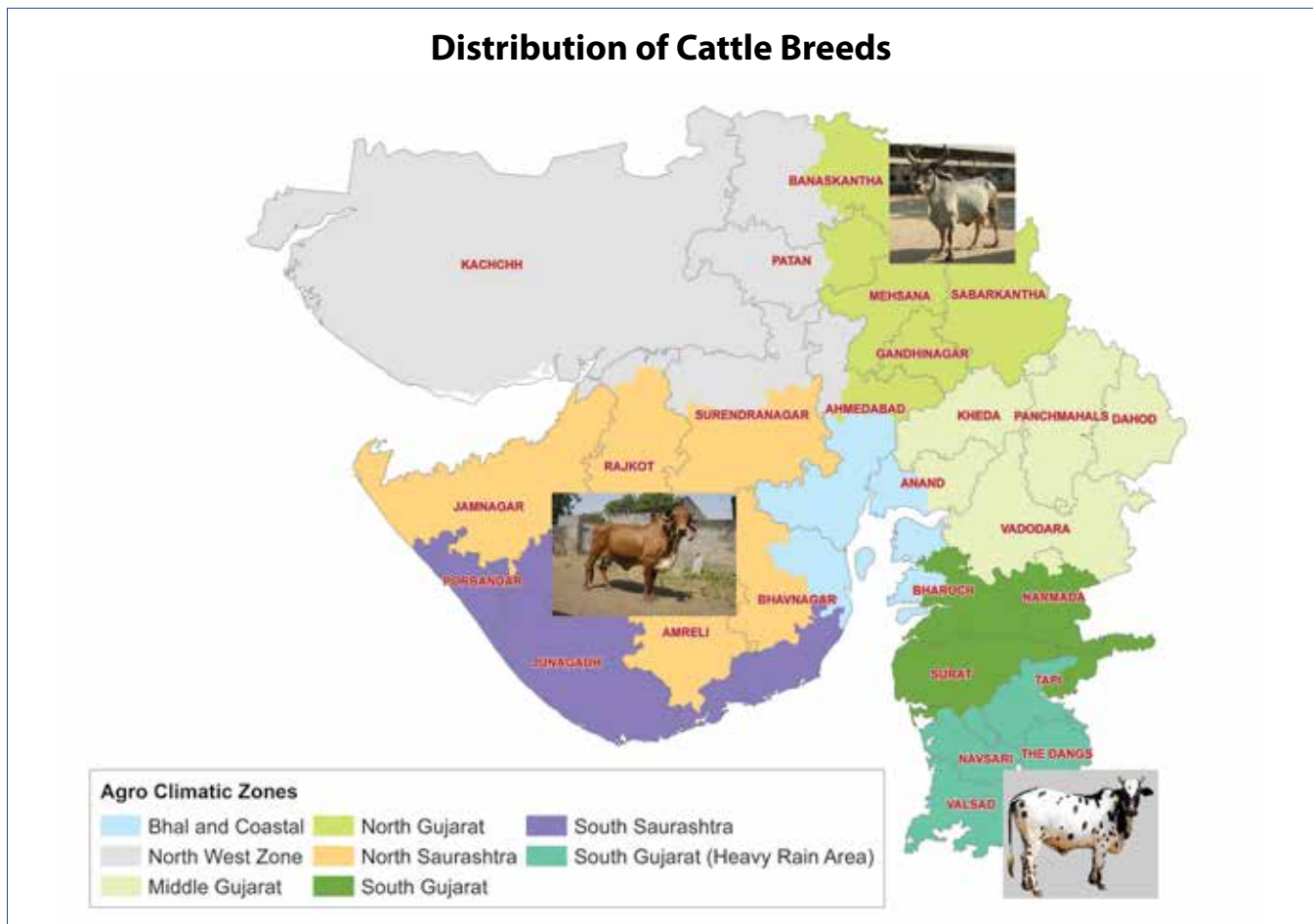


III.1. Distribution of Native Breeds of Gujarat

TABLE III.1.1: Distribution of Gujarat's Cattle Breeds

Breeds	Breeding Tract	Utility	Distribution
Gir	Junagadh, Bhavnagar, Amreli, Porbandar and Rajkot districts.	Milch	Rajasthan, Madhya Pradesh and Maharashtra. Exported to Brazil, Mexico, USA and Venezuela.
Kankrej	South-west Rann of Kachchh comprising Mehsana, Kachchh, Ahmedabad, Kheda, Sabarkantha and Banaskantha districts.	Dual	Western Rajasthan. Nomadic herds of this breed are also found in Madhya Pradesh, Maharashtra, Uttar Pradesh and Haryana.
Dangi	The Dangs, Valsad, Panchmahals and Dahod districts. Sizeable numbers of this breed are also found in Nashik and Ahmednagar districts of Maharashtra.	Draught	Parts of northern Maharashtra

SOURCE: AE Nivsarkar et al., (2000), Animal Genetic Resources of India, Cattle and Buffalo, ICAR publication.



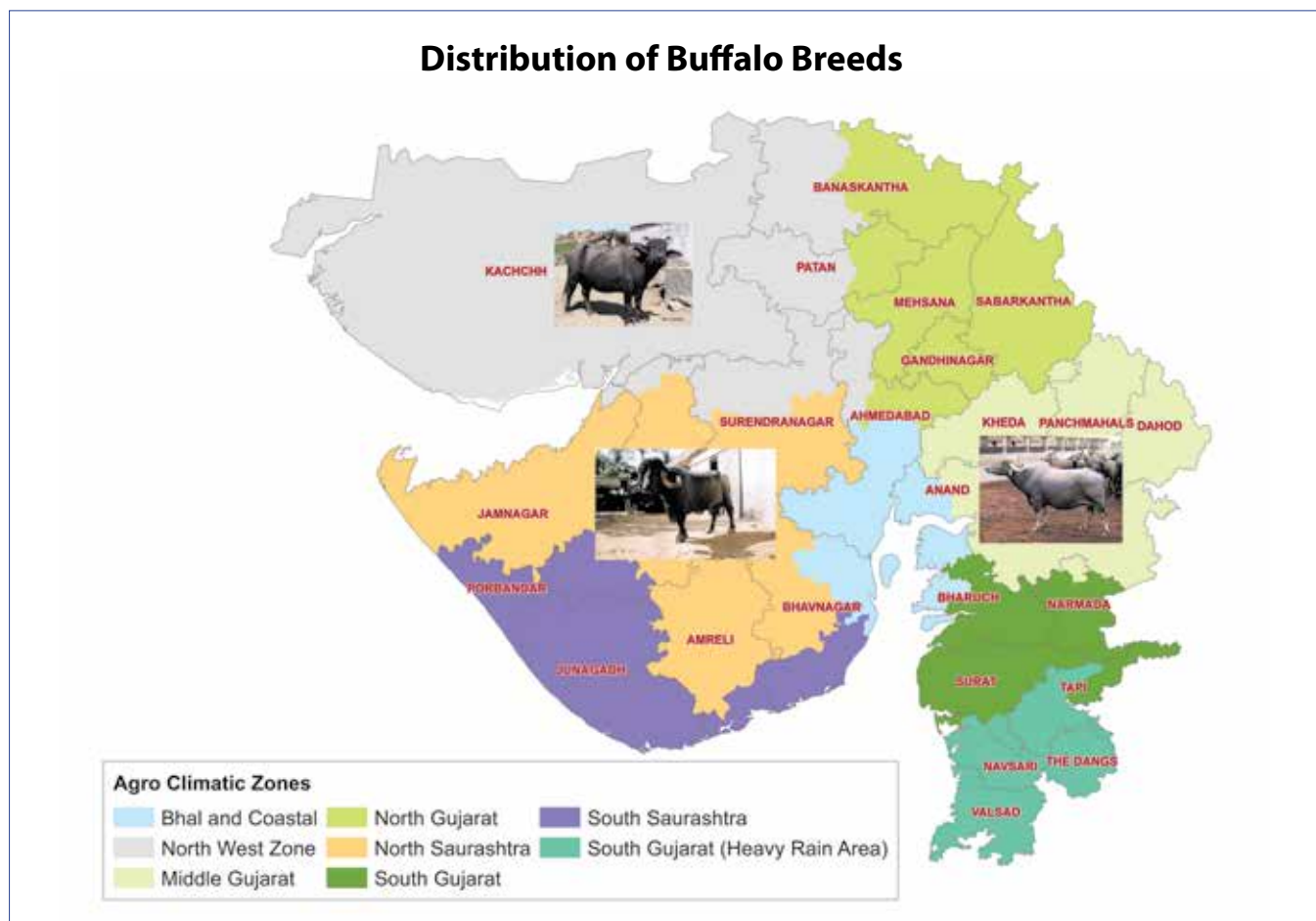


III.1. Distribution of Native Breeds of Gujarat

TABLE III.1.2: Distribution of Gujarat’s Buffalo Breeds

Breeds	Breeding Tract	Utility	Distribution
Jaffarabadi	Found in Junagadh, Amreli, Bhavnagar, Porbandar and Rajkot districts.	Milch	Bulls and herds of this breed have been introduced for breed improvement programmes in Maharashtra.
Mehsana	Found in Mehsana, Patan, Banaskantha and Sabarkantha districts.	Milch	Northern Gujarat
Surti	Found in Kheda, Anand, Vadodara, Bharuch and Surat districts.	Milch	In the border districts of Rajasthan.
Banni	Found in Kachchh and Patan districts.	Milch	Kachchh

SOURCE: AE Nivsarkar et al., (2000), Animal Genetic Resources of India, Cattle and Buffalo, ICAR publication.





Native Breeds of Gujarat



Gir



Kankrej



Dangi



Jaffarabadi



Surti



Mehsana



Banni



III. 2. Performance of Breeds

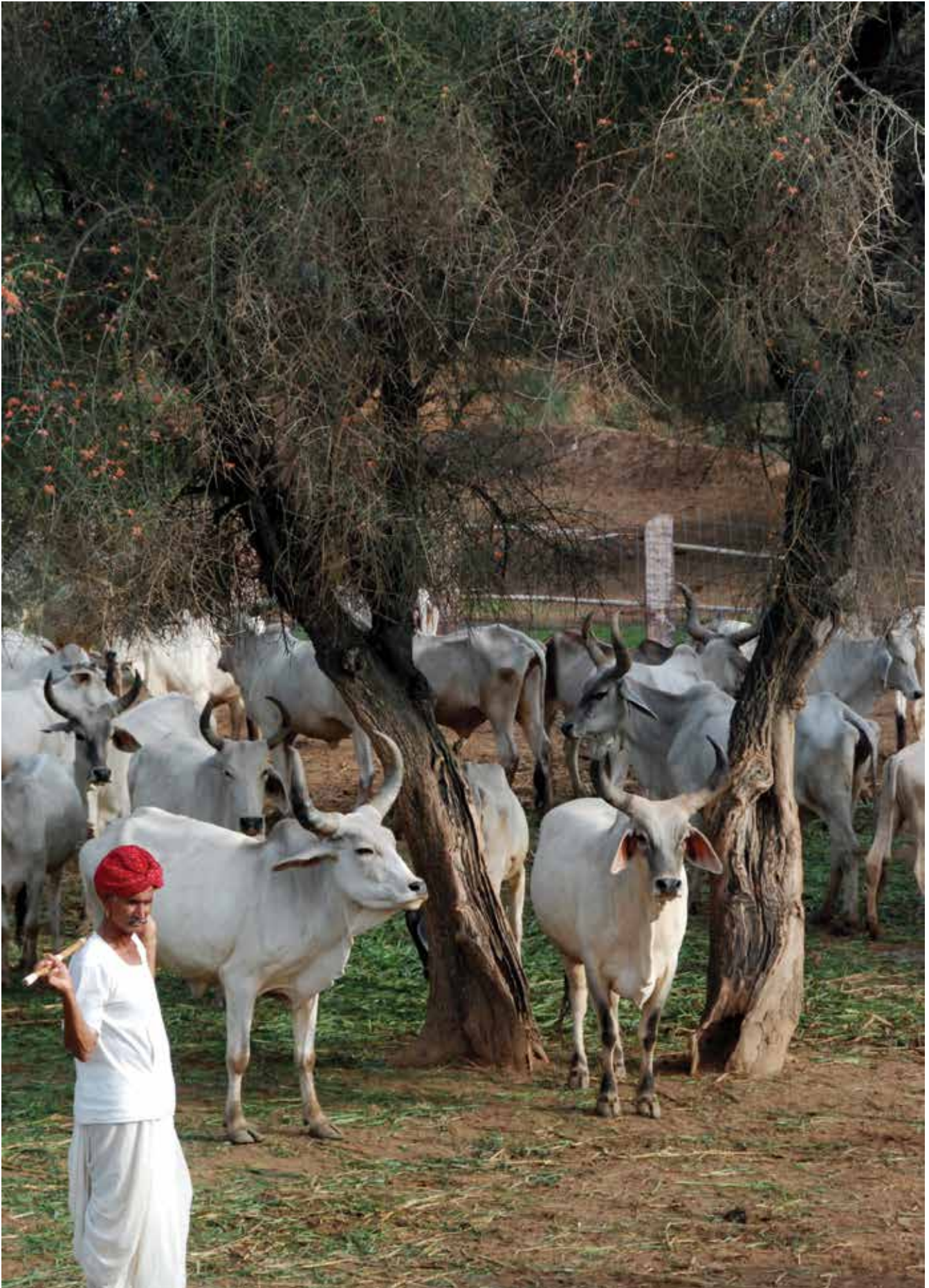
TABLE III.2.1: Performance of Cattle and Buffalo Breeds

Parameter	Cattle		
	Gir	Kankrej	Dangi
Breed Population ('000)	1,400	2,682	209
Lactation Yield (kg)			
Field	2,790 (2,732 to 3,312)	2,396 (2,137 to 2,864)	
Farm	2,125 (1,835 to 2,950)	1,954 (1,271 to 232)	530 (32 to 1,228)
Lactation Length (days)	305 (302 to 329)	314 (308 to 329)	269 (100 to 396)
Calving Interval (days)	435 (420 to 480)	424 (312 to 565)	474 (464 to 484)
Dry Period (days)	115 (75 to 155)	151 (72 to 173)	190
Age at First Calving (months)	46 (44 to 53)	51	45 (44 to 46)

SOURCE: AE Nivsarkar et al., (2000), Animal Genetic Resources of India, Cattle and Buffalo, ICAR publication.

Parameter	Buffalo			
	Jaffarabadi	Mehsana	Surti	Banni
Breed Population ('000)	1,470	3,370	1,557	525
Lactation Yield (kg)				
Field	3,189 (3,047 to 3,639)	3,426 (3,163 to 3,488)	2,405 (2,262 to 2,792)	2,860 (2,770 to 22,950)
Farm	1,967 (1,917 to 2,075)	1,840 (1,774 to 1,904)	1,699 (1,399 to 1,955)	
Lactation Length (days)	325 (316 to 328)	315 (312 to 327)	310 (308 to 323)	300 (296 to 304)
Calving Interval (days)	482 (476 to 494)	394 (385 to 403)	424 (418 to 437)	372
Dry Period (days)	142 (141 to 143)	128 (120 to 136)	126 (120 to 138)	66
Age at First Calving (months)	53 (49 to 63)	49	46 (43 to 48)	40 (39 to 41)

SOURCE: AE Nivsarkar et al., (2000), Animal Genetic Resources of India, Cattle and Buffalo, ICAR publication.



PART IV: MILK PRODUCTION

Gujarat State produced about 10 million tonnes of bovine milk in 2012-13 – which is around 1.3 per cent of the aggregate world milk production and 7.6 per cent of the country's production. What's more, the output is increasing at about five per cent per annum.

In the last two decades, while the share of crossbred milk to total bovine milk has shot up from 5 to 20 per cent, the share of buffalo milk has reduced from 67 to 58 per cent and that of indigenous cattle from 27 to 22 per cent. Per capita availability of milk in Banaskantha, Mehsana, Sabarkantha and Patan districts is almost double that of the rest of the State.

Bovine productivity has also gone up. Figures of 2012-13 show that the daily average milk yield for in-milk crossbred and indigenous cows and buffaloes was 8.81 kg, 3.95 kg and 4.78 kg per day respectively, as against the national average of 7.02 kg, 2.36 kg and 4.80 kg. Crossbred cows yield 7.3 to 10.7 kg of milk daily. In the case of buffaloes, productivity varies from 3.31 kg per day in Narmada district to 5.69 kg per day in Porbandar district, the average working out to 4.78 kg per day.

Gujarat's dairy farmers retain about 34 per cent of the milk at household level and sell the balance of milk.





IV.1. Integrated Sample Survey (ISS) Reports: In-milk Population, Yield, Production

TABLE IV.1.1: Year-wise In-milk Bovine Population, Milk Yield & Bovine Milk Production

Year	In-milk Bovines ('000)	Milk Yield (kg)	Bovine Milk Production ('000 MT)
1983-84	2,578	3.13	2,944
1984-85	2,631	3.21	3,080
1985-86	2,675	3.19	3,114
1986-87	2,648	3.19	3,082
1987-88	2,576	3.02	2,842
1988-89	2,479	3.19	2,889
1989-90	2,547	3.42	3,183
1990-91	2,659	3.46	3,358
1991-92	2,796	3.39	3,456
1992-93	2,866	3.47	3,627
1993-94	2,942	3.50	3,758
1994-95	3,262	3.57	4,255
1995-96	3,329	3.62	4,400
1996-97	3,423	3.69	4,611
1997-98	3,529	3.64	4,695
1998-99	3,554	3.73	4,844
1999-00	3,649	3.77	5,027
2000-01	3,793	3.68	5,090
2001-02	4,091	3.78	5,649
2002-03	4,194	3.83	5,857
2003-04	4,295	3.94	6,175
2004-05	4,384	4.06	6,490
2005-06	4,458	4.12	6,703
2006-07	4,667	4.27	7,280
2007-08	4,794	4.38	7,661
2008-09	4,905	4.55	8,153
2009-10	5,093	4.63	8,612
2010-11	5,253	4.74	9,082
2011-12	5,360	4.89	9,572
2012-13	5,515	5.00	10,073

SOURCE: Survey Reports on Estimates of Major Livestock Products (1983-84 to 2012-13), Directorate of Animal Husbandry, Gujarat State, Gandhinagar.



IV.1. Integrated Sample Survey (ISS) Figures: Animal Population

TABLE IV.1.2: Year & District-wise In-milk Indigenous Population

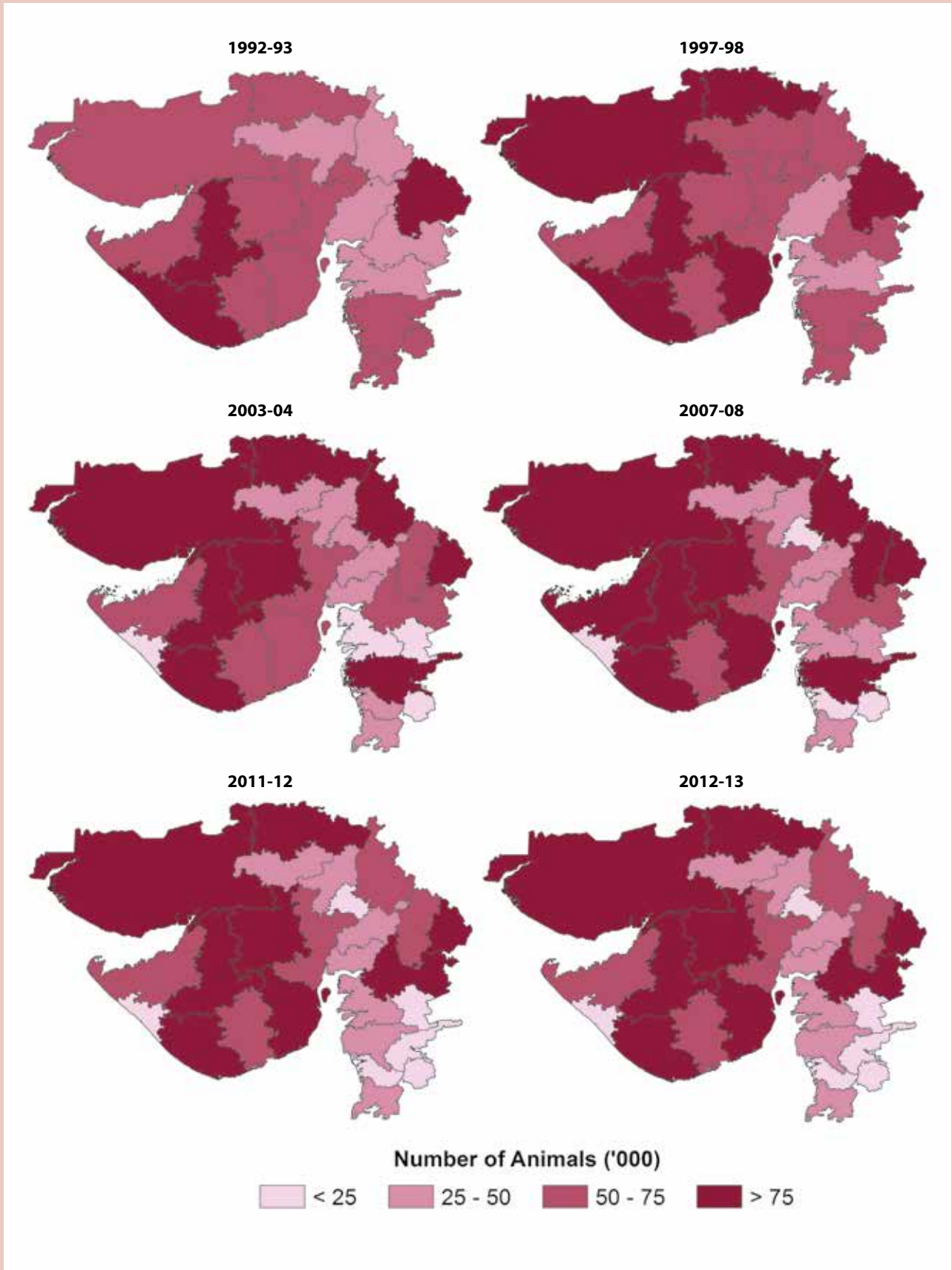
Districts	In-milk Indigenous Population ('000)								
	1992-93	1997-98	2003-04	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
GUJARAT	991.9	1,223.8	1,396.0	1,452.5	1,395.2	1,423.2	1,445.6	1,463.2	1,511
Ahmedabad	56.0	69.1	62.3	61.7	59.6	58.9	57.4	55.2	59.5
Amreli	54.9	55.2	54.7	53.3	54.8	56.5	59.2	59.3	63.7
Anand			39.0	37.5	26.7	29.9	29.8	31.8	34.9
Banaskantha	71.0	88.1	87.8	107.3	106.2	109.9	112.0	115.0	130.7
Bharuch	29.3	37.9	22.2	26.5	25.1	27.2	26.8	27.0	25.4
Bhavnagar	65.4	83.7	73.8	84.6	83.6	86.3	88.9	88.8	92.0
Dahod			101.6	76.4	74.1	72.8	79.6	84.5	94.6
Gandhinagar			27.1	23.0	22.3	22.4	22.0	22.5	24.7
Jamnagar	62.1	64.9	68.0	77.6	71.8	74.0	71.7	65.5	69.4
Junagadh	93.2	87.9	82.2	90.4	95.2	97.7	96.9	104.7	105.8
Kachchh	68.6	99.1	88.0	97.1	105.4	110.0	117.6	122.5	126.1
Kheda	31.4	43.8	31.8	28.1	28.5	29.5	34.9	34.3	34.8
Mehsana	46.2	62.5	42.9	38.9	38.3	39.1	40.2	41.2	40.8
Narmada			18.7	25.3	22.0	22.8	25.7	24.5	23.2
Navsari			25.9	16.7	15.4	11.1	12.4	12.0	10.1
Panchmahals	79.8	108.6	59.2	78.0	71.1	69.0	69.8	71.1	73.5
Patan			41.0	38.7	34.3	35.2	36.5	36.9	36.1
Porbandar			15.7	18.1	16.1	18.2	15.6	17.6	18.3
Rajkot	82.7	98.0	95.6	106.3	100.5	102.4	96.2	95.7	97.1
Sabarkantha	49.2	64.7	83.8	84.5	77.9	81.8	76.4	75.0	72.1
Surat	55.8	59.3	78.9	75.7	35.5	34.3	34.4	33.7	32.1
Surendranagar	51.8	66.3	77.0	84.5	85.7	91.9	97.7	101.3	107.3
Tapi					24.0	23.4	23.3	22.4	20.3
The Dangs			8.2	9.5	8.2	8.6	8.4	8.5	8.1
Vadodara	41.4	67.3	74.1	74.8	77.4	77.9	80.1	80.9	80.2
Valsad	53.1	67.4	36.5	38.0	35.7	32.4	32.1	31.3	30.2

NOTE: Ahmedabad includes Gandhinagar and Valsad includes The Dangs districts for the year 1992-93 and 1997-98.

SOURCE: Survey Reports on Estimates of Major Livestock Products (1992-93 to 2012-13), Directorate of Animal Husbandry, Gujarat State, Gandhinagar.



District-wise Indigenous In-Milk Cattle Population





IV.1. Integrated Sample Survey (ISS) Figures: Animal Population

TABLE IV.1.3: Year & District-wise In-milk Crossbred Population

Districts	In-milk Crossbred Population (in '000)								
	1992-93	1997-98	2003-04	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
GUJARAT	73.3	94.6	142.6	317.8	391.2	458.9	509.6	564.0	620.5
Ahmedabad	2.2	2.4	2.4	5.6	7.1	7.9	7.7	7.3	7.7
Amreli	0.5	0.7	1.0	1.1	2.0	2.2	2.7	3.0	3.6
Anand			13.4	24.1	27.6	31.6	36.6	39.4	40.7
Banaskantha	1.7	3.1	11.4	33.0	40.8	45.2	51.1	64.1	72.0
Bharuch	1.4	1.8	3.1	3.5	4.6	5.5	5.6	5.4	7.2
Bhavnagar	1.1	1.1	1.7	3.0	4.0	4.1	5.3	5.4	5.8
Dahod			0.4	0.5	0.6	0.8	1.0	0.5	0.5
Gandhinagar			9.0	27.7	31.4	38.5	43.0	49.7	48.0
Jamnagar	0.1	0.2	0.5	0.5	0.4	0.4	0.5	0.8	0.7
Junagadh	0.2	0.5	1.2	2.2	3.4	3.7	4.1	5.3	6.8
Kachchh	0.3	0.4	0.9	2.0	2.1	2.2	2.3	2.5	2.2
Kheda	21.1	25.5	9.1	27.7	24.9	30.8	32.0	36.3	42.6
Mehsana	13.3	22.1	21.6	29.0	37.1	44.2	47.4	49.5	56.8
Narmada			0.4	0.7	0.8	1.0	0.8	1.0	1.2
Navsari			10.8	33.3	37.1	43.5	45.1	48.8	54.0
Panchmahals	0.9	1.9	1.7	3.9	8.9	15.4	16.8	16.4	19.3
Patan			1.8	2.3	3.2	3.8	4.1	5.2	6.0
Porbandar			0.0*	0.0*	0.4	0.5	0.6	0.5	0.4
Rajkot	0.8	2.7	4.2	6.7	9.5	9.5	12.4	12.2	13.0
Sabarkantha	9.9	9.3	23.7	50.2	53.9	65.9	77.0	84.8	100.1
Surat	5.0	5.4	11.8	32.3	32.4	37.1	40.8	44.2	48.2
Surendranagar	0.2	0.2	0.1	2.9	0.6	1.2	1.2	1.1	1.2
Tapi					18.6	20.6	23.1	25.8	29.5
The Dangs				3.2	4.4	5.1	5.5	5.8	5.6
Vadodara	6.2	4.9	3.7	6.5	8.4	8.7	9.4	12.3	12.4
Valsad	8.3	12.4	9.0	18.7	27.2	29.5	33.5	36.7	35.0

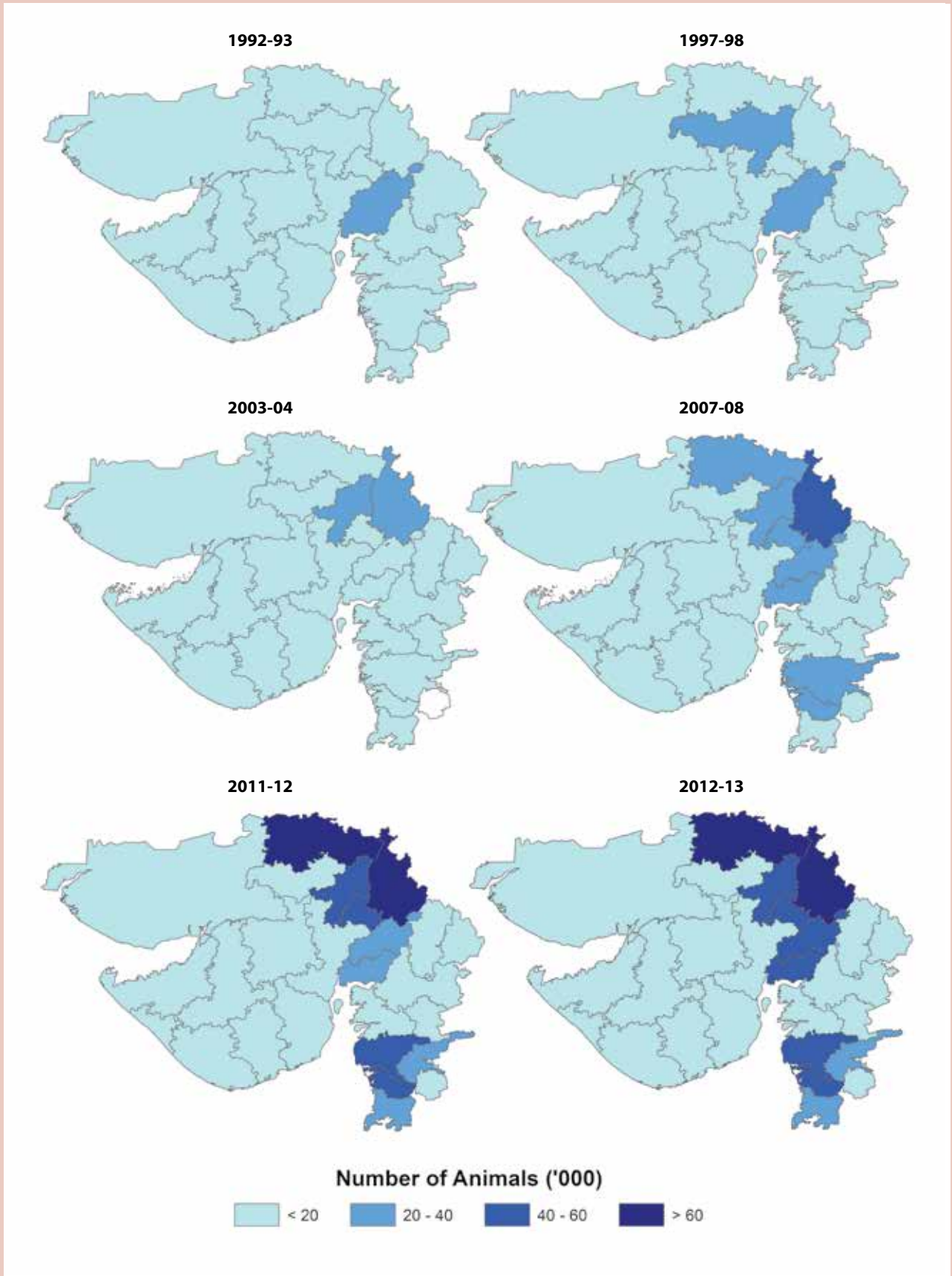
NOTE: Ahmedabad includes Gandhinagar and Valsad includes The Dangs districts for the year 1992-93 and 1997-98.

*Figures Negligible

SOURCE: Survey Reports on Estimates of Major Livestock Products (1992-93 to 2012-13), Directorate of Animal Husbandry, Gujarat State, Gandhinagar.



District-wise Crossbred In-Milk Cattle Population





IV.1. Integrated Sample Survey (ISS) Figures: Animal Population

TABLE IV.1.4: Year & District-wise In-milk Buffalo Population

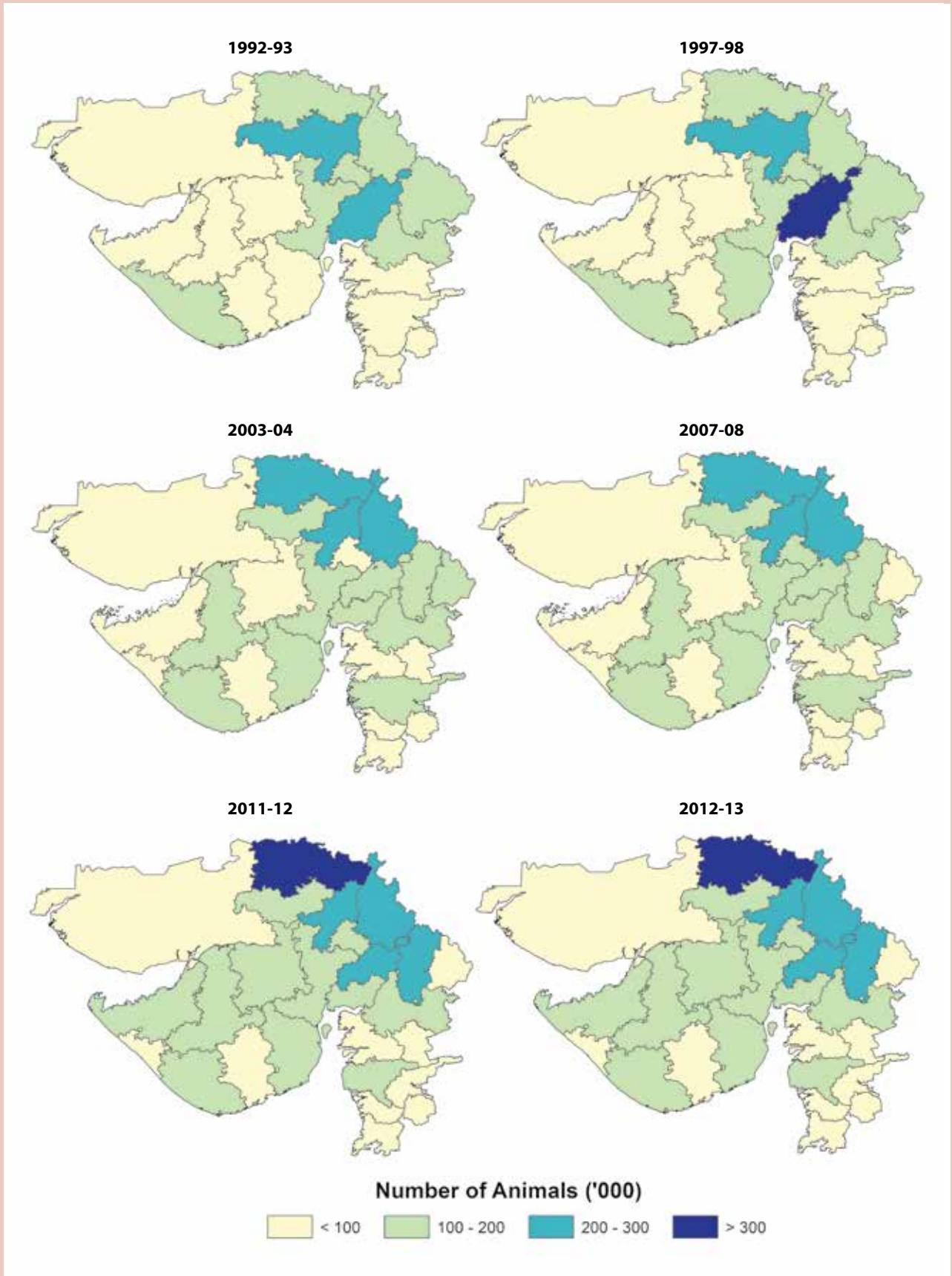
Districts	In-milk Buffalo Population ('000)								
	1992-93	1997-98	2003-04	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
GUJARAT	1,800.4	2,210.4	2,755.7	3,023.4	3,118.5	3,211.0	3,298.4	3,332.5	3,383.4
Ahmedabad	133.3	144.9	103.0	116.5	120.1	122.2	129.7	132.8	128.5
Amreli	53.7	69.6	78.1	75.8	81.0	83.0	86.4	89.9	96.1
Anand			161.0	143.0	151.7	161.2	165.1	162.6	167.5
Banaskantha	130.0	190.9	218.0	290.7	296.3	312.7	321.1	332.1	349.6
Bharuch	57.4	65.0	66.3	59.1	61.6	64.9	69.1	68.2	68.7
Bhavnagar	99.2	118.7	113.4	117.7	123.6	128.0	129.1	129.9	137.9
Dahod			135.0	87.0	87.2	82.8	93.6	89.4	96.7
Gandhinagar			88.8	125.7	129.2	131.3	128.1	123.0	128.4
Jamnagar	48.7	59.6	75.8	99.2	99.3	102.6	110.5	111.3	116.1
Junagadh	109.5	124.2	123.5	142.6	140.2	142.4	154.8	154.9	162.2
Kachchh	40.2	53.3	58.8	69.4	82.6	80.2	80.7	85.6	98.9
Kheda	263.8	320.9	182.0	195.4	203.6	222.0	227.3	232.5	230.9
Mehsana	228.2	285.5	232.4	234.0	235.5	244.9	252.7	259.9	243.5
Narmada			18.4	23.8	23.3	25.2	27.1	30.4	26.5
Navsari			42.8	45.7	40.4	40.1	40.4	39.6	39.8
Panchmahals	133.0	172.3	160.0	180.3	202.6	201.7	206.6	209.9	211.1
Patan			125.5	119.1	129.0	134.5	139.2	144.5	132.4
Porbandar			37.5	42.3	42.2	42.3	44.5	44.9	48.6
Rajkot	68.7	84.5	111.8	134.2	137.4	140.7	143.3	145.8	146.6
Sabarkantha	137.5	177.5	228.0	270.3	272.4	273.4	276.0	263.3	257.3
Surat	96.5	100.0	156.6	176.6	111.3	111.3	114.0	116.4	117.8
Surendranagar	33.5	43.7	63.5	79.7	92.2	101.7	100.4	104.2	110.1
Tapi					56.3	56.8	58.2	59.8	60.1
The Dangs			1.7	2.5	2.4	2.3	2.3	2.6	2.4
Vadodara	111.7	136.8	150.8	168.1	173.2	178.7	173.6	174.1	180.8
Valsad	55.5	63.0	22.9	24.7	23.9	24.1	24.6	24.9	24.9

NOTE: Ahmedabad includes Gandhinagar and Valsad includes The Dangs districts for the year 1992-93 and 1997-98.

SOURCE: Survey Reports on Estimates of Major Livestock Products (1992-93 to 2012-13), Directorate of Animal Husbandry, Gujarat State, Gandhinagar.



District-wise In-Milk Buffalo Population





IV.1. Integrated Sample Survey (ISS) Figures: Animal Population

TABLE IV.1.5: Year & District-wise In-milk Bovine Population

Districts	In-milk Bovine Population ('000)								
	1992-93	1997-98	2003-04	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
GUJARAT	2,866	3,529	4,294	4,794	4,905	5,093	5,254	5,360	5,515
Ahmedabad	191	216	168	184	187	189	195	195	196
Amreli	109	126	134	130	138	142	148	152	163
Anand			213	205	206	223	232	234	243
Banaskantha	203	282	317	431	443	468	484	511	552
Bharuch	88	105	92	89	91	98	102	101	101
Bhavnagar	166	203	189	205	211	218	223	224	236
Dahod			237	164	162	156	174	174	192
Gandhinagar			125	176	183	192	193	195	201
Jamnagar	111	125	144	182	172	177	183	178	186
Junagadh	203	213	207	235	239	244	256	265	275
Kachchh	109	153	148	169	190	192	201	211	227
Kheda	316	390	223	251	257	282	294	303	308
Mehsana	288	370	297	302	311	328	340	351	341
Narmada			37	50	46	49	54	56	51
Navsari			80	96	93	95	98	100	104
Panchmahals	214	283	221	262	283	286	293	297	304
Patan			168	160	167	174	180	187	175
Porbandar			53	60	59	61	61	63	67
Rajkot	152	185	212	247	247	253	252	254	257
Sabarkantha	197	252	336	405	404	421	429	423	430
Surat	157	165	247	285	179	183	189	194	198
Surendranagar	85	110	77	167	179	195	199	207	219
Tapi					99	101	105	108	110
The Dangs			10	15	15	16	16	17	16
Vadodara	159	209	229	249	259	265	263	267	273
Valsad	117	143	68	81	87	86	90	93	90

NOTE: Ahmedabad includes Gandhinagar and Valsad includes The Dangs districts for the year 1992-93 and 1997-98.

SOURCE: Survey Reports on Estimates of Major Livestock Products (1992-93 to 2012-13), Directorate of Animal Husbandry, Gujarat State, Gandhinagar.





IV.1. Integrated Sample Survey (ISS) Figures: Milk Yield

TABLE IV.1.6: Year & District-wise Indigenous Cattle Milk Yield

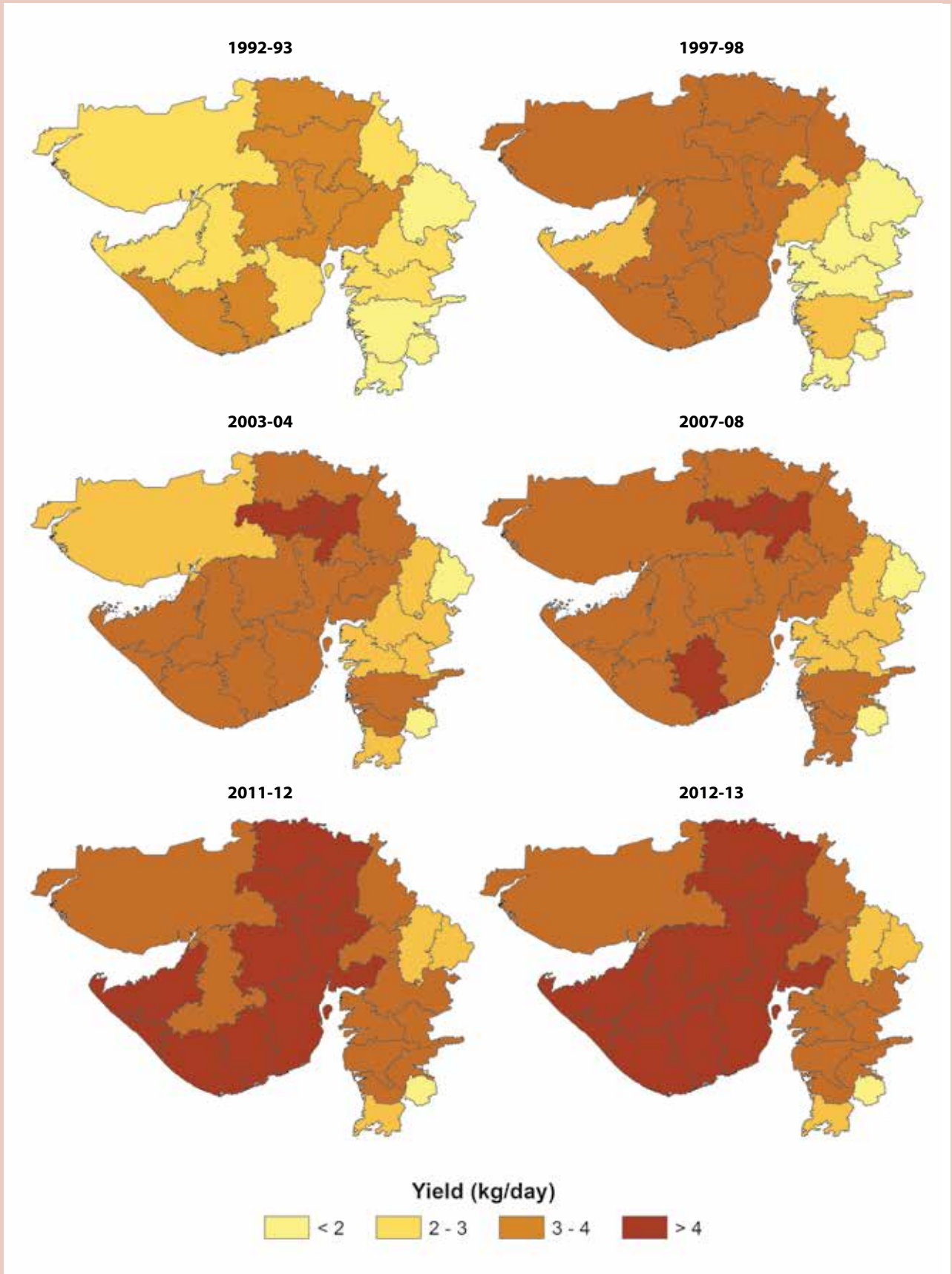
Districts	Indigenous Cattle Milk Yield (kg/day)								
	1992-93	1997-98	2003-04	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
GUJARAT	2.75	2.89	3.20	3.48	3.63	3.68	3.75	3.84	3.95
Ahmedabad	3.38	3.13	3.56	3.73	4.00	4.09	4.49	4.52	4.53
Amreli	3.04	3.18	3.86	4.06	4.10	4.12	4.17	4.41	4.77
Anand			3.44	3.95	4.10	3.97	4.23	4.19	4.26
Banaskantha	3.32	3.51	3.87	3.98	4.28	4.24	4.31	4.36	4.30
Bharuch	2.52	1.95	2.59	2.69	2.84	2.92	3.34	3.50	3.49
Bhavnagar	2.85	3.50	3.79	3.95	4.10	4.13	4.13	4.13	4.17
Dahod			1.27	1.79	1.92	2.22	2.24	2.43	2.64
Gandhinagar			3.78	3.93	4.05	4.16	4.23	4.38	4.44
Jamnagar	2.60	2.79	3.18	3.39	3.74	3.74	3.82	4.06	4.11
Junagadh	3.09	3.49	3.60	3.91	4.00	4.12	4.27	3.35	4.69
Kachchh	2.84	3.15	2.96	3.64	3.67	3.64	3.94	3.98	3.98
Kheda	3.40	2.75	3.19	3.57	3.94	4.18	4.00	3.99	3.86
Mehsana	3.38	3.73	4.10	4.16	4.15	4.20	4.23	4.39	4.36
Narmada			2.49	2.60	2.86	2.97	3.00	3.02	3.26
Navsari			3.07	3.21	3.38	3.14	3.09	3.35	3.42
Panchmahals	1.51	1.82	2.10	2.70	2.85	2.78	2.55	2.81	2.98
Patan			3.97	4.04	4.07	4.13	4.20	4.60	4.63
Porbandar			3.84	3.96	4.08	4.06	4.43	4.60	4.52
Rajkot	2.92	3.16	3.50	3.61	3.79	3.83	3.82	3.86	4.06
Sabarkantha	2.90	3.01	3.79	3.63	3.87	3.82	3.55	3.69	3.88
Surat	1.77	2.49	3.19	3.55	3.63	3.64	3.66	3.66	3.73
Surendranagar	3.38	3.26	3.27	3.60	3.74	3.82	3.93	4.08	4.09
Tapi					3.20	3.22	3.29	3.30	3.41
The Dangs			0.33	1.02	1.00	0.96	1.12	1.20	1.26
Vadodara	2.65	1.95	2.81	3.00	2.78	3.34	3.52	3.45	3.48
Valsad	1.60	1.79	2.78	3.10	2.76	2.62	2.56	2.45	2.67

NOTE: Ahmedabad includes Gandhinagar and Valsad includes The Dangs districts for the year 1992-93 and 1997-98.

SOURCE: Survey Reports on Estimates of Major Livestock Products (1992-93 to 2012-13), Directorate of Animal Husbandry, Gujarat State, Gandhinagar.



District-wise Indigenous Cattle Milk Yield (kg/day)





IV.1. Integrated Sample Survey (ISS) Figures: Milk Yield

TABLE IV.1.7: Year & District-wise Crossbred Cattle Milk Yield

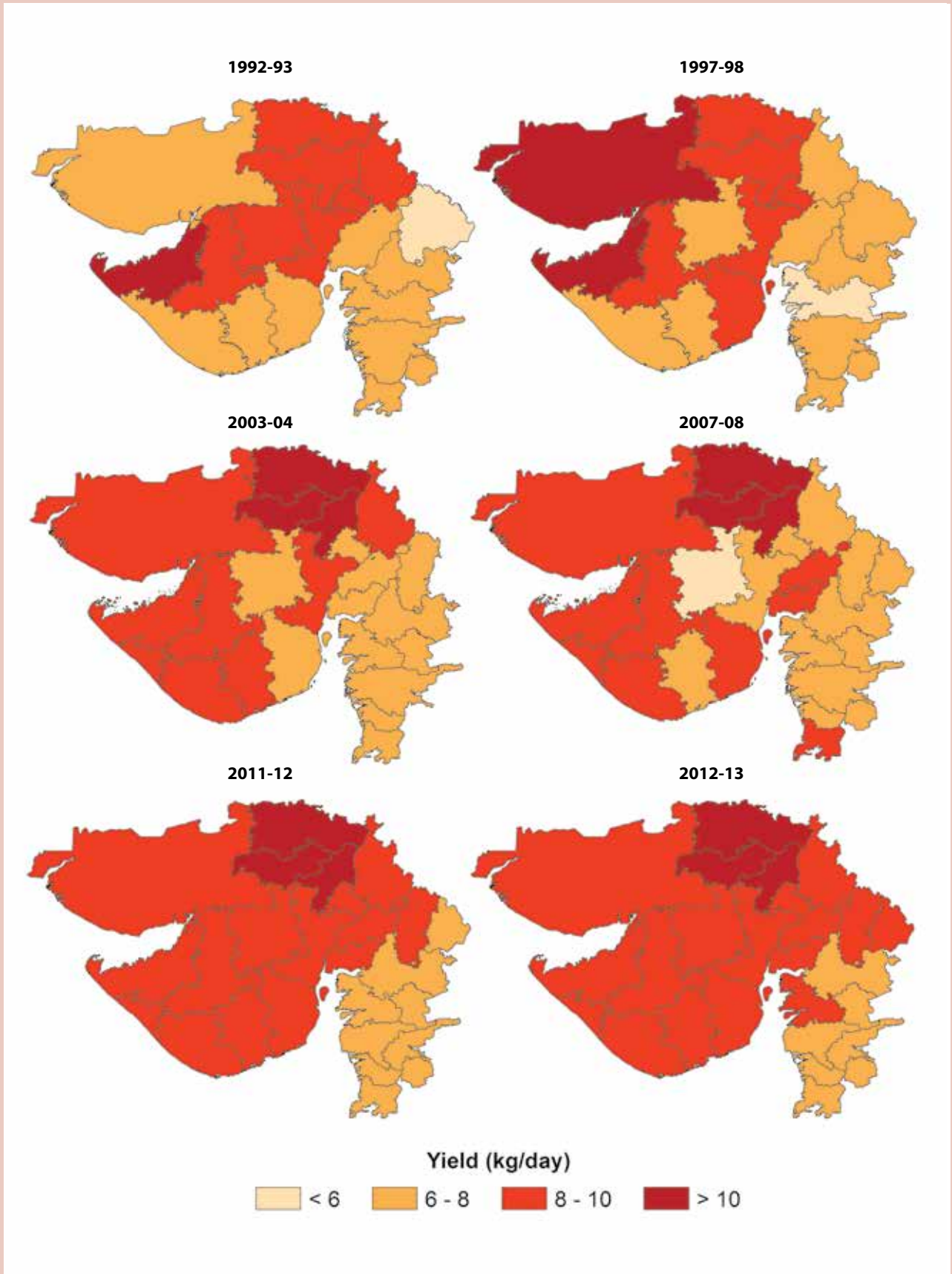
Districts	Crossbred Cattle Milk Yield (kg/day)								
	1992-93	1997-98	2003-04	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
GUJARAT	7.47	7.96	8.22	8.25	8.35	8.45	8.57	8.69	8.81
Ahmedabad	8.38	8.79	8.12	7.40	7.62	7.38	8.18	8.48	8.40
Amreli	7.90	6.76	8.03	7.90	7.93	7.79	7.79	8.58	9.35
Anand			7.14	8.05	8.29	8.18	8.14	8.58	9.15
Banaskantha	9.30	9.22	10.14	10.19	9.73	10.19	10.21	10.58	10.68
Bharuch	7.04	5.48	6.81	6.89	7.10	7.17	7.38	7.54	8.14
Bhavnagar	6.30	8.37	7.90	8.31	8.38	8.41	8.17	9.05	8.01
Dahod			5.77	7.10	7.25	7.70	7.46	7.80	7.59
Gandhinagar			7.75	7.73	7.94	8.23	8.94	8.57	8.58
Jamnagar	9.81	9.49	8.57	8.62	8.43	8.52	9.32	9.60	9.09
Junagadh	6.32	7.54	8.10	8.07	8.64	8.84	8.69	9.37	9.43
Kachchh	7.36	9.94	9.44	9.34	9.09	8.76	8.72	8.69	8.79
Kheda	6.09	7.38	7.34	8.18	8.32	8.49	8.67	8.19	8.28
Mehsana	9.90	9.89	10.25	10.30	10.26	10.28	10.36	10.44	10.26
Narmada			7.00	7.17	7.22	7.27	7.33	7.34	7.49
Navsari			6.71	7.34	7.42	7.49	7.53	7.46	7.51
Panchmahals	5.81	6.81	6.64	7.92	7.57	7.72	7.58	8.10	8.47
Patan			10.13	10.05	9.87	10.02	10.08	10.06	10.23
Porbandar			7.19	8.16	8.30	8.39	7.85	9.75	8.72
Rajkot	9.13	8.76	8.44	8.31	8.53	9.14	9.19	9.39	9.76
Sabarkantha	8.09	7.52	8.49	7.86	8.76	8.76	8.83	9.05	9.22
Surat	6.08	6.37	7.08	7.23	7.37	7.28	7.35	7.39	7.59
Surendranagar	7.93	7.89	8.45	8.56	9.85	9.21	9.43	8.40	9.22
Tapi					7.31	7.35	7.35	7.39	7.41
The Dangs				7.37	7.10	7.33	7.37	7.32	7.29
Vadodara	7.50	6.50	6.78	6.87	7.02	7.10	7.11	7.24	7.45
Valsad	6.78	7.16	7.77	8.23	7.55	7.60	7.61	7.54	7.42

NOTE: Ahmedabad includes Gandhinagar and Valsad includes The Dangs districts for the year 1992-93 and 1997-98.

SOURCE: Survey Reports on Estimates of Major Livestock Products (1992-93 to 2012-13), Directorate of Animal Husbandry, Gujarat State, Gandhinagar.



District-wise Crossbred Cattle Milk Yield (kg/day)





IV.1. Integrated Sample Survey (ISS) Figures: Milk Yield

TABLE IV.1.8: Year & District-wise Buffalo Milk Yield

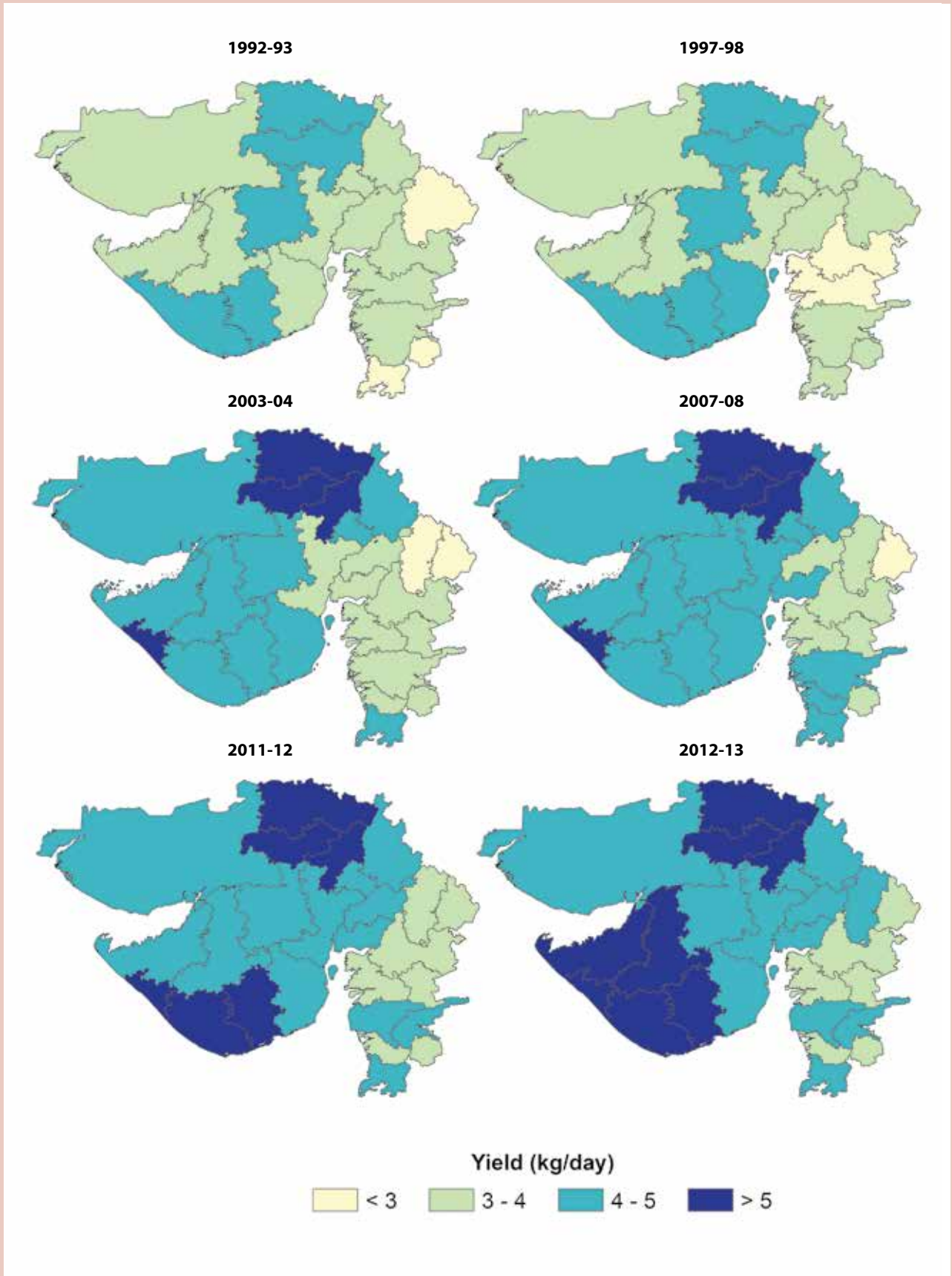
Districts	Buffalo Milk Yield (kg/day)								
	1992-93	1997-98	2003-04	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
GUJARAT	3.70	3.88	4.09	4.40	4.49	4.51	4.58	4.69	4.78
Ahmedabad	3.76	3.59	3.80	4.02	4.08	4.55	4.58	4.66	4.67
Amreli	4.29	4.64	4.28	4.70	4.74	4.82	4.76	5.03	5.16
Anand			3.74	4.12	4.12	4.03	4.23	4.38	4.74
Banaskantha	4.66	4.65	5.00	5.10	5.42	5.31	5.38	5.43	5.46
Bharuch	3.05	3.00	3.55	3.66	3.82	3.88	3.69	3.62	3.63
Bhavnagar	3.76	4.22	4.59	4.42	4.54	4.56	4.69	4.68	4.77
Dahod			2.27	2.61	2.64	3.04	3.07	3.13	3.34
Gandhinagar			4.07	4.27	4.30	4.30	4.36	4.59	4.93
Jamnagar	3.26	3.59	4.23	4.47	4.61	4.65	4.74	4.90	5.03
Junagadh	4.15	4.57	4.55	4.57	4.77	4.94	5.10	5.09	5.27
Kachchh	3.82	3.55	4.05	4.62	4.54	4.65	4.85	4.77	4.68
Kheda	3.36	3.53	3.34	3.91	3.93	3.80	4.10	4.23	4.28
Mehsana	4.81	4.81	5.18	5.33	5.35	5.38	5.46	5.52	5.52
Narmada			3.42	3.57	3.88	3.91	3.64	3.42	3.28
Navsari			3.78	4.20	4.20	3.92	3.80	3.74	3.79
Panchmahals	2.47	3.23	2.93	3.80	3.85	3.71	3.90	3.99	4.10
Patan			5.33	5.29	5.27	5.30	5.37	5.92	5.61
Porbandar			5.36	5.31	5.58	5.57	5.56	5.67	5.69
Rajkot	3.63	3.92	4.44	4.53	4.65	4.71	4.80	4.98	5.18
Sabarkantha	3.55	3.63	4.09	4.51	4.68	4.63	4.58	4.82	4.86
Surat	3.09	3.51	3.95	4.28	4.31	4.28	4.33	4.38	4.47
Surendranagar	4.01	4.20	4.01	4.50	4.43	4.58	4.58	4.79	4.93
Tapi					4.14	4.20	4.19	4.21	4.33
The Dangs			3.03	3.29	3.23	3.40	3.65	3.66	3.64
Vadodara	3.19	2.80	3.49	3.63	3.78	3.80	3.72	3.79	3.83
Valsad	2.96	3.44	4.07	4.10	4.06	4.18	4.04	4.07	4.31

NOTE: Ahmedabad includes Gandhinagar and Valsad includes The Dangs districts for the year 1992-93 and 1997-98.

SOURCE: Survey Reports on Estimates of Major Livestock Products (1992-93 to 2012-13), Directorate of Animal Husbandry, Gujarat State, Gandhinagar.



District-wise Buffalo Milk Yield (kg/day)





IV.1. Integrated Sample Survey (ISS) Figures: Animal Population

TABLE IV.1.9: Year & District-wise Bovine Milk Yield

Districts	Bovine Milk Yield (kg/day)								
	1992-93	1997-98	2003-04	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
GUJARAT	3.47	3.64	3.94	4.38	4.55	4.63	4.74	4.89	5.00
Ahmedabad	3.71	3.51	3.77	4.03	4.19	4.52	4.70	4.77	4.77
Amreli	3.67	4.02	4.14	4.46	4.53	4.58	4.58	4.86	5.10
Anand			3.92	4.55	4.67	4.61	4.85	5.07	5.42
Banaskantha	4.22	4.34	4.88	5.21	5.54	5.53	5.64	5.85	5.87
Bharuch	2.95	2.67	3.44	3.51	3.72	3.82	3.81	3.81	3.92
Bhavnagar	3.41	3.95	4.31	4.28	4.44	4.47	4.55	4.57	4.61
Dahod			1.85	2.24	2.33	2.68	2.72	2.80	3.00
Gandhinagar			4.28	4.77	4.90	5.07	5.38	5.59	5.74
Jamnagar	2.89	3.16	3.76	4.00	4.26	4.27	4.39	4.61	4.71
Junagadh	3.66	4.12	4.19	4.36	4.51	4.67	4.83	4.92	5.14
Kachchh	3.24	3.32	3.43	4.11	4.11	4.12	4.36	4.36	4.33
Kheda	3.55	3.69	3.48	4.35	4.35	4.35	4.58	4.67	4.79
Mehsana	4.82	4.93	5.39	5.65	5.79	5.90	6.01	6.09	6.17
Narmada			3.00	3.14	3.45	3.52	3.37	3.33	3.39
Navsari			3.96	5.10	5.37	5.47	5.43	5.48	5.70
Panchmahals	2.13	2.71	2.74	3.53	3.72	3.71	3.79	3.94	4.10
Patan			5.05	5.05	5.12	5.18	5.24	5.76	5.57
Porbandar			4.94	4.94	5.19	5.12	5.28	5.39	5.41
Rajkot	3.26	3.59	4.09	4.23	4.45	4.51	4.64	4.78	4.98
Sabarkantha	2.99	3.01	3.84	4.75	5.06	5.11	5.16	5.47	5.72
Surat	2.72	3.24	3.87	4.43	4.73	4.77	4.85	4.94	5.12
Surendranagar	3.62	3.66	3.62	3.98	4.11	4.25	4.29	4.46	4.55
Tapi					4.52	4.62	4.69	4.79	4.99
The Dangs			0.83	2.71	3.11	3.42	3.55	3.73	3.74
Vadodara	3.20	2.61	3.33	3.53	3.72	3.78	3.78	3.84	3.89
Valsad	2.60	2.97	3.88	4.54	4.64	4.71	4.83	4.90	4.96

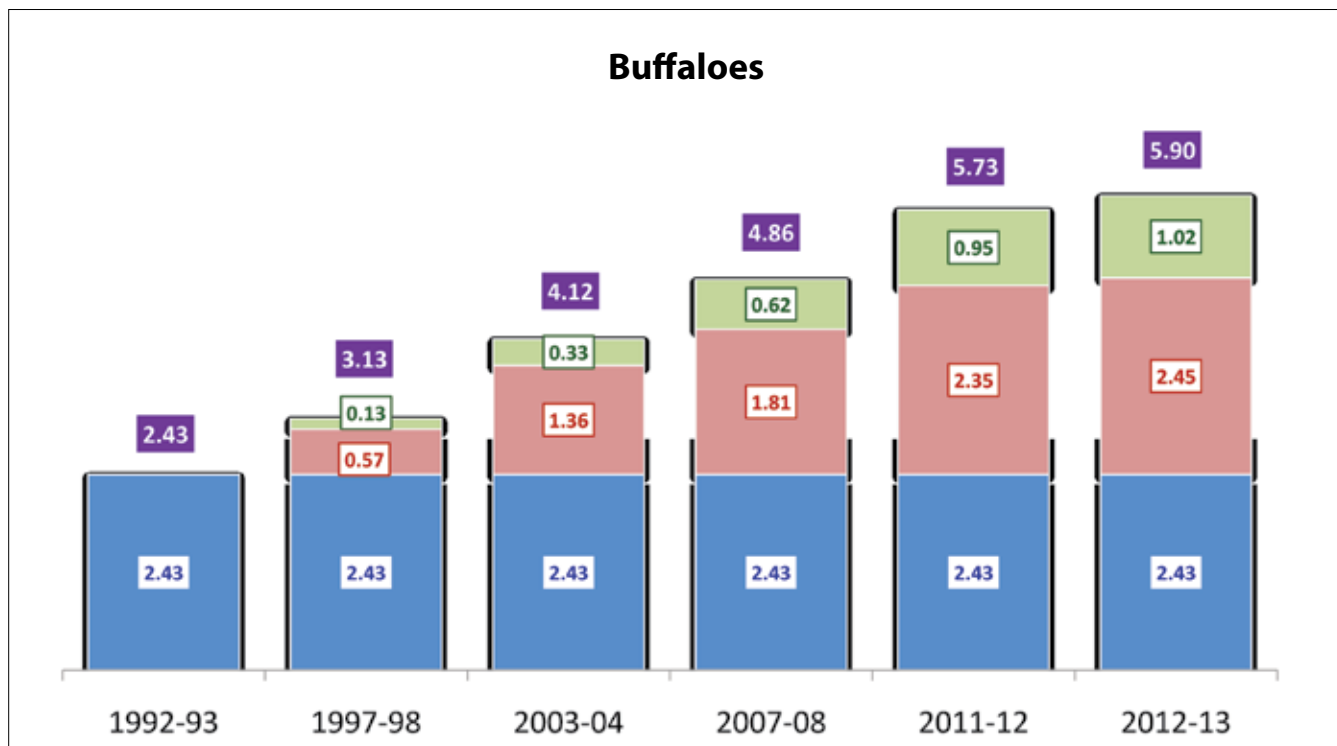
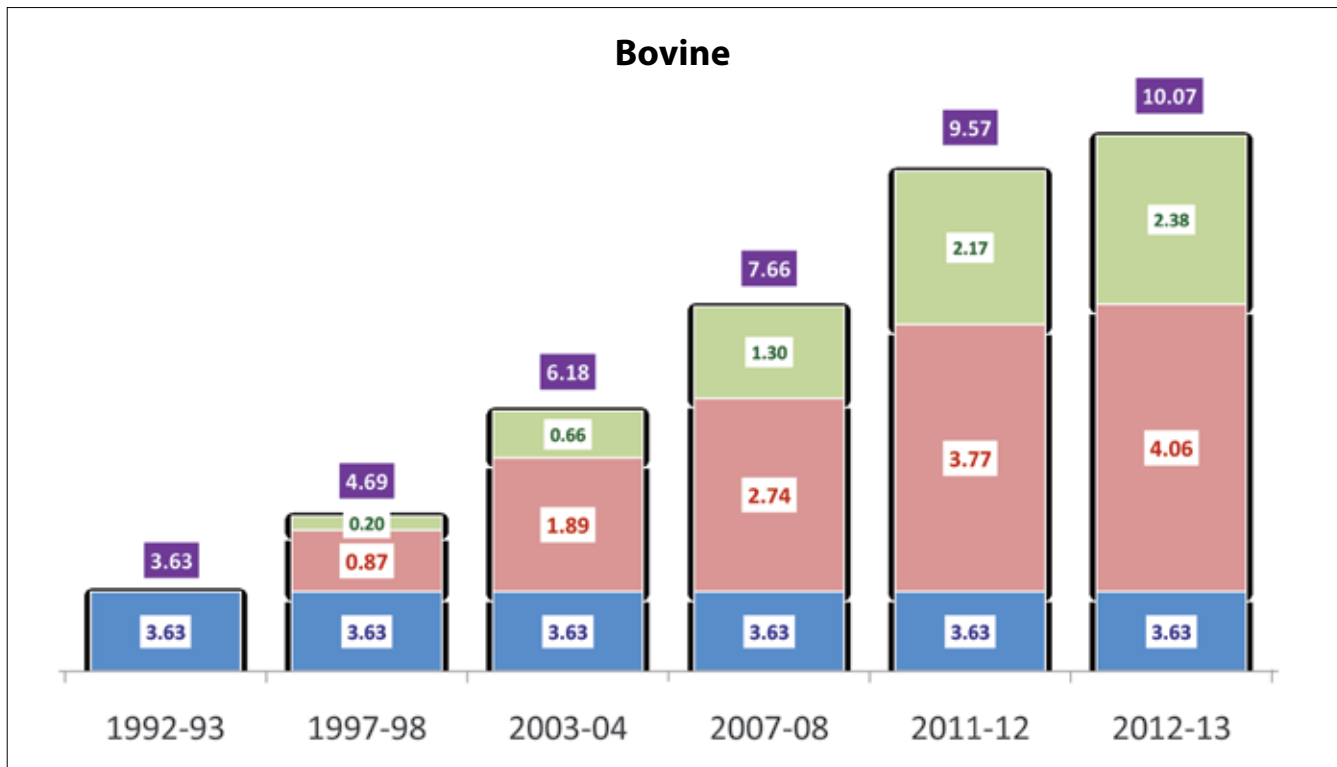
NOTE: Ahmedabad includes Gandhinagar and Valsad includes The Dangs districts for the year 1992-93 and 1997-98.

SOURCE: Survey Reports on Estimates of Major Livestock Products (1992-93 to 2012-13), Directorate of Animal Husbandry, Gujarat State, Gandhinagar.





Gujarat's Milk Production (MMT) (Change due to no. of in-milk animals & average yield)

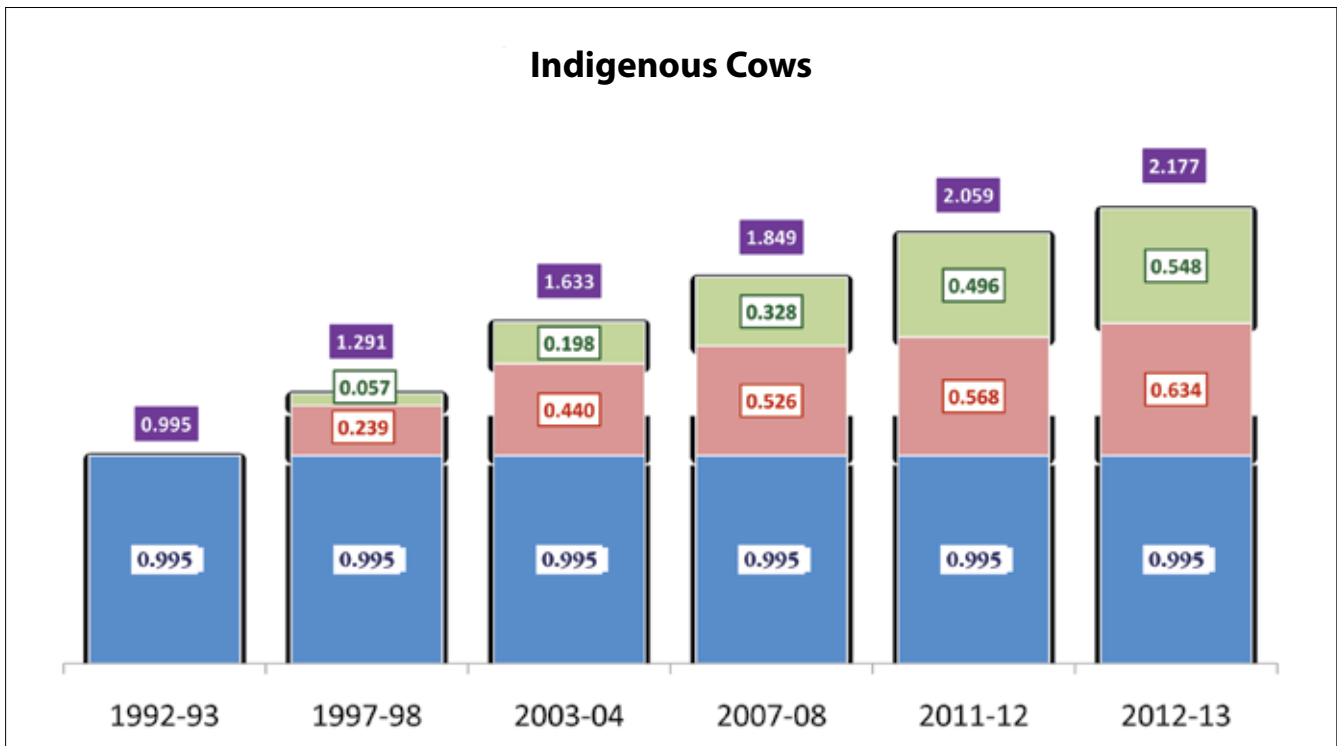
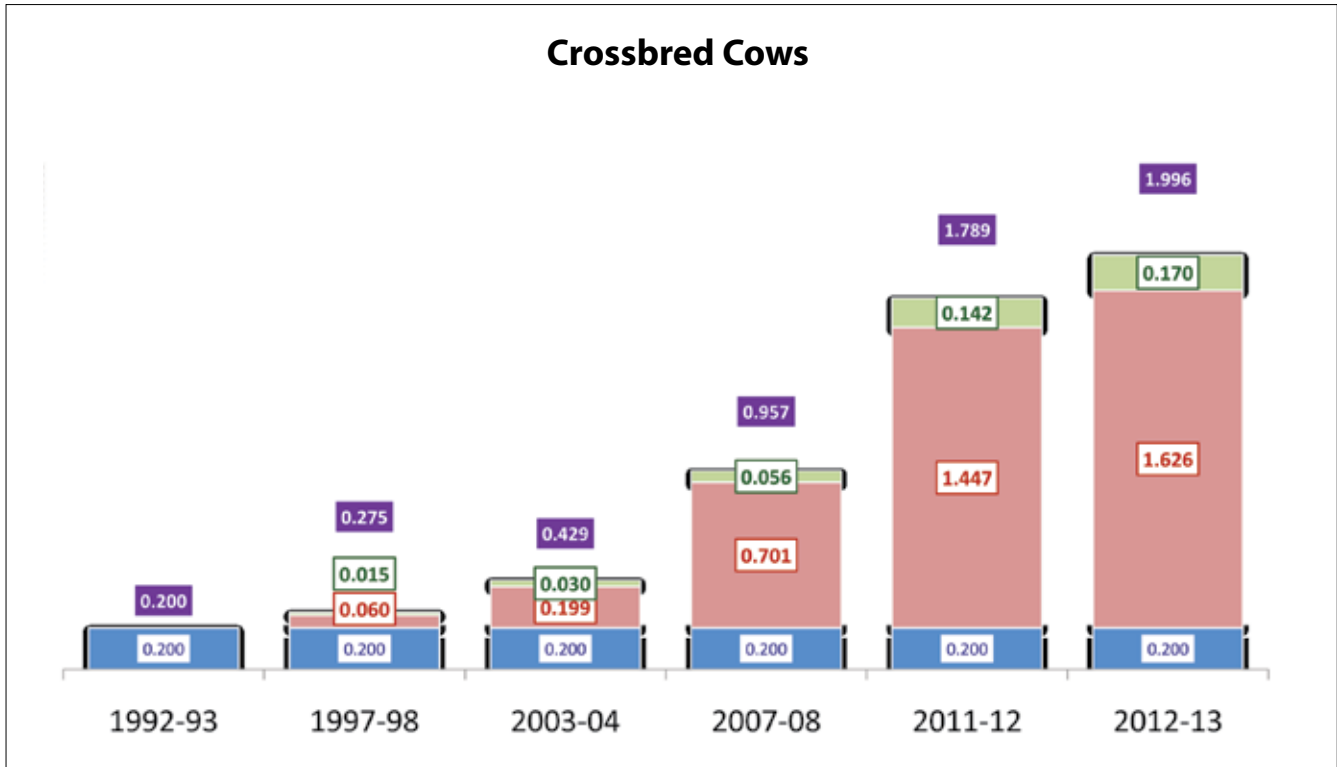


- Milk production in base year - 1992-93 - million tonnes
- Increase in total production through increase in numbers of in milk animals - mn tonnes
- Increase in total milk prodn. due to increase in average yield - kg/in-milk animal per day - mn tonnes
- Total milk production



Gujarat's Milk Production (MMT)

(Change due to no. of in-milk animals & average yield)



- Milk production in base year - 1992-93 - million tonnes
- Increase in total production through increase in numbers of in milk animals - mn tonnes
- Increase in total milk prodn. due to increase in average yield - kg/in-milk animal per day - mn tonnes
- Total milk production



IV.1. Integrated Sample Survey (ISS) Figures: Milk Production

TABLE IV.1.10: Year & District-wise Indigenous Cattle Milk Production

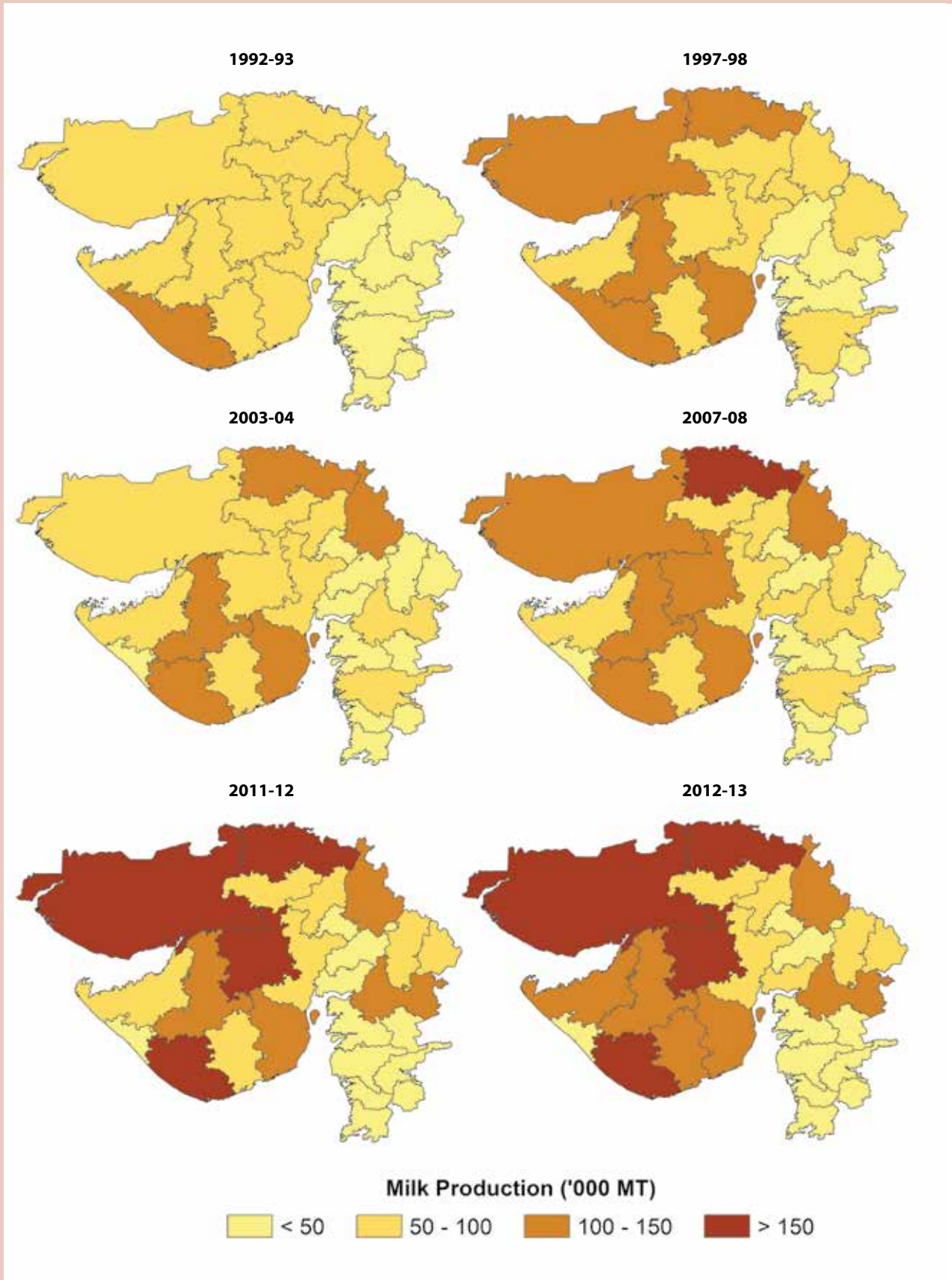
Districts	Indigenous Cattle Milk Production ('000 MT)								
	1992-93	1997-98	2003-04	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
GUJARAT	995	1,291	1,633	1,849	1,851	1,912	1,978	2,059	2,177
Ahmedabad	69	79	81	84	87	88	94	91	99
Amreli	61	64	77	79	82	85	90	95	111
Anand			49	54	40	43	46	49	54
Banaskantha	86	113	124	156	166	170	176	183	205
Bharuch	27	27	21	26	26	29	33	35	32
Bhavnagar	68	107	102	122	125	130	134	134	140
Dahod			47	50	52	59	65	75	91
Gandhinagar			38	33	33	34	34	36	40
Jamnagar	59	66	79	96	98	101	100	97	104
Junagadh	105	112	108	129	139	147	151	169	181
Kachchh	71	114	95	129	141	146	169	178	183
Kheda	39	44	37	37	41	45	51	50	49
Mehsana	57	85	64	59	58	60	62	66	65
Narmada			17	24	23	25	28	27	28
Navsari			29	20	19	13	14	15	13
Panchmahals	44	72	46	77	74	70	65	73	80
Patan			60	57	51	53	56	62	61
Porbandar			22	26	24	27	25	30	30
Rajkot	88	113	122	140	139	143	134	135	144
Sabarkantha	52	71	116	112	110	114	99	101	102
Surat	36	54	92	98	47	46	46	45	44
Surendranagar	64	79	92	111	117	128	140	151	161
Tapi					28	28	28	27	25
The Dangs			1	4	3	3	3	4	4
Vadodara	40	48	76	82	92	95	103	102	102
Valsad	31	44	37	43	36	31	30	28	29

NOTE: Ahmedabad includes Gandhinagar and Valsad includes The Dangs districts for the year 1992-93 and 1997-98.

SOURCE: Survey Reports on estimates of Major Livestock Products (1992-93 to 2012-13), Directorate of Animal Husbandry, Gujarat State, Gandhinagar.



District-wise Indigenous Cattle Milk Production ('000 tonne)





IV.1. Integrated Sample Survey (ISS) Figures: Milk Production

TABLE IV.1.11: Year & District-wise Crossbred Cattle Milk Production

Districts	Crossbred Cattle Milk Production ('000 MT)								
	1992-93	1997-98	2003-04	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
GUJARAT	200	275	429	957	1,192	1,415	1,593	1,789	1,996
Ahmedabad	7	8	7	15	20	21	23	23	24
Amreli	2	2	3	3	6	6	8	9	12
Anand			35	71	83	94	109	124	136
Banaskantha	6	11	42	123	145	168	191	248	281
Bharuch	4	4	8	9	12	14	15	15	22
Bhavnagar	3	3	5	9	12	13	16	18	17
Dahod			1	1	2	2	3	1	2
Gandhinagar			25	78	91	116	140	156	150
Jamnagar	1	1	2	2	1	1	2	3	2
Junagadh	1	1	3	7	11	12	13	18	24
Kachchh	1	2	3	7	7	7	7	8	7
Kheda	47	69	24	83	76	95	101	109	129
Mehsana	48	80	81	109	139	166	179	189	213
Narmada			1	2	2	3	2	3	3
Navsari			27	89	101	119	124	133	148
Panchmahals	2	5	4	11	25	43	46	49	60
Patan			7	8	12	14	15	19	22
Porbandar			0*	0*	1	2	2	2	1
Rajkot	3	9	13	20	30	32	42	42	46
Sabarkantha	29	26	74	145	172	211	248	280	337
Surat	11	13	30	85	87	99	109	120	134
Surendranagar	1	1	0*	1	2	4	4	4	4
Tapi					50	55	62	70	80
The Dangs				9	11	14	15	16	15
Vadodara	17	12	9	16	21	22	24	33	34
Valsad	21	33	25	55	75	82	93	102	95

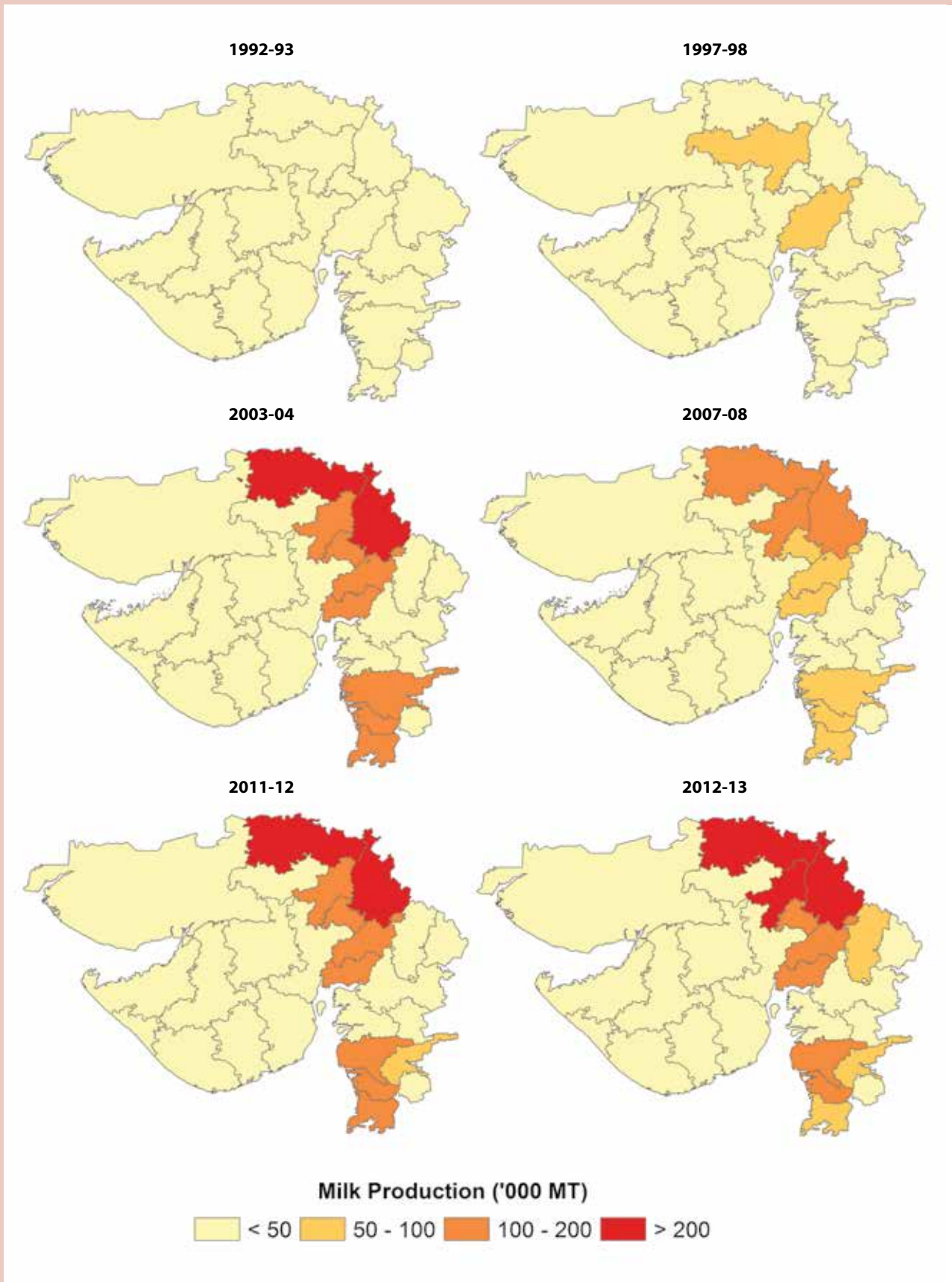
NOTE: Ahmedabad includes Gandhinagar and Valsad includes The Dangs districts for the year 1992-93 and 1997-98.

* Figures were negligible

SOURCE: Survey Reports on Estimates of Major Livestock Products (1992-93 to 2012-13), Directorate of Animal Husbandry, Gujarat State, Gandhinagar.



District-wise Crossbred Cattle Milk Production ('000 tonne)





IV.1. Integrated Sample Survey (ISS) Figures: Milk Production

TABLE IV.1.12: Year & District-wise Buffalo Milk Production

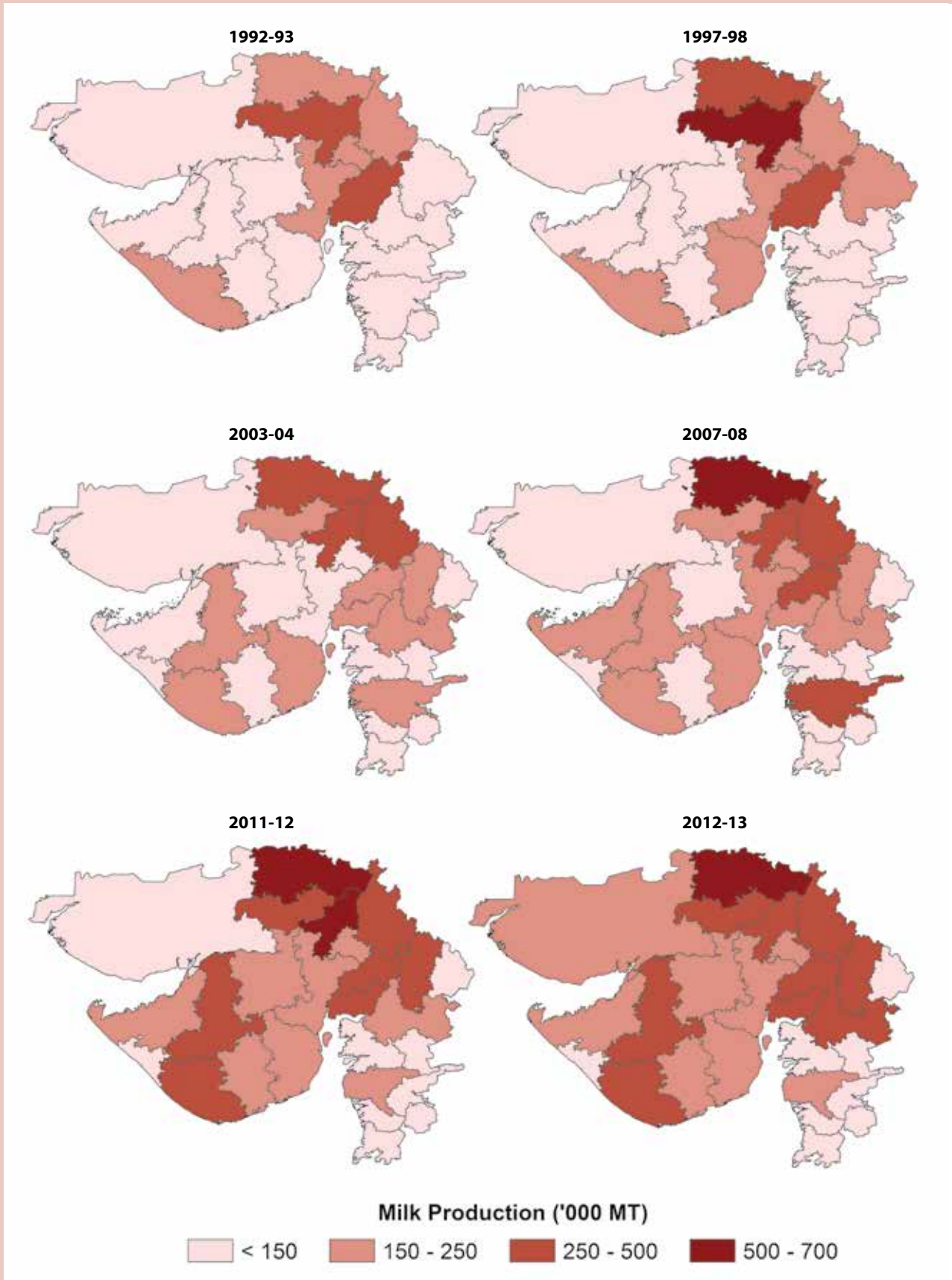
Districts	Buffalo Milk Production ('000 MT)								
	1992-93	1997-98	2003-04	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
GUJARAT	2,430	3,128	4,116	4,857	5,110	5,285	5,513	5,727	5,900
Ahmedabad	183	190	144	171	179	203	217	226	219
Amreli	84	118	122	130	140	146	150	165	181
Anand			220	215	228	237	255	260	290
Banaskantha	221	324	399	541	586	606	630	661	697
Bharuch	64	71	86	79	86	92	93	90	91
Bhavnagar	136	183	190	190	205	213	221	222	240
Dahod			112	83	84	92	105	102	118
Gandhinagar			132	196	203	206	204	207	231
Jamnagar	58	78	117	162	167	174	191	199	213
Junagadh	166	207	205	238	244	257	288	289	312
Kachchh	56	69	87	117	137	136	143	149	169
Kheda	324	414	222	279	292	308	340	359	361
Mehsana	401	501	439	455	460	481	504	524	491
Narmada			23	31	33	36	36	38	32
Navsari			59	70	62	57	56	54	55
Panchmahals	120	203	171	250	285	273	294	306	316
Patan			244	230	248	260	273	312	271
Porbandar			74	82	86	86	90	93	101
Rajkot	91	121	181	222	233	242	251	266	277
Sabarkantha	178	235	340	445	465	462	461	463	456
Surat	109	128	226	276	175	174	180	186	192
Surendranagar	49	67	93	131	149	170	168	182	198
Tapi					85	87	89	92	95
The Dangs			2	3	3	3	3	3	3
Vadodara	130	140	192	223	239	248	236	241	253
Valsad	60	79	34	37	36	35	35	37	39

NOTE: Ahmedabad includes Gandhinagar and Valsad includes The Dangs districts for the year 1992-93 and 1997-98.

SOURCE: Survey Reports on estimates of Major Livestock Products (1992-93 to 2012-13), Directorate of Animal Husbandry, Gujarat State, Gandhinagar.



District-wise Buffalo Milk Production ('000 tonne)





IV.1. Integrated Sample Survey (ISS) Figures: Milk Production

TABLE IV.1.13: Year & District-wise Total Milk Production (Bovine & Goat)

Districts	Total Milk Production ('000 MT)								
	1992-93	1997-98	2003-04	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
GUJARAT	3,795	4,913	6,421	7,907	8,388	8,843	9,320	9,817	10,315
Ahmedabad	266	285	239	277	292	318	340	347	348
Amreli	153	191	212	222	238	248	258	278	313
Anand			309	344	354	378	414	437	486
Banaskantha	331	474	590	844	917	963	1,016	1,113	1,204
Bharuch	101	109	121	119	131	142	148	147	152
Bhavanagar	219	308	311	336	358	372	387	386	411
Dahod			181	150	157	171	192	200	231
Gandhinagar			197	310	330	358	381	401	424
Jamnagar	122	150	204	268	275	284	300	305	327
Junagadh	280	330	323	382	400	422	457	482	524
Kachchh	148	216	210	281	315	319	343	361	383
Kheda	418	535	292	405	415	454	499	524	548
Mehsana	517	680	591	630	663	713	752	785	775
Narmada			44	61	61	67	70	72	66
Navsari			118	182	184	192	197	204	219
Panchmahals	183	308	233	356	400	402	424	448	477
Patan			319	304	318	335	351	398	360
Porbandar			97	110	112	116	119	126	134
Rajkot	189	255	325	394	412	427	437	453	479
Sabarkantha	273	347	560	719	763	803	827	864	914
Surat	159	198	354	467	313	323	340	355	374
Surendranagar	125	158	197	255	280	313	326	349	373
Tapi					166	172	182	192	203
The Dangs			3	16	18	20	22	23	23
Vadodara	196	209	289	335	365	380	377	389	402
Valsad	115	161	100	140	151	152	163	171	168

NOTE: Ahmedabad includes Gandhinagar and Valsad includes The Dangs districts for the year 1992-93 and 1997-98.

SOURCE: Survey Reports on Estimates of Major Livestock Products (1992-93 to 2012-13), Directorate of Animal Husbandry, Gujarat State, Gandhinagar.





IV.1. Integrated Sample Survey (ISS) Figures: Milk Production

TABLE IV.1.14: Year & District-wise Bovine Milk Production

Districts	Bovine Milk Production ('000 MT)								
	1992-93	1997-98	2003-04	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
GUJARAT	3,625	4,694	6,178	7,659	8,154	8,611	9,085	9,570	10,073
Ahmedabad	259	277	231	270	286	312	334	340	341
Amreli	146	184	202	212	228	237	248	270	304
Anand			305	340	351	375	410	433	481
Banaskantha	312	447	565	820	897	944	996	1,092	1,183
Bharuch	95	102	115	114	124	136	141	140	145
Bhavnagar	206	293	297	321	342	356	371	374	397
Dahod			160	134	138	153	173	178	210
Gandhinagar			195	307	327	356	379	398	421
Jamnagar	117	144	198	259	267	276	293	299	320
Junagadh	271	320	316	374	393	416	451	476	516
Kachchh	129	185	185	253	285	289	319	335	359
Kheda	410	526	283	399	408	448	492	517	539
Mehsana	506	666	584	623	657	707	746	779	768
Narmada			41	57	58	63	66	68	63
Navsari			115	178	182	189	194	201	216
Panchmahals	166	280	221	338	384	387	406	428	455
Patan			310	295	311	328	344	392	355
Porbandar			96	109	111	114	117	124	133
Rajkot	181	243	316	382	402	416	427	443	467
Sabarkantha	259	332	530	702	747	786	808	844	896
Surat	156	195	349	460	309	318	335	350	370
Surendranagar	113	147	186	243	268	302	312	336	363
Tapi					163	170	179	189	200
The Dangs			3	15	17	20	21	23	22
Vadodara	186	199	278	321	352	366	363	375	388
Valsad	111	155	97	135	147	148	159	166	163

NOTE: Ahmedabad includes Gandhinagar and Valsad includes The Dangs districts for the year 1992-93 and 1997-98.

SOURCE: Survey Reports on Estimates of Major Livestock Products (1992-93 to 2012-13), Directorate of Animal Husbandry, Gujarat State, Gandhinagar.



IV.1. Integrated Sample Survey (ISS) Figures: Milk Production

TABLE IV.1.15: Year & District-wise Goat Milk Production

Districts	Goat Milk Production ('000 MT)								
	1992-93	1997-98	2003-04	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
GUJARAT	170	219	243	248	234	231	236	241	242
Ahmedabad	7	7	7	7	6	6	6	7	7
Amreli	6	7	10	10	10	11	9	8	9
Anand			5	5	4	4	4	5	6
Banaskantha	19	26	25	24	20	19	20	21	21
Bharuch	6	7	6	6	6	6	7	7	8
Bhavnagar	13	14	15	14	16	16	16	12	14
Dahod			21	16	19	18	18	22	20
Gandhinagar			2	3	3	3	3	3	2
Jamnagar	5	6	7	9	8	8	7	6	7
Junagadh	9	10	7	8	7	6	6	6	8
Kachchh	20	31	24	29	30	29	24	26	25
Kheda	7	9	8	7	7	6	7	7	9
Mehsana	11	14	7	7	6	6	7	7	7
Narmada			3	4	4	4	4	4	3
Navsari			3	3	3	3	3	3	3
Panchmahals	17	28	12	18	16	15	18	20	21
Patan			8	9	7	7	7	6	6
Porbandar			1	2	1	1	1	2	2
Rajkot	8	12	9	12	10	10	10	10	11
Sabarkantha	14	16	31	17	15	17	19	20	19
Surat	2	3	5	8	4	4	4	4	5
Surendranagar	12	11	11	12	12	12	14	13	10
Tapi					3	3	3	3	3
The Dangs				0	0	0	1	1	1
Vadodara	9	10	11	14	13	14	14	14	14
Valsad	4	6	4	5	4	4	5	4	5

NOTE: Ahmedabad includes Gandhinagar and Valsad includes The Dangs districts for the year 1992-93 and 1997-98.

SOURCE: Survey Reports on estimates of Major Livestock Products (1992-93 to 2012-13), Directorate of Animal Husbandry, Gujarat State, Gandhinagar.



IV.1. Integrated Sample Survey (ISS) Figures: Milk Production

TABLE IV.1.16: Year & District-wise Milk Production Density

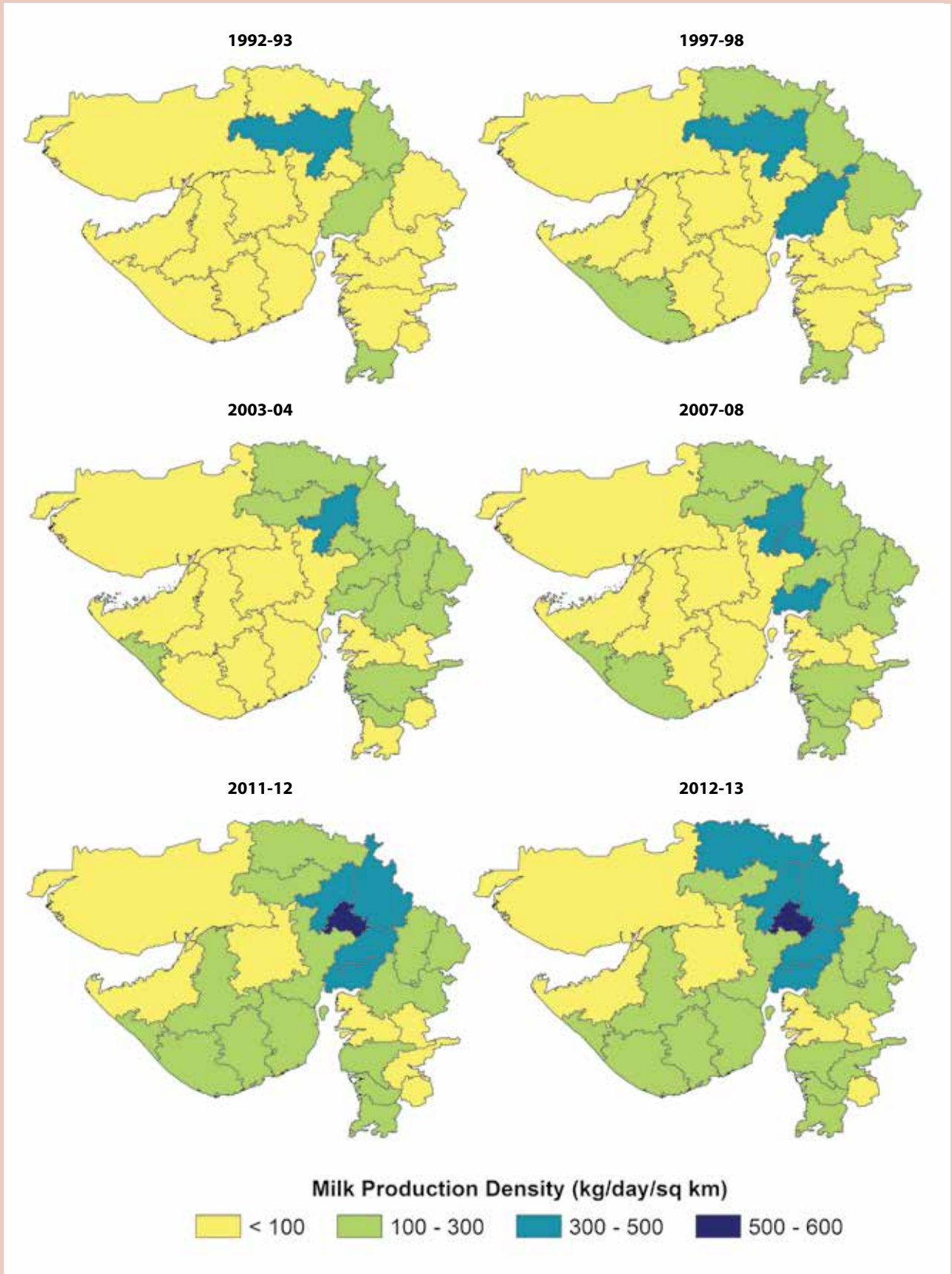
Districts	Milk Production Density (kg/day/sq km)								
	1992-93	1997-98	2003-04	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
GUJARAT	53	69	90	111	117	124	130	137	144
Ahmedabad	71	76	81	94	99	108	115	117	118
Amreli	57	71	79	82	88	92	95	103	116
Anand			288	321	330	353	386	407	416
Banaskantha	84	121	150	215	233	245	259	283	307
Bharuch	42	46	51	50	55	60	62	62	64
Bhavnagar	60	84	85	92	98	102	106	106	112
Dahod			136	113	118	128	144	150	173
Gandhinagar			250	393	418	454	483	508	542
Jamnagar	24	29	40	52	53	55	58	59	63
Junagadh	87	102	100	118	124	131	142	149	162
Kachchh	9	13	13	17	19	19	21	22	23
Kheda	271	348	190	263	270	295	324	340	380
Mehsana	323	425	370	394	414	446	470	491	482
Narmada			44	61	61	67	70	72	64
Navsari			147	226	229	238	244	254	267
Panchmahals	96	161	122	187	210	211	223	235	250
Patan			152	145	152	160	168	191	170
Porbandar			116	132	134	138	141	150	159
Rajkot	46	62	80	96	101	104	107	111	117
Sabarkantha	101	129	208	267	283	298	307	320	339
Surat	57	71	127	167	189	195	205	214	225
Surendranagar	33	41	52	66	73	82	85	91	98
Tapi					142	148	156	165	175
The Dangs			4	24	27	31	34	36	35
Vadodara	71	76	105	121	133	138	137	141	146
Valsad	66	92	90	126	137	137	147	154	153

NOTE: Ahmedabad includes Gandhinagar and Valsad includes The Dangs districts for the year 1992-93 and 1997-98.

SOURCE: Estimated from Survey Reports on Estimates of Major Livestock Products (1992-93 to 2012-13), Directorate of Animal Husbandry, Gujarat State, Gandhinagar.



District-wise Milk Production Density (kg/day/sq km)





IV.1. Integrated Sample Survey (ISS) Figures: Milk Availability

TABLE IV.1.17: Year & District-wise Per Capita Milk Availability

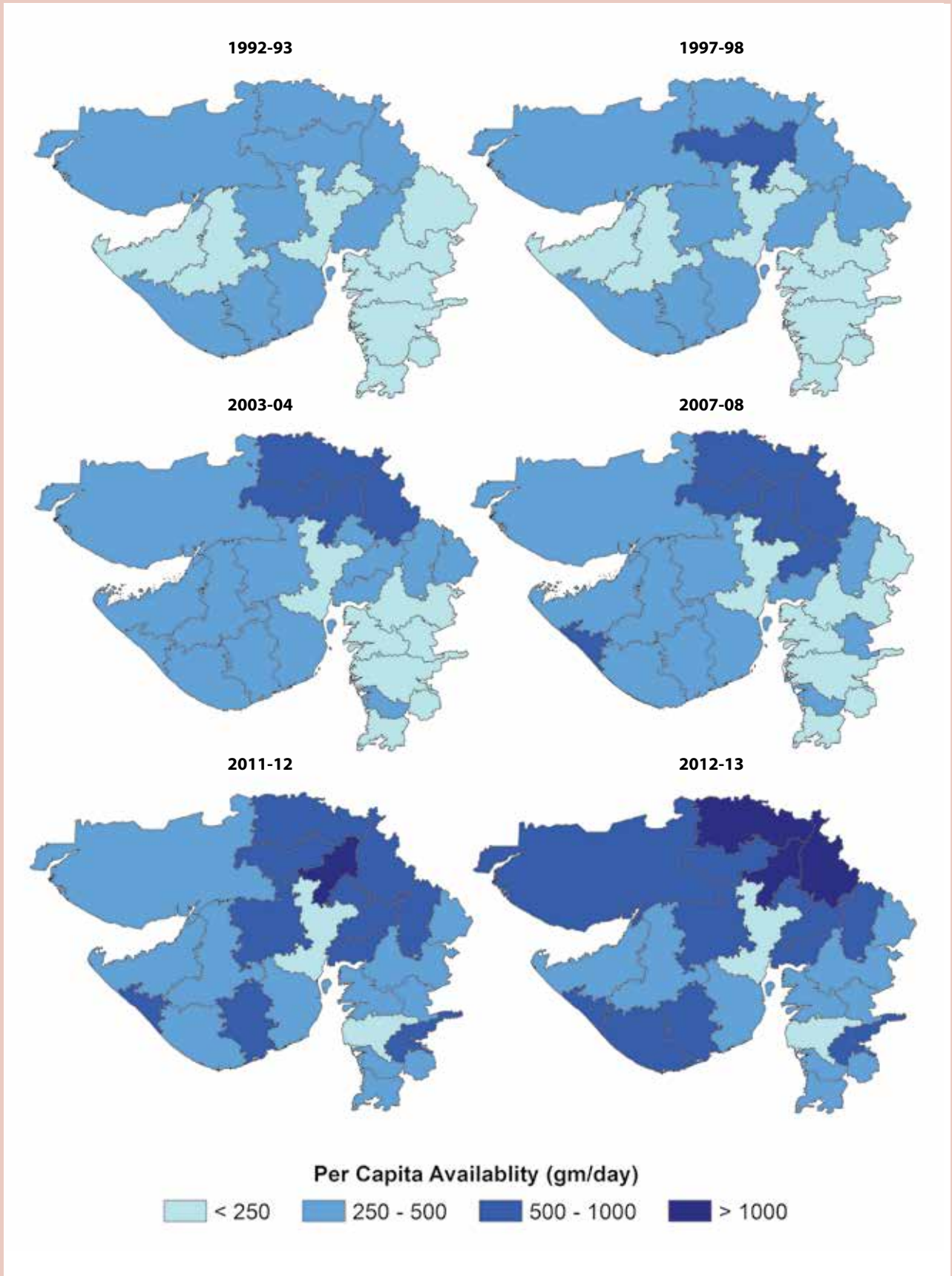
Districts	Per Capita Availability of Milk (gm/day)								
	1992-93	1997-98	2003-04	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
GUJARAT	247	288	335	385	401	416	430	445	471
Ahmedabad	136	126	107	114	118	126	132	132	133
Amreli	331	392	410	415	441	456	470	503	576
Anand			446	473	481	508	549	573	645
Banaskantha	405	484	618	810	861	884	913	979	1,060
Bharuch	178	187	237	222	239	257	264	260	273
Bhavnagar	260	352	335	340	357	365	374	368	394
Dahod			287	215	219	232	253	257	297
Gandhinagar			427	642	674	724	762	792	851
Jamnagar	210	234	287	357	362	370	386	388	420
Junagadh	313	331	353	400	413	431	462	482	530
Kachchh	314	409	343	412	449	441	462	473	501
Kheda	329	396	383	507	513	554	602	625	661
Mehsana	491	711	862	883	921	982	1,026	1,061	1,059
Narmada			230	300	297	321	331	334	308
Navsari			260	386	389	401	408	421	459
Panchmahals	166	251	305	436	482	476	495	514	551
Patan			719	653	674	700	725	813	744
Porbandar			486	534	538	551	559	588	639
Rajkot	201	242	271	305	314	319	321	327	347
Sabarkantha	418	488	715	863	901	935	948	975	1,041
Surat	123	127	211	243	157	156	158	160	169
Surendranagar	277	313	346	421	456	503	516	545	588
Tapi					583	599	625	652	637
The Dangs			39	205	226	253	268	281	271
Vadodara	170	161	211	232	250	257	252	256	267
Valsad	133	169	187	243	258	254	268	274	271

NOTE: Ahmedabad includes Gandhinagar and Valsad includes The Dangs districts for the year 1992-93 and 1997-98.

SOURCE: Estimated from Survey Reports on Estimates of Major Livestock Products (1992-93 to 2012-13), Directorate of Animal Husbandry, Gujarat State, Gandhinagar.



District-wise Per Capita Milk Availability (gm/day)





IV.1. Integrated Sample Survey (ISS) Figures: Milk Utilisation

TABLE IV.1.18: Milk Utilisation Pattern in Households – 1997-98 to 2012-13

Item	1997-98	2000-01	2003-04	2006-07	2007-08	2008-09	2009-10	2011-12	2012-13
1. Production in Selected Households (kg)	36,001	1,06,455	1,14,341	1,27,657	1,33,591	1,50,608	1,57,236	1,42,771	1,17,321
2. Purchased									
a. Quantity (kg)	57	114.5	55.7	71.6	29.2	24.0	34.0	18.0	22.5
b. Average rate of purchase (Rs. per kg) sold	8.85	11.59	13.10	15.18	14.40	14.40	19.90	30.28	30.27
3. Sold									
a. Quantity (kg)	18,810	55,497	64,552	73,458	79,023	91,036	99,619	94,550	77,347
b. Average rate of selling (Rs. per kg)	8.81	10.30	12.31	13.01	14.08	17.40	17.68	24.57	26.43
4. Converted into Milk Products (kg)	4,624	11,437	11,561	14,571	14,536	14,096	13,442	8,347	6,100
5. Consumed at Home (kg)	12,624	39,634	38,283	39,809	40,062	45,499	44,209	39,892	33,895
a. Converted into milk products (%)	12.82	10.73	10.11	11.41	10.88	9.36	8.55	5.85	5.20
b. Consumed at home (%)	35.01	37.19	33.47	31.17	29.98	30.21	28.11	27.94	28.89

SOURCE: Survey Reports on Estimates of Major Livestock Products (1997-98 to 2012-13), Directorate of Animal Husbandry, Gujarat State, Gandhinagar.





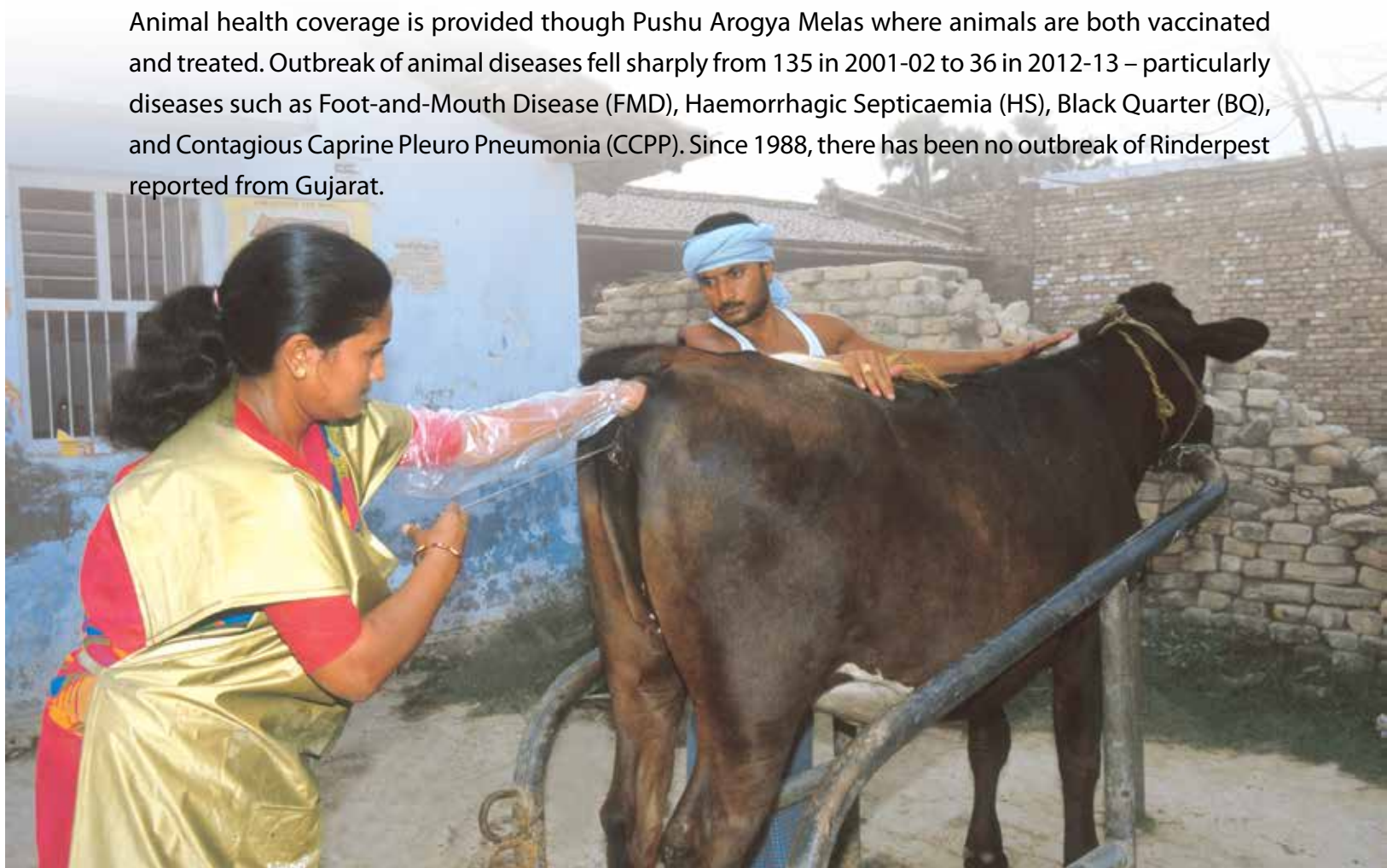
PART V: VETERINARY INFRASTRUCTURE & SERVICE DELIVERY

Given the importance of dairying in Gujarat, the State has an organised health care system right at the village level. The government has set up 645 veterinary dispensaries along with 27 branches, 35 mobile dispensaries, 552 First Aid veterinary centres, and 23 polyclinics.

Dairy cooperatives in Gujarat also provide health care through 684 mobile veterinary service centres at the farmer level and about 4,000 Artificial Insemination (AI) centres. During 2012-13, the cooperatives organised about 11,600 cattle camps, treated 3.3 million bovines, performed 4.4 million artificial inseminations, diagnosed 2.6 million bovine pregnancies and vaccinated 8.9 million dairy animals for Haemorrhagic Septicaemia (HS), Foot-and-Mouth Disease (FMD), Theileriasis, Anti Rabies Vaccine (ARV), etc.

In addition, at Gandhinagar, there is a Biological Product Station (dealing with vaccine production for 15 diseases like Peste des Petits Ruminants - PPR, Mareks, Ranikhet Disease - RD, etc). Cattle development projects have been taken up to improve the breed of cattle and buffaloes. In the past decade, the number of district AI centres has doubled while the number of AIs carried out has increased about threefold. In 2012-13, a total of 5.9 million AIs were performed on bovines which includes 3.1 million AIs on buffaloes and 2.8 million on cattle.

Animal health coverage is provided through Pushu Arogya Melas where animals are both vaccinated and treated. Outbreak of animal diseases fell sharply from 135 in 2001-02 to 36 in 2012-13 – particularly diseases such as Foot-and-Mouth Disease (FMD), Haemorrhagic Septicaemia (HS), Black Quarter (BQ), and Contagious Caprine Pleuro Pneumonia (CCPP). Since 1988, there has been no outbreak of Rinderpest reported from Gujarat.





V.1. Veterinary Infrastructure

TABLE V.1.1: Year & District-wise Veterinary Institutes

Districts	Number of Veterinary Institutes							
	1993-94	1997-98	2003-04	2007-08	2009-10	2010-11	2011-12	2012-13
GUJARAT	1,015	1,057	1,081	1,114	1,224	1,249	1,232	1,282
Ahmedabad	40	42	38	40	49	49	48	50
Amreli	44	46	50	50	56	57	56	57
Anand			34	34	38	40	40	40
Banaskantha	71	75	68	73	86	86	85	89
Bharuch	59	59	36	37	38	40	39	44
Bhavnagar	54	59	53	55	59	59	58	58
Dahod			39	41	42	45	44	45
Gandhinagar	7	8	24	24	31	31	31	35
Jamnagar	44	47	49	54	57	58	57	58
Junagadh	56	63	55	56	60	60	59	61
Kachchh	53	56	60	61	63	65	64	68
Kheda	64	65	33	33	38	40	40	41
Mehsana	66	68	41	39	46	47	46	50
Narmada			25	25	25	27	27	30
Navsari			29	30	31	31	30	31
Panchmahals	100	101	63	67	73	74	74	75
Patan			29	32	43	43	43	45
Porbandar			14	14	17	19	19	19
Rajkot	45	49	51	53	59	59	58	61
Sabarkantha	72	73	75	78	86	86	85	87
Surat	75	75	75	77	41	43	42	45
Surendranagar	40	42	43	44	48	48	47	49
Tapi					36	38	38	40
The Dangs	14	14	14	14	14	15	15	15
Vadodara	54	59	57	58	58	59	58	60
Valsad	57	57	28	28	30	30	29	29

NOTE: Veterinary institutes include polyclinics, veterinary hospitals, mobile dispensaries and veterinary dispensaries.

SOURCE: Bulletin of Animal Husbandry and Dairying Statistics (1993-94 to 2012-13), Directorate of Animal Husbandry, Gujarat State.



V.1. Veterinary Infrastructure

TABLE V.1.2: District-wise Artificial Insemination (AI) Centres – Government Agencies

Districts	Number of AI Centres								
	1993-94	1997-98	2000-01	2003-04	2007-08	2009-10	2010-11	2011-12	2012-13
GUJARAT	1,277	1,360	1,312	1,304	1,231	1,644	1,835	2,131	2,524
Ahmedabad	70	100	63	88	70	76	85	93	94
Amreli	166	23	50	50	42	64	101	121	144
Anand			10	11	12	12	18	21	41
Banaskantha	12	82	116	70	71	114	99	148	300
Bharuch	78	43	58	58	43	52	103	105	115
Bhavnagar	37	94	58	55	57	78	83	127	130
Dahod			15	15	14	33	29	64	82
Gandhinagar	23	4	81	55	81	87	89	90	109
Jamnagar	62	24	27	27	11	27	33	33	51
Junagadh	25	89	76	76	53	98	115	147	146
Kachchh	25	32	11	12	10	13	60	62	63
Kheda	24	44	22	21	14	16	25	31	51
Mehsana	149	153	110	111	107	115	119	134	141
Narmada			18	18	19	28	26	25	36
Navsari			62	62	55	63	66	74	74
Panchmahals	51	65	42	42	39	85	92	90	89
Patan			23	23	37	101	97	100	118
Porbandar			13	13	10	19	23	18	18
Rajkot	102	96	119	112	102	124	130	123	122
Sabarkantha	80	117	98	98	114	131	134	170	184
Surat	128	134	136	109	101	90	94	95	96
Surendranagar	32	16	41	41	36	57	60	62	101
Tapi						25	9	15	35
The Dangs	2	9	4	4	10	8	2	20	20
Vadodara	116	149	108	106	89	93	105	116	117
Valsad	95	100	31	27	34	35	38	47	47

SOURCE: Bulletin of Animal Husbandry and Dairying Statistics (1993-94 to 2012-13), Directorate of Animal Husbandry, Gujarat State.



V.1. Veterinary Infrastructure

Table V.1.3: District-wise Artificial Insemination (AI) Centres – Cooperatives

Districts	Number of AI Centres								
	1993-94	1997-98	2000-01	2003-04	2007-08	2009-10	2010-11	2011-12	2012-13
GUJARAT	1,775	2,830	2,246	2,892	3,343	3,685	3,853	4,047	4,047
Ahmedabad	39	60	42	52	45	56	63	81	81
Amreli	100	100							
Anand			877	905	439	390		394	394
Banaskantha	89	141	182	260	497	590	632	691	691
Bharuch	29	36	44	27	21	20	19	20	20
Bhavnagar	25	12							
Dahod					32	40	42	55	55
Gandhinagar	6	3	3	3	128	131	135	141	141
Jamnagar	25	25							
Junagadh	65	4							
Kachchh									
Kheda	819	1,344			558	669	1,054	660	660
Mehsana	15	357	384	384	302	362	393	413	413
Narmada					10	13	16	22	22
Navsari					121	123	121	103	103
Panchmahals	146	104	123	157	212	221	225	248	248
Patan					90	116	153	146	146
Porbandar									
Rajkot	15	16	18	22	69	68	92	105	105
Sabarkantha	158	288	160	177	209	215	230	240	240
Surat	65	89	107	135	201	242	132	141	141
Surendranagar	19								
Tapi							119	121	121
The Dangs					39	37	34	35	35
Vadodara	40	107	150	582	245	263	280	312	312
Valsad	120	144	156	188	125	129	113	119	119

SOURCE: Bulletin of Animal Husbandry and Dairying Statistics (1993-94 to 2012-13), Directorate of Animal Husbandry, Gujarat State.



V.1. Veterinary Infrastructure

TABLE V.1.4: District-wise Artificial Insemination (AI) Centres – BAIF & JK Trust

Districts	Number of AI Centres								
	1993-94	1997-98	2000-01	2003-04	2007-08	2009-10	2010-11	2011-12	2012-13
GUJARAT	115	117	135	104	487	747	893	460	574
Ahmedabad	5	5	5	4	5	5	5	3	10
Amreli	10	10	12		9	23	23	18	23
Anand									
Banaskantha					6	51	51	58	30
Bharuch	12	11	17	9	10	29	29	25	8
Bhavnagar	10	10	10	6	12	23	25	22	22
Dahod			5	5	94	104	102	5	49
Gandhinagar									
Jamnagar					85	100	100	10	61
Junagadh	9	11	11	11	17	49	41	46	43
Kachchh		5	5	5	13	10	10	8	6
Kheda									
Mehsana	4	4	5	5	10	14	14	14	18
Narmada				3	1	60	60	1	17
Navsari			6	5	45	65	65	14	14
Panchmahals	8	11	6	6	6	36	46	16	22
Patan					1	2	3	4	3
Porbandar				1		3	3	2	3
Rajkot	5	8	13	13	12	13	13	12	12
Sabarkantha						15	15	15	8
Surat	20	18	20	12	14	13	13	8	7
Surendranagar					94	101	101	8	49
Tapi						2	2	9	7
The Dangs	3				12		2	3	3
Vadodara	15	10	13	12	12	14	154	158	158
Valsad	14	14	7	7	29	15	16	1	1

SOURCE: Bulletin of Animal Husbandry and Dairying Statistics (1993-94 to 2012-13), Directorate of Animal Husbandry, Gujarat State.



V.2. Service Delivery System

TABLE V.2.1: District-wise Artificial Inseminations (AIs) Performed – Cattle

Districts	Number of AIs Performed							
	1993-94	1997-98	2003-04	2007-08	2009-10	2010-11	2011-12	2012-13
GUJARAT	6,53,246	5,52,709	10,34,872	17,58,497	23,43,803	24,76,918	25,48,785	27,73,622
Ahmedabad	12,258	10,501	7,803	14,477	33,666	31,605	27,103	63,686
Amreli	21,485	6,399	3,652	9,025	13,622	15,689	16,645	22,966
Anand			2,20,315	1,15,215	99,581	3,570	1,43,135	1,56,401
Banaskantha	16,803	1,320	1,10,176	2,15,215	3,39,924	3,79,153	4,86,825	5,74,057
Bharuch	12,907	6,004	6,792	12,484	22,232	12,582	20,113	16,373
Bhavnagar	16,549	12,525	13,557	21,470	30,874	32,617	30,404	33,401
Dahod			2,372	7,491	16,610	14,921	9,748	20,520
Gandhinagar	3,838	259	17,171	2,11,384	2,41,075	2,15,895	2,09,105	1,92,369
Jamnagar	2,451	787	1,142	1,761	8,880	8,584	3,166	9,401
Junagadh	11,321	7,786	11,937	22,099	43,972	45,061	50,230	60,649
Kachchh	1,104	1,456	2,738	3,864	6,396	6,590	5,545	6,063
Kheda	1,41,988	1,15,707	560	96,326	1,50,801	2,52,065	1,22,583	1,30,052
Mehsana	2,16,691	1,81,771	2,53,932	2,78,689	3,49,492	3,72,667	3,46,566	3,32,185
Narmada			2,109	4,569	14,875	29,456	9,355	10,555
Navsari			12,673	1,07,585	1,79,703	1,82,217	1,03,508	1,15,246
Panchmahals	17,089	8,700	25,403	50,414	72,042	89,438	104,940	1,08,017
Patan			599	28,459	40,355	48,609	2,87,295	56,965
Porbandar			202	648	2,946	1,667	1,611	2,086
Rajkot	20,617	18,647	22,625	54,604	63,989	69,721	72,296	75,374
Sabarkantha	48,172	55,480	1,21,758	2,11,835	2,52,421	2,66,164	56,889	3,12,254
Surat	39,541	39,533	65,619	1,33,623	1,88,941	1,94,620	1,34,913	1,62,487
Surendranagar	1,434	348	881	8,243	19,149	18,633	10,373	17,127
Tapi					4,638	4,724	87,568	94,449
The Dangs	278	9	231	8,510	6,119	7,530	8,067	9,348
Vadodara	35,089	24,929	32,938	78,959	71,547	84,740	89,508	86,492
Valsad	33,631	60,548	97,693	60,677	69,953	88,400	1,11,294	1,05,099

SOURCE: Bulletin of Animal Husbandry and Dairying Statistics (1993-94 to 2012-13), Directorate of Animal Husbandry, Gujarat State.



V.2. Service Delivery System

TABLE V.2.2: District-wise Artificial Inseminations (AIs) Performed – Buffalo

Districts	Number of AIs Performed							
	1993-94	1997-98	2003-04	2007-08	2009-10	2010-11	2011-12	2012-13
GUJARAT	11,45,360	11,41,083	12,52,794	22,98,874	28,23,025	29,13,220	29,98,540	31,23,744
Ahmedabad	24,199	36,036	25,626	44,929	60,707	53,434	71,971	1,08,391
Amreli	7,766	2,596	3,014	10,018	16,069	16,604	19,318	23,306
Anand			3,20,348	3,63,271	2,64,228	4,880	3,16,601	2,95,752
Banaskantha	14,466	3,378	1,01,736	2,15,215	2,91,748	3,13,120	3,58,687	4,04,843
Bharuch	19,014	7,440	9,485	12,484	28,881	35,023	34,361	29,871
Bhavnagar	4,735	5,428	6,388	21,863	36,291	34,575	40,109	43,972
Dahod			1,751	12,801	33,257	28,538	22,720	41,545
Gandhinagar	12,242	3,443	24,656	1,35,020	1,45,162	1,51,319	1,61,542	12,6,359
Jamnagar	1,936	604	1,804	7,620	31,839	29,269	10,212	39,307
Junagadh	4,430	6,096	10,307	29,523	48,535	49,685	55,830	65,950
Kachchh	91	260	386	810	1,438	1,398	899	779
Kheda	5,98,187	5,24,806	652	2,85,331	3,96,057	6,41,192	3,22,935	3,24,919
Mehsana	2,99,086	3,05,455	2,83,261	2,95,437	3,47,429	3,47,563	3,46,227	3,42,876
Narmada			2,545	6,692	17,988	21,285	14,977	16,384
Navsari			3,483	38,053	50,685	61,512	32,527	36,535
Panchmahals	29,597	23,865	88,909	1,77,647	2,14,817	2,43,653	2,57,412	2,49,537
Patan			3,745	63,075	93,436	98,402	3,01,896	1,17,323
Porbandar			5,338	10,031	17,549	15,015	15,345	15,689
Rajkot	5,522	7,575	16,074	44,654	58,075	64,062	68,840	80,139
Sabarkantha	47,097	1,08,632	1,60,936	2,44,740	2,71,889	2,86,369	1,15,224	3,06,840
Surat	19,418	21,629	46,548	1,03,137	1,36,705	1,56,321	86,265	85,756
Surendranagar	359	131	1,147	5,939	15,497	14,241	8,353	15,137
Tapi					2,822	2,674	79,688	81,989
The Dangs	42	11	53	502	2,208	1,159	944	1,061
Vadodara	50,619	72,034	1,07,634	1,63,022	1,95,482	2,15,336	2,21,428	2,35,905
Valsad	6,554	11,664	26,968	15,588	44,231	26,591	34,229	33,579

SOURCE: Bulletin of Animal Husbandry and Dairying Statistics (1993-94 to 2012-13), Directorate of Animal Husbandry, Gujarat State.





V.2. Service Delivery System

TABLE V.2.3: District-wise Artificial Inseminations (AIs) Performed – Cattle and Buffalo

Districts	Number of AIs Performed							
	1993-94	1997-98	2003-04	2007-08	2009-10	2010-11	2011-12	2012-13
GUJARAT	17,98,606	16,93,792	22,87,666	40,57,371	51,66,828	53,90,138	55,47,325	58,97,366
Ahmedabad	36,457	46,537	33,429	59,406	94,373	85,039	99,074	1,72,077
Amreli	29,251	8,995	6,666	19,043	29,691	32,293	35,963	46,272
Anand			5,40,663	4,78,486	3,63,809	8,450	4,59,736	4,52,153
Banaskantha	31,269	4,698	2,11,912	4,30,430	6,31,672	6,92,273	8,45,512	9,78,900
Bharuch	31,921	13,444	16,277	24,968	51,113	47,605	54,474	46,244
Bhavnagar	21,284	17,953	19,945	43,333	67,165	67,192	70,513	77,373
Dahod			4,123	20,292	49,867	43,459	32,468	62,065
Gandhinagar	16,080	3,702	41,827	3,46,404	3,86,237	3,67,214	3,70,647	3,18,728
Jamnagar	4,387	1,391	2,946	9,381	40,719	37,853	13,378	48,708
Junagadh	15,751	13,882	22,244	51,622	92,507	94,746	1,06,060	1,26,599
Kachchh	1,195	1,716	3,124	4,674	7,834	7,988	6,444	6,842
Kheda	7,40,175	6,40,513	1,212	3,81,657	5,46,858	8,93,257	4,45,518	4,54,971
Mehsana	5,15,777	4,87,226	5,37,193	5,74,126	6,96,921	7,20,230	6,92,793	6,75,061
Narmada			4,654	11,261	32,863	50,741	24,332	26,939
Navsari			16,156	1,45,638	2,30,388	2,43,729	1,36,035	1,51,781
Panchmahals	46,686	32,565	1,14,312	2,28,061	2,86,859	3,33,091	3,62,352	3,57,554
Patan			4,344	91,534	1,33,791	1,47,011	5,89,191	1,74,288
Porbandar			5,540	10,679	20,495	16,682	16,956	17,775
Rajkot	26,139	26,222	38,699	99,258	1,22,064	1,33,783	1,41,136	1,55,513
Sabarkantha	95,269	1,64,112	2,82,694	4,56,575	5,24,310	5,52,533	1,72,113	6,19,094
Surat	58,959	61,162	1,12,167	2,36,760	3,25,646	3,50,941	2,21,178	2,48,243
Surendranagar	1,793	479	2,028	14,182	34,646	32,874	18,726	32,264
Tapi					7,460	7,398	1,67,256	1,76,438
The Dangs	320	20	284	9,012	8,327	8,689	9,011	10,409
Vadodara	85,708	96,963	1,40,572	2,41,981	2,67,029	3,00,076	3,10,936	3,22,397
Valsad	40,185	72,212	1,24,661	76,265	1,14,184	1,14,991	1,45,523	1,38,678

SOURCE: Bulletin of Animal Husbandry and Dairying Statistics (1993-94 to 2012-13), Directorate of Animal Husbandry, Gujarat State.



V.2. Service Delivery System

TABLE V.2.4: Animal Disease Status Report of Gujarat State

Disease	Number of Disease Outbreaks							
	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Total	108	60	59	54	49	43	39	36
Foot-and-Mouth Disease (FMD)	25	13	13	8	18	8	2	2
Haemorrhagic Septicaemia (HS)	27	18	13	24	12	15	19	7
Black Quarter	8	2	0	2	0	3	2	1
Anthrax	6	0	1	1	1	0	0	
Rabies	1	2	3	2	4	0	1	3
Contagious Caprine Pleuro Pneumonia (CCPP)	7	0	1	2	0	5	0	2
Enterotoxaemia (ET)	0	0	0	0	0	0	1	3
Goatpox	0	0	0	7	0	0	0	1
Sheeppox	4	4	12	0	1	0	0	1
Cowpox/Buffalopox	11	1	3	5	2	1	2	
Peste des Petits Ruminants (PPR)	0	3	3	1	5	3	7	1
Trypanosomiasis	3	2	1	1	0	3	3	3
Infectious Bursal Disease (IBD)	2	1	1	0	0	0	1	4
Ranikhet Disease (RD)	2	2	0	1	1	0	0	2
Coccidiosis	3	1	2	0	0	0	0	3
Thileriosis	0	0	0	0	0	0	0	1
Collibacillosis	0	0	0	0	0	0	0	
Fascioliasis	1	0	0	0	1	0	0	2
Marek's Disease	0	0	0	0	0	0	0	0
Salmonellosis	0	0	0	0	0	3	0	0
Chronic	3	0	1		0	0	0	0
Respiratory Disease				0				
Mycotoxicis	4	0	0	0	0	0	0	0
Brucellosis	0	0	1	0	0	0	0	0
Contagious Bovine Pleuro Pneumonia (CBPP)	0	0	0	0	0	0	0	0
Mycoplasmosis	0	4	4	0	0	0	0	0
Bird Flu	1	0	0	0	0	0	0	0
Foot Root	0	7	0	0	0	2	0	0
Equine Influenza	0	0	0	0	4	0	0	0
Fowlpox	0	0	0	0	0	0	1	0

SOURCE: Bulletin of Animal Husbandry and Dairying Statistics (1993-94 to 2012-13), Directorate of Animal Husbandry, Gujarat State.



V.2. Service Delivery System

TABLE V.2.5: District-wise Vaccinations Performed for Foot-and-Mouth Disease

Districts	Foot-and-Mouth Disease Vaccination ('000)								
	1993-94	1997-98	2003-04	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
GUJARAT	597	634	3,954	9,364	12,205	8,236	17,297	15,456	22,493
Ahmedabad	25	43	103	615	508	101	326	445	884
Amreli	9	5	18	185	156	56	199	409	523
Anand			5	38	55	11	4	76	162
Banaskantha	14	9	1,070	1,755	2,866	2,444	3,964	2,152	4,153
Bharuch	24	25	25	71	53	86	200	262	207
Bhavnagar	16	17	35	361	237	87	288	483	1,016
Dahod			3	65	62	75	482	586	929
Gandhinagar	12	13	19	36	76	9	198	248	449
Jamnagar	13	4	29	243	265	94	295	439	685
Junagadh	5	17	43	295	244	52	238	590	915
Kachchh	129	93	39	249	168	89	366	430	564
Kheda	17	0	52	1,051	1,052	776	915	1018	1,302
Mehsana	25	29	769	937	1126	930	1648	2476	1533
Narmada			21	73	81	40	137	171	184
Navsari			18	37	25	80	90	61	62
Panchmahals	16	13	13	340	451	382	529	854	299
Patan			290	187	280	294	764	185	407
Porbandar			5	48	35	13	80	90	130
Rajkot	25	22	73	343	317	104	372	523	968
Sabarkantha	33	37	948	1,444	3,240	1,910	3,759	1,515	3,752
Surat	110	147	156	198	171	96	960	883	1,177
Surendranagar	7	12	29	182	200	47	276	281	394
Tapi					28	23	110	151	249
The Dangs	40	44	34	37	51	32	104	24	45
Vadodara	37	22	39	333	264	187	676	829	1,177
Valsad	38	83	118	209	192	217	316	276	329

SOURCE: Bulletin of Animal Husbandry and Dairying Statistics (1993-94 to 2012-13), Directorate of Animal Husbandry, Gujarat State.



V.2. Service Delivery System

TABLE V.2.6: District-wise Vaccinations Performed for Haemorrhagic Septicaemia

Districts	Haemorrhagic Septicaemia Vaccination ('000)								
	1993-94	1997-98	2003-04	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
GUJARAT	6,309	5,702	6,833	8,196	7,654	9,458	10,152	10,547	9,994
Ahmedabad	309	471	749	1,012	847	401	747	535	529
Amreli	272	80	114	65	67	106	113	165	166
Anand			215	291	305	360	352	348	304
Banaskantha	313	250	462	916	1,129	1,235	1,178	1,218	1,219
Bharuch	292	136	123	62	60	247	268	299	219
Bhavnagar	456	369	349	242	191	221	262	239	232
Dahod			187	196	150	286	317	210	123
Gandhinagar	96	39	122	138	131	525	452	459	443
Jamnagar	193	73	106	106	76	101	66	84	105
Junagadh	144	213	198	294	149	210	251	274	178
Kachchh	607	172	307	218	189	210	173	253	284
Kheda	410	337	218	461	284	572	708	600	626
Mehsana	705	813	563	778	750	894	842	1,110	804
Narmada			71	63	69	130	118	132	104
Navsari			59	183	108	209	142	146	211
Panchmahals	450	339	358	369	354	434	450	546	516
Patan			162	197	188	375	281	391	376
Porbandar			68	70	28	75	57	48	45
Rajkot	352	235	319	388	281	329	314	337	285
Sabarkantha	455	431	693	729	684	857	817	759	706
Surat	426	344	390	398	359	381	795	784	867
Surendranagar	141	113	144	135	201	188	198	240	214
Tapi					53	117	153	147	135
The Dangs	40	30	9	11	9	11	25	19	10
Vadodara	446	409	621	706	700	797	786	845	947
Valsad	201	850	226	165	291	188	288	362	348

SOURCE: Bulletin of Animal Husbandry and Dairying Statistics (1993-94 to 2012-13), Directorate of Animal Husbandry, Gujarat State.



V.2. Service Delivery System

TABLE V.2.7: District-wise Vaccinations Performed for Black Quarter

Districts	Black Quarter Vaccination ('000)								
	1993-94	1997-98	2003-04	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
GUJARAT	998	647	673	698	518	606	682	587	613
Ahmedabad	6	0	0	3	0	0	1	0	3
Amreli	94	33	42	29	21	28	53	43	45
Anand				2	0	0	0	0	0
Banaskantha	14	9	3	13	0	0	2	1	4
Bharuch	38	19	5	8	7	12	26	12	2
Bhavnagar	118	105	64	70	59	37	57	59	57
Dahod			6	52	12	0	23	28	30
Gandhinagar	0	0	0	0	0	0	0	0	0
Jamnagar	26	20	10	21	20	7	9	3	5
Junagadh	50	37	61	25	27	14	25	33	27
Kachchh	30	45	2	19	9	2	3	4	4
Kheda	3	0	0	5	0	0	0	0	2
Mehsana	11	0	0	8	0	0	0	0	0
Narmada			31	46	40	35	18	32	27
Navsari			13	107	7	119	54	43	86
Panchmahals	28	0	4	10	0	0	0	0	0
Patan			0	5	0	2	0	0	0
Porbandar			10	18	16	13	10	9	13
Rajkot	152	148	222	65	60	64	57	39	48
Sabarkantha	12	6	2	6	0	0	0	0	0
Surat	109	84	33	51	43	58	120	104	106
Surendranagar	37	28	40	22	23	33	30	25	25
Tapi					23	63	29	25	42
The Dangs	53	57	39	66	66	62	36	39	49
Vadodara	88	6	5	21	0	3	0	0	0
Valsad	129	49	83	25	94	57	131	88	39

SOURCE: Bulletin of Animal Husbandry and Dairying Statistics (1993-94 to 2012-13), Directorate of Animal Husbandry, Gujarat State.



V.2. Service Delivery System

TABLE V.2.8: District-wise Bovines Vaccinated

Districts	Bovines Vaccinated ('000)								
	1993-94	1997-98	2003-04	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
GUJARAT	7,904	6,983	11,460	18,258	20,377	18,300	28,131	26,590	33,100
Ahmedabad	340	514	852	1,630	1,355	502	1,074	980	1,416
Amreli	375	118	174	279	244	190	365	617	734
Anand			220	331	360	371	356	424	466
Banaskantha	341	268	1,535	2,684	3,995	3,679	5,144	3,371	5,376
Bharuch	354	180	153	141	120	345	494	573	428
Bhavnagar	590	491	448	673	487	345	607	781	1,305
Dahod			196	313	224	361	822	824	1,082
Gandhinagar	108	52	141	174	207	534	650	707	892
Jamnagar	232	97	145	370	361	202	370	526	795
Junagadh	199	267	302	614	420	276	514	897	1,120
Kachchh	766	310	348	486	366	301	542	687	852
Kheda	430	337	270	1,517	1,336	1,348	1,623	1,618	1,930
Mehsana	741	842	1,332	1,723	1,876	1,824	2,490	3,586	2,337
Narmada			123	182	190	205	273	335	315
Navsari			90	327	140	408	286	250	359
Panchmahals	494	352	375	719	805	816	979	1,400	815
Patan			452	389	468	671	1,045	576	783
Porbandar			83	136	79	101	147	147	188
Rajkot	529	405	614	796	658	497	743	899	1,301
Sabarkantha	500	474	1,643	2,179	3,924	2,767	4,576	2,274	4,458
Surat	645	575	579	647	573	535	1,875	1,771	2,150
Surendranagar	185	153	213	339	424	268	504	546	633
Tapi					104	203	292	323	426
The Dangs	133	131	82	114	126	105	165	82	104
Vadodara	571	437	665	1,060	964	987	1,462	1,674	2,124
Valsad	368	982	427	399	577	462	735	726	716

SOURCE: Bulletin of Animal Husbandry and Dairying Statistics (1993-94 to 2012-13), Directorate of Animal Husbandry, Gujarat State.



V.2. Service Delivery System

TABLE V.2.9: District-wise Bovines Treated

Districts	Bovines Treated ('000)								
	1993-94	1997-98	2003-04	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
GUJARAT	4,863.10	3,585.00	2,468.50	2,775.70	2,541.70	2,992.30	3,456.50	3,043.30	4,284.30
Ahmedabad	167.4	119.3	123.5	108.8	86.3	226.0	152.1	201.7	88.5
Amreli	143.8	101.8	66.3	60.4	63.5	65.2	141.6	96.8	288.2
Anand			147.9	123.5	120.3	106.8	116.0	88.6	79.6
Banaskantha	226.2	113.4	219.2	223.2	180.6	274.5	395.4	322.9	326.5
Bharuch	207.7	107.8	54.4	48.4	47.9	36.8	54.9	41.4	57.1
Bhavnagar	367.2	185.8	104.3	181.6	217.7	177.1	223.7	184.8	288.0
Dahod			110.4	111.7	99.7	62.1	132.6	111.6	137.1
Dangs	113.9	119.7	98.7	63.5	59.4	49.6	79.0	62.0	61.5
Gandhinagar	48.0	14.0	43.5	50.0	60.2	70.3	75.6	73.4	496.4
Jamnagar	305.9	161.7	148.3	353.1	103.3	490.4	303.2	225.0	274.6
Junagadh	283.9	173.6	210.2	210.0	230.9	271.3	252.7	220.5	391.0
Kachchh	141.5	589.9	122.4	119.3	113.2	125.8	146.0	149.0	74.8
Kheda	246.7	171.0	80.8	87.8	80.9	81.9	79.3	87.5	113.9
Mehsana	545.5	213.6	76.6	87.7	87.4	80.1	137.7	123.9	52.8
Narmada				23.8	23.1	49.2	25.1	28.5	75.3
Navsari			59.4	64.5	64.1	42.2	56.6	60.5	128.9
Panchmahals	258.2	245.8	97.0	88.6	87.0	58.5	87.0	98.7	108.0
Patan			53.1	58.7	80.6	70.8	84.2	91.5	156.2
Porbandar			19.7	36.8	25.7	18.1	43.0	32.9	358.9
Rajkot	223.3	137.2	89.1	87.3	81.9	121.4	101.1	91.8	198.6
Sabarkantha	287.7	211.7	118.1	178.1	166.7	131.2	184.0	174.0	103.7
Surat	508.9	216.8	115.8	139.5	86.9	74.4	121.1	115.3	103.9
Surendranagar	122.7	87.7	130.3	96.8	155.2	103.0	155.5	113.8	45.0
Tapi					65.0	69.6	55.2	27.6	50.8
Vadodara	284.0	214.2	90.7	116.6	101.0	94.0	167.3	150.2	146.7
Valsad	380.6	186.8	56.7	55.9	53.1	40.1	86.6	69.5	78.5

SOURCE: Bulletin of Animal Husbandry and Dairying Statistics (1993-94 to 2012-13), Directorate of Animal Husbandry, Gujarat State.



V.2. Service Delivery System

TABLE V.2.10: District-wise Bovines Castrated

Districts	Bovines Castrated ('000)								
	1993-94	1997-98	2003-04	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
GUJARAT	243.9	212.8	199.6	238.4	224.4	241.4	254.0	237.6	291.9
Ahmedabad	10.0	10.9	8.8	20.3	18.0	21.2	18.2	15.8	14.8
Amreli	8.8	6.8	7.3	5.7	5.4	4.7	5.1	7.7	9.5
Anand			6.2	5.6	5.8	6.0	5.2	5.7	6.0
Banaskantha	17.9	12.1	14.2	14.8	18.0	17.0	17.1	16.0	19.8
Bharuch	14.8	9.4	7.2	4.7	4.3	4.6	5.0	4.7	7.5
Bhavnagar	18.2	12.8	7.7	11.7	10.1	10.8	10.4	10.4	11.3
Dahod			6.5	7.5	5.5	5.6	7.3	6.6	9.3
Gandhinagar	2.2	1.1	5.6	4.4	4.4	5.0	5.4	5.0	5.1
Jamnagar	9.5	6.0	8.7	6.1	6.6	6.7	6.7	7.4	13.6
Junagadh	9.3	11.0	8.4	11.0	11.9	11.9	11.9	11.4	14.1
Kachchh	12.8	9.4	10.9	9.1	8.3	8.7	7.4	7.3	11.2
Kheda	11.3	9.8	6.5	5.5	5.4	6.1	5.6	5.6	6.9
Mehsana	21.3	21.3	8.6	14.7	8.0	14.3	14.0	14.3	14.7
Narmada			4.5	1.7	1.8	1.7	3.9	2.8	4.9
Navsari			6.3	4.8	4.3	4.7	4.1	4.6	6.6
Panchmahals	15.9	13.3	11.2	11.8	10.8	12.4	13.6	13.6	17.6
Patan			5.5	5.1	4.9	7.7	10.0	11.0	12.0
Porbandar			2.7	2.3	2.6	1.9	1.9	1.7	2.4
Rajkot	18.2	12.6	8.4	16.0	14.8	13.7	14.5	14.4	17.3
Sabarkantha	15.1	17.2	13.0	17.3	18.3	17.7	25.2	20.2	22.3
Surat	19.1	19.7	12.9	19.6	14.0	13.5	15.2	13.6	15.4
Surendranagar	6.6	5.3	9.3	6.9	7.8	6.6	7.5	7.4	11.0
Tapi					5.0	5.2	4.7	1.7	6.2
The Dangs	2.2	2.4	2.7	3.1	3.0	3.3	3.7	2.7	4.3
Vadodara	17.6	18.9	12.2	19.1	16.7	21.9	22.6	18.1	19.8
Valsad	13.2	12.8	4.4	9.7	8.6	8.7	7.6	7.8	8.3

SOURCE: Bulletin of Animal Husbandry and Dairying Statistics (1993-94 to 2012-13), Directorate of Animal Husbandry, Gujarat State.



PART VI: FEED RESOURCES

As against the estimated animals' requirements, feed resources available in Gujarat are lower. In the last decade (2003 to 2011), shortage of Dry Matter in the State reduced from 137 per cent of the requirement to 66 per cent; Total Digestible Nutrients from 200 per cent to 73 per cent while the Crude Protein availability increased from -98 per cent to a surplus of 19 per cent.

Eleven cattle feed factories, in the cooperative sector and spread across the State, produced about 2.6 million tonnes of concentrated cattle feed for bovines during 2012-13 and was sold at prices ranging from Rs. 11.9 to 14.3 a kg. The usage of concentrate increased from 2.1 kg to 2.7 kg per in-milk cattle, while for buffaloes, it declined from 3.0 kg to 2.7 kg during the same period.

Green fodder is a comparatively economical source of nutrients. However, the availability of green fodder is lower than estimated requirement. In Gujarat, the area under fodder crop has fallen from 10.5 to 7 per cent of the gross sown area over the last eight years.





TABLE VI.1: Area under Fodder Crops

Districts	Area under Fodder Crops ('000 ha)						Gross Sown Area ('000 ha)					
	2000-01	2003-04	2004-05	2005-06	2006-07	2007-08	2000-01	2003-04	2004-05	2005-06	2006-07	2007-08
GUJARAT	1,099	1,081	1,029	959	901	850	10,497	11,421	11,257	11,495	11,807	12,211
Ahmedabad	110	86	89	96	97	91	533	558	576	597	640	641
Amreli	33	45	44	39	26	21	545	577	584	599	596	633
Anand	10	16	15	15	15	15	195	294	298	307	297	306
Banaskantha	93	99	90	76	80	72	1,008	1,034	968	1,029	985	1,032
Bharuch	25	16	19	18	13	10	325	339	339	319	338	344
Bhavnagar	73	72	79	68	68	46	544	623	582	650	654	687
Dahod	4	5	5	4	4	3	193	300	303	310	309	339
Gandhinagar	27	37	29	31	28	21	204	200	193	187	203	216
Jamnagar	40	44	45	42	38	36	594	691	674	709	708	755
Junagadh	28	38	32	34	34	24	544	684	701	734	787	796
Kachchh	117	112	105	112	91	112	655	728	648	608	702	704
Kheda	14	19	19	20	18	22	352	403	433	407	405	426
Mehsana	81	86	84	84	79	63	457	447	437	449	451	468
Narmada	5	5	3	3	4	3	111	120	120	118	113	114
Navsari	46	30	26	21	12	24	174	170	171	146	151	162
Panchmahals	12	8	8	8	8	4	270	298	309	303	303	316
Patan	72	81	87	91	88	90	423	422	422	447	498	487
Porbandar	10	11	9	10	8	8	125	134	135	148	159	169
Rajkot	36	36	32	34	32	24	726	869	849	888	904	889
Sabarkantha	40	48	38	36	34	27	519	533	524	530	574	616
Surat	51	45	38	38	36	26	490	463	470	489	502	304
Surendranagar	81	65	57	47	58	77	721	734	734	757	762	845
Tapi						10						191
The Dangs	4	3	3	3	3	3	57	58	59	57	58	58
Vadodara	38	27	28	29	27	18	554	565	553	551	556	554
Valsad	49	46	45	N*	N*	N*	178	178	177	154	153	160

* Negligible

SOURCE: Directorate of Economics and Statistics, Department of Agriculture and Cooperation, Ministry of Agriculture, Govt of India.



TABLE VI.2: District-wise Dry Matter (DM) Availability, Requirement and Balance

Districts	Available/ Required/ Balance	Dry Matter Availability, Requirement & Balance ('000 MT)							
		1992	1997	2003	2007	2008	2009	2010	2011
Ahmedabad	Available	842.6	878.0	695.8	979.8	1,092.6	990.1	1,012.1	1,529.5
	Required	-	1,441.1	1,627.1	1,731.3	1,763.3	1,800.8	1,844.5	1,895.1
	Balance	-	-563.2	-931.4	-751.5	-670.8	-810.7	-832.3	-365.7
Amreli	Available	719.5	1,636.5	1,209.4	1,113.9	1,926.0	1,099.9	742.5	1,871.2
	Required	-	1,362.4	1,304.9	1,375.5	1,385.9	1,399.5	1,416.9	1,438.7
	Balance	-	274.1	-95.5	-261.7	540.1	-299.6	-674.4	432.5
Anand	Available		-	176.1	659.4	852.8	777.0	797.9	961.1
	Required		1,657.5	1,607.0	2,072.6	2,180.2	2,299.5	2,431.5	2,577.5
	Balance		-	-1,430.9	-1,413.2	-1,327.4	-1,522.5	-1,633.6	-1,616.4
Banaskantha	Available	1,149.7	1,380.1	1,235.6	1,713.1	2,214.8	1,635.7	1,538.1	2,416.4
	Required	-	2,979.1	3,788.6	4,741.1	4,982.1	5,248.7	5,544.3	5,872.9
	Balance	-	-1,599.0	-2,553.0	-3,028.0	-2,767.4	-3,613.0	-4,006.2	-3,456.5
Bharuch	Available	763.0	837.1	628.6	570.1	478.2	507.5	474.1	555.5
	Required	-	857.3	865.0	836.6	839.8	846.9	857.9	873.4
	Balance	-	-20.1	-236.5	-266.6	-361.6	-339.4	-383.9	-317.9
Bhavnagar	Available	887.0	1,690.5	1,477.9	1,565.2	1,795.6	1,487.1	1,048.0	1,866.4
	Required	-	1,859.4	2,061.3	2,092.0	2,105.1	2,121.1	2,140.2	2,162.8
	Balance	-	-168.9	-583.4	-526.8	-309.4	-634.0	-1,092.2	-296.4
Dahod	Available		-	219.2	520.0	839.9	786.0	633.5	1,034.8
	Required		2,288.8	1,789.8	2,079.2	2,145.2	2,215.7	2,291.1	2,371.8
	Balance		-	-1,570.7	-1,559.3	-1,305.3	-1,429.8	-1,657.6	-1,337.0
Gandhinagar	Available	166.7	128.0	184.4	389.6	491.7	420.2	368.6	420.0
	Required	-	1,084.9	1,518.6	1,717.2	1,766.8	1,820.8	1,879.2	1,942.3
	Balance	-	-956.9	-1,334.3	-1,327.6	-1,275.2	-1,400.5	-1,510.5	-1,522.3
Jamnagar	Available	601.9	1,586.0	605.7	2,080.6	2,475.1	2,434.3	2,471.1	2,715.2
	Required	-	1,522.5	1,733.9	1,797.3	1,798.4	1,802.4	1,809.4	1,819.3
	Balance	-	63.4	-1,128.2	283.3	676.7	631.9	661.7	895.9
Junagadh	Available	1,387.6	2,616.8	1,747.1	2,471.7	3,266.3	3,215.0	2,053.3	4,041.1
	Required	-	2,227.4	2,253.2	2,437.9	2,475.9	2,519.1	2,567.8	2,622.5
	Balance	-	389.3	-506.2	33.9	790.4	695.9	-514.5	1,418.6
Kachchh	Available	1,351.1	1,290.8	1,299.9	1,650.9	1,813.8	1,519.3	1,675.9	1,833.3
	Required	-	1,738.6	1,640.1	1,950.7	2,025.0	2,106.6	2,196.3	2,294.7
	Balance	-	-447.8	-340.2	-299.8	-211.2	-587.3	-520.4	-461.4
Kheda	Available	957.3	1,372.2	1,104.0	890.2	1,183.6	1,017.7	900.3	1,378.3
	Required	-	2,055.6	2,291.5	2,711.8	2,820.4	2,939.6	3,070.7	3,215.2
	Balance	-	-683.3	-1,187.6	-1,821.6	-1,636.7	-1,921.9	-2,170.4	-1,836.9
Mehsana	Available	1,230.9	1,325.8	742.2	737.6	867.4	784.8	819.8	961.5
	Required	-	2,289.7	2,305.0	2,707.3	2,805.5	2,912.4	3,029.1	3,156.8
	Balance	-	-964.0	-1,562.9	-1,969.7	-1,938.1	-2,127.7	-2,209.3	-2,195.3

Contd...



Districts	Available/ Required/ Balance	Dry Matter Availability, Requirement & Balance ('000 MT)							
		1992	1997	2003	2007	2008	2009	2010	2011
Narmada	Available		-	113.2	248.9	258.1	276.7	247.3	312.8
	Required		474.9	588.5	498.0	482.6	468.9	456.7	446.3
	Balance		-	-475.2	-249.1	-224.6	-192.1	-209.5	-133.5
Navsari	Available		-	102.8	383.6	304.2	295.7	331.1	445.3
	Required		759.4	931.1	814.8	800.8	789.8	781.7	776.5
	Balance		-	-828.3	-431.1	-496.6	-494.1	-450.6	-331.2
Panchmahals	Available	986.9	1,653.2	1,488.3	478.9	932.8	794.7	620.3	942.0
	Required	-	2,131.7	3,077.0	3,304.1	3,329.3	3,359.8	3,395.7	3,437.2
	Balance	-	-478.5	-1,588.8	-2,825.2	-2,396.5	-2,565.1	-2,775.3	-2,495.2
Patan	Available		-	308.5	554.4	665.3	629.0	574.6	731.1
	Required		1,371.5	1,136.6	1,636.0	1,763.5	1,904.3	2,059.8	2,231.4
	Balance		-	-828.1	-1,081.7	-1,098.2	-1,275.3	-1,485.2	-1,500.3
Porbandar	Available		-	129.1	567.8	572.1	697.6	581.4	493.5
	Required		506.6	565.7	586.6	592.0	598.7	606.7	615.9
	Balance		-	-436.6	-18.9	-19.9	98.9	-25.3	-122.5
Rajkot	Available	911.2	2,251.8	851.5	1,818.2	3,303.1	2,135.0	1,371.2	3,289.2
	Required	-	2,118.0	2,220.0	2,429.9	2,476.1	2,529.0	2,589.2	2,657.2
	Balance	-	133.9	-1,368.5	-611.6	827.0	-394.0	-1,218.0	632.0
Sabarkantha	Available	1,070.4	1,428.3	1,093.9	1,166.4	1,540.0	1,323.4	1,225.0	1,797.6
	Required	-	3,220.1	3,922.6	4,221.9	4,297.5	4,380.5	4,471.5	4,571.0
	Balance	-	-1,791.9	-2,828.7	-3,055.5	-2,757.5	-3,057.1	-3,246.4	-2,773.4
Surat	Available	1,223.8	1,277.5	1,108.2	1,218.1	778.1	596.9	604.1	628.4
	Required	-	-	2,613.6	2,679.0	2,705.5	2,743.2	2,793.4	2,858.0
	Balance	-	-	-1,505.3	-1,460.9	-1,927.4	-2,146.3	-2,189.3	-2,229.6
Surendranagar	Available	687.8	942.4	804.1	1,213.9	1,329.2	1,136.2	1,008.9	1,410.8
	Required	-	-	1,445.8	1,825.0	1,904.1	1,989.4	2,081.4	2,180.8
	Balance	-	-	-641.7	-611.1	-574.8	-853.2	-1,072.5	-769.9
The Dangs	Available	104.0	126.7	144.7	184.6	193.1	199.0	164.8	192.6
	Required	-	-	250.5	219.8	212.9	207.2	202.7	199.3
	Balance	-	-	-105.9	-35.2	-19.9	-8.3	-37.9	-6.7
Vadodara	Available	858.5	1063.3	957.4	982.5	1,212.8	1,213.4	1,018.5	1,799.1
	Required	-	-	2,506.7	2,717.2	2,763.6	2,815.3	2,873.1	2,937.9
	Balance	-	-	-1,549.3	-1,734.6	-1,550.8	-1,602.0	-1,854.6	-1,138.8
Valsad	Available		679.3	512.4	357.4	323.1	325.2	304.0	344.3
	Required		-	852.5	1,059.7	1,111.5	1,171.8	1,242.2	1,324.6
	Balance		-	-340.1	-702.3	-788.4	-846.6	-938.2	-980.3

SOURCE: Feedbase 2012, National Institute of Animal Nutrition and Physiology, Bangalore.



TABLE VI.3: District-wise Crude Protein (CP) Availability, Requirement and Balance

Districts	Available/ Required/ Balance	Crude Protein Availability, Requirement & Balance ('000 MT)							
		1992	1997	2003	2007	2008	2009	2010	2011
Ahmedabad	Available	124.9	124.3	89.2	183.1	214.0	187.5	221.3	393.9
	Required	-	130.1	147.3	160.9	164.6	168.9	173.7	179.2
	Balance	-	-5.7	-58.0	22.2	49.3	18.6	47.6	214.6
Amreli	Available	61.7	245.7	155.5	327.8	464.6	299.6	220.7	518.0
	Required	-	117.3	113.1	120.8	122.4	124.4	126.7	129.4
	Balance	-	128.3	42.5	207.0	342.2	175.2	94.1	388.6
Anand	Available		-	-	81.1	115.2	101.7	100.8	120.8
	Required		157.6	152.9	211.2	223.4	236.9	251.8	268.3
	Balance		-	-	-130.1	-108.2	-135.2	-151.0	-147.5
Banaskantha	Available	110.9	151.2	117.1	229.2	288.3	192.6	192.5	276.2
	Required	-	266.4	345.8	444.1	469.5	497.6	528.8	563.5
	Balance	-	-115.3	-228.7	-214.9	-181.2	-305.0	-336.3	-287.3
Bharuch	Available	93.7	97.2	115.4	119.4	93.8	92.3	92.5	106.4
	Required	-	75.4	77.2	75.5	76.0	76.8	77.9	79.3
	Balance	-	21.8	38.2	43.9	17.8	15.5	14.7	27.0
Bhavnagar	Available	90.7	226.7	214.0	473.2	556.2	407.1	281.3	542.7
	Required	-	168.9	185.4	192.6	194.7	197.0	199.7	202.7
	Balance	-	57.8	28.6	280.6	361.6	210.1	81.6	340.0
Dahod	Available		-	-	60.7	86.6	54.3	47.1	86.7
	Required		189.9	150.0	178.8	185.6	192.9	200.7	209.0
	Balance		-	-	-118.1	-99.1	-138.5	-153.6	-122.3
Gandhinagar	Available	25.0	19.7	15.1	70.5	97.1	80.2	76.3	83.4
	Required	-	96.9	139.9	161.8	167.2	173.0	179.3	186.1
	Balance	-	-77.2	-124.8	-91.3	-70.1	-92.8	-103.0	-102.7
Jamnagar	Available	-	199.0	-	471.6	522.4	452.9	492.0	548.5
	Required	-	131.2	152.0	156.4	156.9	157.8	158.8	160.1
	Balance	-	67.9	-	315.2	365.5	295.1	333.2	388.4
Junagadh	Available	141.1	346.8	213.0	422.9	571.0	530.3	334.9	669.8
	Required	-	193.0	197.7	216.0	220.2	225.0	230.2	236.0
	Balance	-	153.8	15.3	206.9	350.8	305.4	104.7	433.8
Kachchh	Available	100.4	96.3	97.8	179.0	208.0	177.2	215.2	243.1
	Required	-	159.8	152.6	183.2	190.7	198.9	207.8	217.6
	Balance	-	-63.5	-54.8	-4.2	17.3	-21.7	7.4	25.6
Kheda	Available	87.5	156.7	117.3	122.6	173.8	145.2	142.1	192.3
	Required	-	186.6	208.9	253.1	264.4	276.9	290.5	305.5
	Balance	-	-29.8	-91.6	-130.5	-90.7	-131.7	-148.4	-113.2
Mehsana	Available	177.4	205.7	104.7	121.0	146.6	126.2	158.7	174.0
	Required	-	209.3	213.0	254.1	264.3	275.4	287.5	300.8
	Balance	-	-3.6	-108.3	-133.1	-117.7	-149.2	-128.8	-126.8

Contd...



Districts	Available/ Required/ Balance	Crude Protein Availability, Requirement & Balance ('000 MT)							
		1992	1997	2003	2007	2008	2009	2010	2011
Narmada	Available		-	-	44.2	40.6	43.2	44.2	55.1
	Required		40.6	50.2	42.7	41.5	40.3	39.2	38.3
	Balance		-	-	1.4	-0.8	2.9	4.9	16.8
Navsari	Available		-	-	57.3	40.5	39.3	45.1	66.5
	Required		71.6	87.7	79.6	78.5	77.7	77.1	76.7
	Balance		-	-	-22.4	-38.1	-38.4	-32.0	-10.2
Panchmahals	Available	74.6	142.8	89.9	44.7	82.4	61.6	48.9	75.4
	Required	-	179.2	264.2	287.1	290.0	293.4	297.2	301.4
	Balance	-	-36.4	-174.4	-242.4	-207.7	-231.8	-248.3	-226.0
Patan	Available		-	-	82.1	100.2	97.7	93.7	121.0
	Required		121.9	102.9	148.7	160.6	173.6	188.1	203.9
	Balance		-	-	-66.7	-60.4	-75.9	-94.3	-83.0
Porbandar	Available		-	-	87.6	89.9	100.4	73.7	72.1
	Required		44.2	49.0	51.8	52.4	53.2	54.0	55.0
	Balance		-	-	35.9	37.5	47.2	19.7	17.1
Rajkot	Available	101.8	381.7	70.6	587.9	806.3	542.6	439.9	882.5
	Required	-	184.8	194.7	215.3	220.3	225.9	232.1	238.9
	Balance	-	196.8	-124.2	372.6	586.0	316.7	207.8	643.6
Sabarkantha	Available	92.1	139.4	77.8	183.3	246.0	217.8	202.0	297.9
	Required	-	286.3	354.0	387.6	396.1	405.4	415.6	426.5
	Balance	-	-146.8	-276.2	-204.3	-150.1	-187.6	-213.5	-128.6
Surat	Available	170.0	175.2	166.6	191.0	96.8	73.2	70.5	80.3
	Required	-	-	239.4	248.3	251.7	256.1	261.7	268.7
	Balance	-	-	-72.9	-57.3	-154.9	-182.9	-191.2	-188.4
Surendranagar	Available	88.9	187.6	112.3	366.4	410.9	298.9	327.2	541.0
	Required	-	-	130.5	166.7	174.8	183.6	193.0	203.2
	Balance	-	-	-18.2	199.7	236.0	115.3	134.2	337.8
The Dangs	Available	5.2	9.0	9.0	14.4	16.1	16.2	12.8	18.1
	Required	-	-	20.8	19.0	18.5	18.0	17.7	17.4
	Balance	-	-	-11.8	-4.7	-2.4	-1.8	-4.8	0.7
Vadodara	Available	99.8	156.9	128.4	187.9	223.8	241.1	219.8	324.5
	Required	-	-	220.4	240.8	245.4	250.6	256.2	262.3
	Balance	-	-	-92.0	-52.9	-21.7	-9.5	-36.3	62.2
Valsad	Available		96.3	80.9	52.5	45.6	45.7	35.7	43.4
	Required		-	77.4	97.1	102.2	108.0	114.7	122.6
	Balance		-	3.5	-44.6	-56.6	-62.3	-79.0	-79.3

SOURCE: Feedbase 2012, National Institute of Animal Nutrition and Physiology, Bangalore.



TABLE VI.4: District-wise Total Digestive Nutrient (TDN) Availability, Requirement and Balance

Districts	Available/ Required/ Balance	Total Digestive Nutrient Availability, Requirement & Balance ('000 MT)							
		1992	1997	2003	2007	2008	2009	2010	2011
Ahmedabad	Available	612.0	507.5	408.7	828.3	969.2	780.7	843.5	1,547.9
	Required	-	899.7	1,016.4	1,082.5	1,103.2	1,127.5	1,156.1	1,189.4
	Balance	-	-392.2	-607.7	-254.2	-134.0	-346.8	-312.5	358.5
Amreli	Available	286.5	783.0	506.2	441.0	921.5	471.8	211.3	896.5
	Required	-	891.5	849.0	898.1	903.7	911.7	922.4	936.1
	Balance	-	-108.5	-342.8	-457.1	17.8	-439.9	-711.1	-39.6
Anand	Available		-	-	527.0	745.9	661.0	668.4	793.5
	Required		1009.8	966.8	1261.4	1,327.6	1,401.2	1,482.8	1,573.3
	Balance		-	-	-734.4	-581.7	-740.1	-814.3	-779.8
Banaskantha	Available	562.7	702.3	637.2	953.8	1,274.0	813.2	834.9	1,367.1
	Required	-	1,863.3	2,359.8	2,984.4	3,141.6	3,315.9	3,509.6	3,725.4
	Balance	-	-1,161.0	-1,722.7	-2,030.7	-1,867.6	-2,502.7	-2,674.7	-2,358.3
Bharuch	Available	497.2	401.1	419.1	368.6	234.9	248.2	222.1	273.8
	Required	-	545.7	552.9	530.8	533.0	537.8	545.6	556.6
	Balance	-	-144.6	-133.8	-162.2	-298.1	-289.6	-323.5	-282.7
Bhavnagar	Available	325.8	697.9	603.8	598.3	760.4	578.7	309.9	718.9
	Required	-	1,193.4	1,311.9	1,344.6	1,355.0	1,367.3	1,381.9	1,398.7
	Balance	-	-495.5	-708.1	-746.3	-594.6	-788.7	-1,072.0	-679.7
Dahod	Available		-	-	382.0	552.2	375.5	319.4	527.3
	Required		1,640.4	1,272.7	1,468.4	1,513.9	1,562.5	1,614.7	1,670.6
	Balance		-	-	-1,086.4	-961.7	-1,187.0	-1,295.2	-1,143.4
Gandhinagar	Available	152.6	96.4	89.5	278.5	403.6	287.2	259.3	336.6
	Required	-	664.1	916.9	1,035.4	1,065.3	1,097.9	1,133.3	1,171.7
	Balance	-	-567.8	-827.4	-756.9	-661.7	-810.8	-874.0	-835.1
Jamnagar	Available	196.2	669.3	178.9	932.1	1,161.3	1,094.4	1,094.1	1,326.6
	Required	-	1,004.2	1,134.9	1,182.5	1,180.4	1,180.4	1,182.5	1,186.7
	Balance	-	-334.9	-956.0	-250.4	-19.0	-85.9	-88.3	139.8
Junagadh	Available	633.8	1,279.6	770.3	1,719.8	2,269.8	2,003.5	1,290.4	2,804.9
	Required	-	1,464.5	1,482.2	1,606.2	1,629.9	1,657.1	1,688.2	1,723.6
	Balance	-	-184.9	-711.9	113.7	639.9	346.4	-397.8	1,081.4
Kachchh	Available	559.8	522.8	548.4	740.7	830.5	649.0	743.1	843.5
	Required	-	1,124.0	1,050.4	1,240.0	1,286.1	1,337.3	1,394.0	1,457.0
	Balance	-	-601.2	-502.0	-499.2	-455.5	-688.2	-651.0	-613.5
Kheda	Available	525.8	978.2	724.4	742.7	1,048.5	803.5	776.9	1,146.3
	Required	-	1,254.0	1,396.7	1,653.5	1,721.0	1,795.5	1,877.9	1,969.1
	Balance	-	-275.9	-672.3	-910.8	-672.5	-992.0	-1,101.0	-822.8
Mehsana	Available	748.4	828.0	423.7	497.1	625.6	496.9	590.1	673.2
	Required	-	1,355.5	1,360.5	16,03.5	1,662.7	1,727.4	1,798.2	1,876.0
	Balance	-	-527.5	-936.9	-1,106.4	-1,037.1	-1,230.5	-1,208.1	-1,202.8

Contd...



Districts	Available/ Required/ Balance	Total Digestive Nutrient Availability, Requirement & Balance ('000 MT)							
		1992	1997	2003	2007	2008	2009	2010	2011
Narmada	Available		-	32.0	123.1	112.8	120.9	100.9	143.5
	Required		338.8	414.0	350.6	339.9	330.5	322.3	315.5
	Balance		-	-382.0	-227.4	-227.1	-209.6	-221.4	-171.9
Navsari	Available		-	-	426.3	277.8	271.6	310.9	452.5
	Required		480.6	586.7	510.3	501.7	495.2	490.7	488.1
	Balance		-	-	-84.1	-223.9	-223.6	-179.8	-35.7
Panchmahals	Available	469.3	900.4	639.0	268.6	506.7	391.4	293.1	478.4
	Required	-	1,426.0	2,069.0	2,175.8	2,183.7	2,195.3	2,210.6	2,229.9
	Balance	-	-525.6	-1,430.1	-1,907.2	-1,677.0	-1,803.8	-1,917.5	-1,751.5
Patan	Available		-	81.3	280.3	364.9	313.7	323.6	464.2
	Required		840.3	695.8	997.6	1,074.1	1,158.7	1,252.4	1,356.2
	Balance		-	-614.6	-717.4	-709.2	-845.0	-928.9	-891.9
Porbandar	Available		-	-	273.6	278.9	308.7	245.4	336.4
	Required		321.0	362.8	373.7	376.9	381.1	386.3	392.3
	Balance		-	-	-100.1	-98.0	-72.4	-140.9	-55.9
Rajkot	Available	339.8	962.9	304.8	902.7	1,637.5	1,110.9	547.5	2,010.9
	Required	-	1,373.2	1,447.6	1,579.8	1,606.9	1,638.8	1,676.0	1,719.0
	Balance	-	-410.3	-1,142.8	-677.0	30.7	-527.9	-1,128.5	291.8
Sabarkantha	Available	535.4	782.9	473.3	769.0	990.8	729.2	721.6	1,184.2
	Required	-	2,041.2	2,483.9	2,656.6	2,700.3	2,748.9	2,802.8	2,862.4
	Balance	-	-1,258.3	-2,010.6	-1,887.6	-1,709.5	-2,019.8	-2,081.2	-1,678.2
Surat	Available	1,220.5	1,231.6	1,224.8	1,366.7	597.3	480.7	480.8	523.1
	Required	-	-	1,646.1	1,688.8	1,705.0	1,728.5	1,760.2	1,801.2
	Balance	-	-	-421.3	-322.1	-1,107.7	-1,247.8	-1,279.4	-1,278.1
Surendranagar	Available	237.4	362.8	282.4	439.2	541.8	442.6	336.7	618.8
	Required	-	-	940.6	1,187.9	1,238.0	1,292.1	1,350.8	1,414.4
	Balance	-	-	-658.2	-748.7	-696.1	-849.5	-1,014.1	-795.6
The Dangs	Available	42.8	61.1	67.4	98.4	104.4	107.4	85.0	111.9
	Required	-	-	192.3	161.1	155.2	150.2	145.9	142.6
	Balance	-	-	-124.9	-62.8	-50.9	-42.8	-61.0	-30.6
Vadodara	Available	365.6	488.2	414.4	474.9	616.3	559.8	446.7	886.4
	Required	-	-	1,640.6	1,779.8	1,810.1	1,844.3	1,882.9	1,926.7
	Balance	-	-	-1,226.2	-1,304.9	-1,193.8	-1,284.5	-1,436.2	-1,040.3
Valsad	Available		669.5	567.5	336.3	274.4	274.9	247.8	300.3
	Required		-	589.3	729.2	763.3	802.8	849.0	902.9
	Balance		-	-21.8	-392.9	-488.9	-527.9	-601.1	-602.6

SOURCE: Feedbase 2012, National Institute of Animal Nutrition and Physiology, Bangalore.

**TABLE VI.5: Feed Nutrients Availability, Requirement and Surplus/Deficit**

('000 MT)

Year	Dry Matter			Crude Protein			Total Digestible Nutrients		
	Availability	Requirement	Deficit/ Surplus	Availability	Requirement	Deficit/ Surplus	Availability	Requirement	Deficit/ Surplus
1992	15,900.0	-	-	1,681.7	-	-	8,311.8	-	-
1997	24,164.2	34,012.5	-9,848.3	3,158.1	3,022.9	135.2	12,925.4	21,781.3	-8,855.8
2003	18,939.6	44,896.6	-25,957.0	2,032.6	4,026.8	-1,994.3	9,561.9	28,739.6	-19,77.8
2007	24,516.7	50,242.3	-25,725.6	4,761.3	4,593.3	168.0	14,769.0	32,082.4	-17,313.4
2008	30,709.6	51,533.1	-20,823.5	5,736.4	4,732.0	1,004.5	18,100.9	32,878.2	-14,777.3
2009	26,297.3	52,991.0	-26,693.7	4,624.7	4,886.9	-262.2	14,375.5	33,785.9	-19,410.5
2010	22,586.3	54,632.7	-32,046.4	4,189.0	5,059.7	-870.7	12,303.4	34,816.9	-22,513.6
2011	33,970.9	56,478.8	-22,507.9	6,533.3	5,252.3	1,281.0	20,766.8	35,985.0	-15,218.2

SOURCE: Feedbase 2012, National Institute of Animal Nutrition and Physiology, Bangalore.





TABLE VI.6: District-wise Feed Consumption – Cattle

(kg/animal)

Cattle	Year	Green Fodder				Dry Fodder				Concentrate			
		Summer	Monsoon	Winter	All	Summer	Monsoon	Winter	All	Summer	Monsoon	Winter	All
In-milk	1997-98	8.9	13.0	10.2	10.7	10.7	7.5	10.9	9.7	2.0	2.2	2.2	2.1
	2003-04	9.2	11.1	10.5	10.3	10.3	7.2	10.3	9.3	1.9	2.1	2.0	2.0
	2006-07	9.7	12.5	10.3	10.8	11.0	6.8	9.3	9.0	2.1	2.2	2.4	2.2
	2007-08	6.7	12.2	10.8	9.9	10.7	7.5	9.5	9.2	2.2	2.3	2.3	2.3
	2008-09	11.1	11.1	11.2	11.1	9.8	9.1	9.1	9.3	2.3	2.6	2.5	2.5
	2009-10	10.3	11.3	11.0	10.9	11.0	15.9	9.7	12.2	2.6	2.5	2.5	2.5
	2010-11	10.3	12.4	11.8	11.5	11.0	7.4	9.7	9.3	2.3	2.6	2.8	2.6
	2011-12	9.8	11.8	10.1	10.6	10.2	8.0	9.3	9.1	2.6	2.5	2.8	2.7
Dry & Not Calved Even Once	1997-98	6.5	11.2	6.9	8.2	8.6	5.8	8.5	7.6	2.9	1.5	1.5	2.0
	2003-04	7.4	7.8	6.9	7.4	7.4	5.3	7.7	6.8	1.5	1.3	1.5	1.4
	2006-07	6.1	8.4	7.9	7.5	8.3	5.3	8.0	7.2	1.8	1.2	4.9	2.6
	2007-08	7.7	9.0	7.0	7.9	8.7	6.0	7.7	7.5	1.3	1.3	3.0	1.9
	2008-09	8.8	9.0	8.1	8.6	8.6	6.8	7.8	7.8	2.0	1.3	1.4	1.5
	2009-10	8.1	8.7	8.0	8.3	9.0	6.7	8.4	8.0	2.4	1.9	3.6	2.6
	2010-11	7.8	9.1	8.3	8.4	9.1	6.3	8.4	7.9	1.7	2.1	1.9	1.9
	2011-12	7.2	9.5	7.3	8.0	8.7	6.6	8.6	8.0	2.0	2.3	3.1	2.4
Young	1997-98	2.9	4.4	2.9	3.4	4.3	2.5	3.5	3.4	0.0	0.5	0.5	0.3
	2003-04	2.9	3.4	3.1	3.1	3.0	2.5	2.6	2.7	0.0	0.0	1.0	0.3
	2006-07	2.9	3.8	3.2	3.3	3.4	2.5	3.3	3.1		1.7	0.6	1.2
	2007-08	2.9	3.4	3.1	3.1	3.3	2.4	3.0	2.9	0.5	0.7	0.0	0.4
	2008-09	3.1	3.2	3.0	3.1	3.3	2.6	3.0	2.9	0.0	2.4	3.0	1.8
	2009-10	3.6	3.5	3.1	3.4	3.3	2.7	3.2	3.0	4.5	1.8	1.3	2.5
	2010-11	3.1	3.5	3.2	3.3	3.6	2.6	3.4	3.2	0.0	0.6	2.0	0.9
	2011-12	2.8	3.7	3.2	3.3	3.4	2.6	3.2	3.1	0.5	0.5	1.0	0.7
Adult Male	1997-98	7.8	13.4	8.9	10.0	11.2	4.4	10.5	8.7	1.7	2.0	2.0	1.9
	2003-04	7.7	12.0	10.5	10.1	11.2	8.2	10.7	10.0	4.5	2.0	1.4	2.6
	2006-07	8.5	11.8	9.4	9.9	11.2	7.0	11.0	9.7	1.8	3.1	1.5	2.1
	2007-08	9.8	10.3	9.1	9.7	11.4	7.7	13.1	10.7	1.6	1.9	1.5	1.7
	2008-09	11.7	12.7	9.8	11.4	11.3	8.4	9.4	9.7	1.5	2.3	2.1	1.9
	2009-10	9.2	12.2	11.1	10.8	11.3	8.2	10.8	10.1	1.0	2.4	1.9	1.8
	2010-11	7.6	13.0	9.8	10.1	11.8	8.0	11.4	10.4	1.4	2.2	1.9	1.8
	2011-12	8.3	12.0	7.8	9.4	10.9	8.3	10.6	9.9	2.8	2.4	1.8	2.3

SOURCE: Survey Reports on estimates of major livestock products, Directorate of Animal Husbandry, Gujarat State, Gandhinagar.



TABLE VI.7: District-wise Feed Consumption – Buffalo

(kg/animal)

Buffalo	Year	Green Fodder				Dry Fodder				Concentrate			
		Summer	Monsoon	Winter	All	Summer	Monsoon	Winter	All	Summer	Monsoon	Winter	All
In-milk	1997-98	9.3	14.0	10.8	11.4	11.0	7.3	11.4	9.9	2.4	3.1	3.5	3.0
	2003-04	10.4	13.7	11.1	11.7	10.7	7.4	10.3	9.5	2.1	2.4	2.4	2.3
	2006-07	10.6	13.7	10.3	11.5	11.5	7.0	10.1	9.5	2.5	2.4	2.5	2.5
	2007-08	12.2	13.7	11.6	12.5	11.8	7.6	9.6	9.7	2.5	2.4	2.5	2.5
	2008-09	11.8	12.0	11.4	11.7	11.4	8.4	9.9	9.9	2.6	2.6	3.2	2.8
	2009-10	10.9	12.8	11.8	11.8	11.1	8.5	9.5	9.7	2.7	2.8	2.7	2.7
	2010-11	10.4	12.9	10.8	11.3	10.6	7.4	9.6	9.2	2.5	2.6	3.0	2.7
	2011-12	10.5	13.0	10.7	11.4	10.6	8.6	11.1	10.1	2.6	2.7	2.8	2.7
Dry & Not Calved Even Once	1997-98	6.2	10.9	7.0	8.0	8.8	5.4	9.2	7.8	1.9	1.5	2.6	2.0
	2003-04	8.1	9.7	8.2	8.7	9.1	5.6	11.0	8.6	2.1	1.7	1.7	1.8
	2006-07	6.7	9.6	7.7	8.0	8.5	4.8	7.2	6.8	1.6	2.6	1.3	1.8
	2007-08	8.9	10.0	8.3	9.1	9.0	6.1	8.1	7.7	1.4	2.3	1.2	1.6
	2008-09	9.5	10.7	8.8	9.7	8.7	9.7	8.3	8.9	3.8	4.0	2.5	3.5
	2009-10	8.7	9.9	9.3	9.3	8.9	6.6	7.9	7.8	2.3	4.1	2.5	3.0
	2010-11	7.4	9.6	8.2	8.4	8.9	5.9	7.9	7.6	2.5	2.9	2.9	2.8
	2011-12	7.4	10.1	8.0	8.5	8.9	6.7	9.0	8.2	2.2	3.9	2.1	2.7
Young	1997-98	2.8	4.1	3.1	3.3	3.7	2.3	3.2	3.1	0.0	1.5	1.5	1.0
	2003-04	3.1	4.1	2.8	3.3	3.1	2.3	3.1	2.8	0.0	0.0	0.0	0.0
	2006-07	3.1	3.9	3.0	3.3	3.3	2.6	3.1	3.0		1.3	0.7	1.0
	2007-08	3.1	3.5	3.2	3.3	3.4	2.6	2.9	3.0	0.6	0.6	1.0	0.7
	2008-09	3.2	3.4	2.9	3.2	3.4	2.6	2.9	3.0	4.1	1.1	2.2	2.5
	2009-10	3.2	3.3	3.2	3.2	3.5	2.2	3.0	2.9	0.8	0.6	0.5	0.6
	2010-11	3.0	3.5	3.0	3.2	3.5	2.4	3.1	3.0	2.4	1.2	0.0	1.2
	2011-12	3.1	3.6	3.1	3.3	3.4	2.5	3.2	3.0	0.5	0.6	0.0	0.4
Adult Male	1997-98	8.0	10.2	8.4	8.9	12.4	6.7	11.8	10.3	2.0	4.0	2.3	2.8
	2003-04	0.0	7.2	13.3	6.8	13.3	3.2	8.0	8.2	0.0	4.0	3.5	2.5
	2006-07	8.0	9.4	5.7	7.7	11.4	8.5	8.3	9.4		3.0	1.3	2.2
	2007-08	6.1	4.8	8.1	6.3	9.8	6.1	7.6	7.8	1.0	2.0	2.0	1.7
	2008-09	9.4	10.1	7.1	8.8	6.8	6.1	7.6	6.9	4.5	0.0	2.0	2.2
	2009-10	6.5	11.9	6.7	8.4	9.4	6.1	5.7	7.1	4.0	1.3	3.0	2.8
	2010-11	8.5	17.1	17.1	14.2	10.2	9.5	10.6	10.1	0.0	2.0	0.4	0.8
	2011-12	7.9	8.4	8.3	8.2	10.3	7.2	7.9	8.5	2.0	2.7	3.0	2.6

SOURCE: Survey Reports on Estimates of Major Livestock Products, Directorate of Animal Husbandry, Gujarat State, Gandhinagar.

PART VII: AGRICULTURE

Gujarat State covers an area of about 20 million hectares or about six per cent of the geographical area of India. Of this, 53 per cent is net sown, 10 per cent is under forests, 4.5 per cent is under permanent pasture and grazing land, 13 per cent is barren and uncultivable, and 6 per cent is under non-agricultural use.

The State comprises eight agro-climatic zones, of which six are semi-arid. Only south Gujarat receives heavy rainfall and has a humid climate, whereas the rest of the State is a semi-arid zone.

The irrigated area served by canals increased from 0.64 million hectares in 1997-98 to 0.77 million hectares in 2010-11. Wells and tubewells continued to be the major source of irrigation, accounting for 78 per cent of the irrigated area in 2010-11. Areas irrigated through other sources increased in terms of both area as well as share.

The groundwater status in Gujarat improved and the number of talukas under the semi-critical, critical and over-exploited categories declined. However, 33 out of 45 talukas in north Gujarat continue to be classified under the semi-critical, critical, over-exploited and saline categories.

Cereals, Oilseeds, Cotton, Pulses and Sugarcane are the major crops and accounted for 34 per cent, 27 per cent, 23 per cent, 8 per cent and 2 per cent respectively, of the total gross cropped area of about 11.6 million hectares in 2010-11. In the last decade, the total area under food grains, oilseeds and cash crops like cotton and tobacco has gone up significantly.





TABLE VII.1: Gujarat Agro-climatic Zones

1) Southern Heavy Rainfall Area & Hilly Area <i>Semi-arid to dry sub-humid climate</i>	5) North-West Arid <i>Arid to semi-arid climate</i>
2) South Gujarat <i>Semi-arid to dry sub-humid climate</i>	6) North Saurashtra <i>Dry sub-humid climate</i>
3) Middle Gujarat <i>Semi-arid climate</i>	7) South Saurashtra <i>Dry sub-humid climate</i>
4) North Gujarat <i>Arid to semi-arid climate</i>	8) Bhal & Coastal Area

SOURCE: Agriculture & Co-operation Department, Govt of Gujarat.

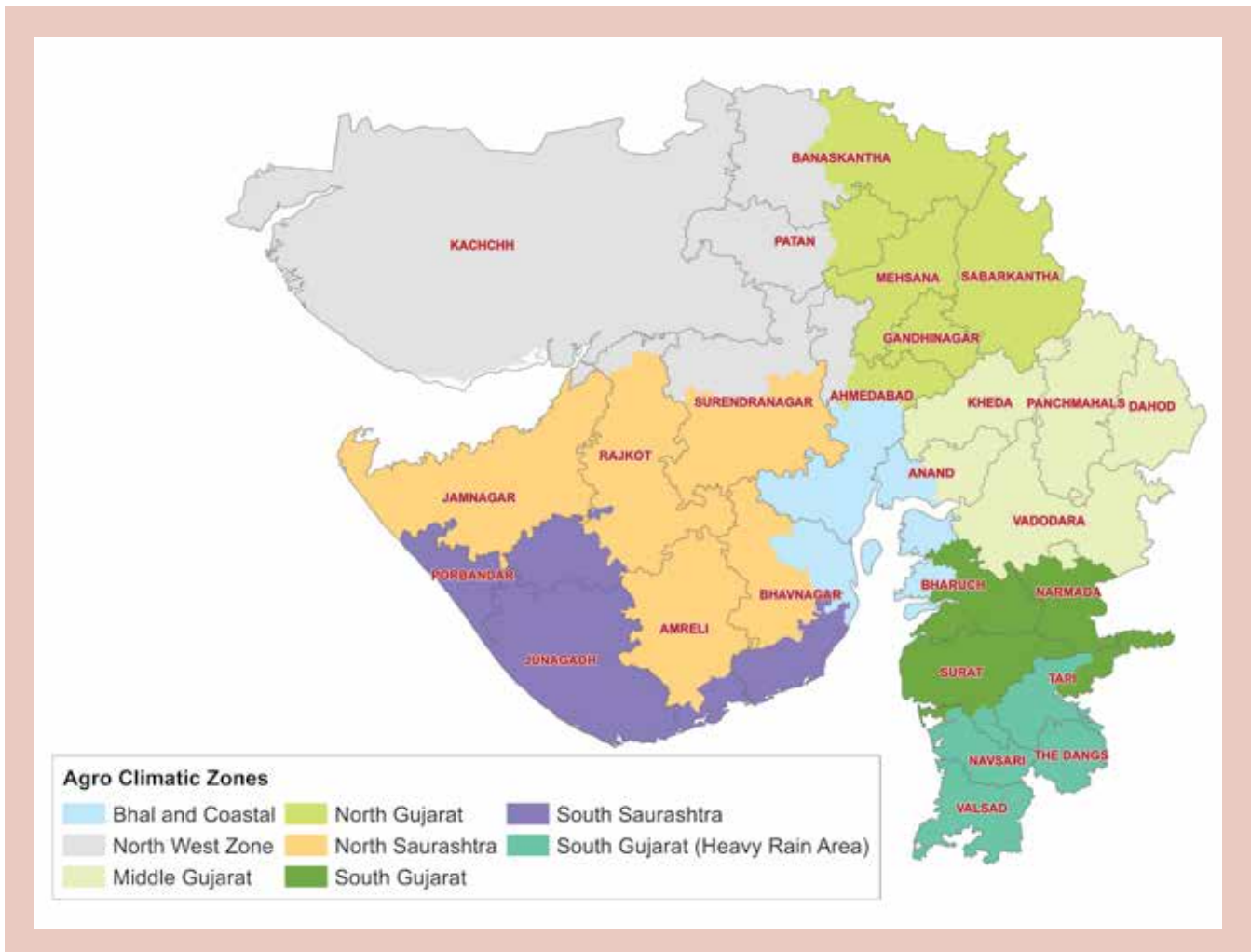




TABLE VII.2: Details of Agro-climatic Zones

Particulars	South Gujarat (Heavy Rain Area)	South Gujarat	Middle Gujarat	North Gujarat
Districts/ Talukas	1) Whole of The Dangs and Valsad districts 2) Part Navsari districts (excluding Navsari and Gandevi talukas) 3) Part of Tapi district (Valod, Vyara, Uchchhal and Songadh) 4) Part of Surat district (Mahuva)	1) Part of Navsari district (Navsari, Gandevi taluka) 2) Part of Tapi district (Nizar taluka) 3) Part of Surat district (Kamrej, Palsana, Bardoli and Mandvi talukas) 4) Part of Bharuch district (Ankleshwar, Valia, Jhagadia, 5) Part of Narmada district (Dediapada and Sagbara talukas)	1) Whole of Panchmahals district 2) Whole of Vadodara district 3) Part of Bharuch district (Bharuch, Amod and Jambusar talukas) 4) Part of Anand district (Borsad taluka)	1) Whole of Sabarkantha district 2) Part of Ahmedabad district (includes Daskroi and Sanand talukas) 3) Part of Gandhinagar district (Dehgam) 4) Whole of Anand district (except Borsad and part of Khambhat) 5) Whole of Kheda district (except Matar taluka) 6) Whole of Mehsana district 7) Whole of Patan district (except Chanasma, Sami and Harij talukas) 8) Part of Banaskantha district (Deesa, Dhanera, Palanpur, Danta and Vadgam talukas)
Rainfall (mm)	1500 and above	1000 to 1500	800 to 1000	625 to 875
Climate	Semi-arid to dry sub-humid	Semi-arid to dry sub-humid	Semi-arid	Arid to semi-arid
Type of Soil	Deep black with patches of coastal alluvial lateritic and medium black	Deep black clayey	Deep black, medium black to loamy sand (Goradu)	Sandy loam to sandy
Soil Characteristics and Land Use Classification	Most of the area cultivated, some area non-cultivated under shallow and partly forest	Most of the area cultivated, some area non-cultivated under fallow and pasture forest	Most of the area cultivated, some area non-cultivated under fallow and pasture forest	Most of the area cultivated
Crops	Cotton, sorghum, paddy and vegetables	Cotton, sorghum, wheat, sugarcane and horticulture crops	Cotton, pearl millet tobacco, pulses, wheat, paddy, maize, sorghum and sugarcane	Tobacco, wheat, sorghum, millet, vegetables, oilseeds, spices and condiments
General Fertility	N - poor, P - medium, K - medium	N - poor, P - medium, K - medium	N - low, P - medium, K - high	N - poor, P - medium, K - medium

N: Nitrogen, P: Phosphorus, K: Potash

Contd..

SOURCE: Agriculture & Co-operation Department, Govt of Gujarat & www.dacnet.nic.in



Particulars	North-West Zone	North Saurashtra	South Saurashtra	Bhal & Coastal Area
Districts/Talukas	1) Whole of Kuchchh district 2) Part of Rajkot district (Maliya taluka) 3) Part of Surendranagar district (Halvad, Dhrangadhra and Dasada talukas) 4) Part of Patan district (Sami, Harij, Chanasma, Santalpur and Radhanpur talukas) 5) Part of Banaskantha district (Kankrej, Deodar, Vav and Tharad talukas) 6) Part of Ahmedabad district (Viramgam and Daskroi talukas)	1) Whole of Jamnagar 2) Part of Rajkot district (Paddhari, Lodhika, Jasdan, Rajkot, Wankaner, Morvi, Jamkanandorna and Kotda Sangani talukas) 3) Part of Surendranagar (Wadhwan, Muli, Chotila and Sayla talukas) 4) Part of Bhavnagar district (Gadhada, Umralla and Botad talukas)	1) Whole of Junagadh 2) Part of Bhavnagar (Sihor, Ghogha, Gariadhar, Palitana, Talaja and Mahua talukas) 3) Part of Amreli district (Dhari, Savarkundla, Rajula, Jafrabad, Khambha, Amreli, Babra, Lilia, Lathi and Kunkavav Vadia talukas) 4) Part of Rajkot district (Jetpur, Dhoraji Upleta and Gondal talukas) 5) Part of Junagadh district (Kodinar taluka)	1) Area around the Gulf of Khambhat, Bhal and coastal region in Bharuch, Anand and Surat districts 2) Part of Surat district (Olpad taluka) 3) Part of Bharuch district (Hansot and Vagra talukas) 4) Part of Ahmedabad district (Dholka and Dhandhuka talukas) 5) Part of Bhavnagar district (Vallabhipur and Bhavnagar talukas) 6) Part of Surendranagar district (Limbdi taluka)
Rainfall (mm)	250 to 500	400 to 700	645 to 700	625 to 1000
Climate	Arid to semi-arid	Dry sub-humid	Dry sub-humid	-
Type of Soil	Sandy and saline	Shallow medium black	Shallow medium black and calcareous	Medium black poorly drained and saline
Soil Characteristics and Land Use Classification	Cultivated and grassland	Cultivated and grassland	Cultivated forest and grassland	Dry land cultivation
Crops	Groundnut, cotton, pearl millet, pulse, wheat and sorghum	Groundnut, cotton, pulses, wheat, sorghum, pearl millet and sugarcane	Groundnut, cotton, wheat, bajra, sorghum and sugarcane	Cotton, sorghum, groundnut, pearl millet and wheat
General Fertility	N - low, P - low	N - medium to high, P - low, K - low to medium	N - medium to high, P - low, K - high	N - poor, P - medium, K - medium

N: Nitrogen, P: Phosphorus, K: Potash

SOURCE: Agriculture & Co-operation Department, Govt of Gujarat & www.dacnet.nic.in



TABLE VII.3: Land Use Pattern

(’000 ha)

Districts	Reporting Area		Forest Area		Fallow Land		Permanent Pasture & Grazing Land		Net Sown Area	
	2001-02	2007-08	2001-02	2007-08	2001-02	2007-08	2001-02	2007-08	2001-02	2007-08
GUJARAT	18,868	18,866	1,865	1,834	744	529	850	851	9,678	9,965
Ahmedabad	775	775	11	11	72	22	28	28	506	564
Amreli	739	739	37	36	26	9	54	54	541	560
Anand	295	295	-	-	41	4	14	14	155	197
Banaskantha	1,045	1,045	105	111	33	24	65	65	736	747
Bharuch	525	525	25	25	25	41	16	16	331	318
Bhavnagar	858	858	28	27	39	47	61	61	547	541
Dahod	371	371	91	88	26	6	11	11	197	218
Gandhinagar	216	216	2	2	12	6	12	12	160	169
Jamnagar	1,020	1,020	48	45	46	28	76	76	600	616
Junagadh	880	880	176	176	28	8	89	89	524	544
Kachchh	4,565	4,565	288	307	79	124	70	70	669	641
Kheda	394	394	10	10	13	9	15	15	309	313
Mehsana	439	439	7	7	17	8	27	27	346	358
Narmada	280	280	117	115	5	4	9	9	109	110
Navsari	220	220	31	25	1	2	5	5	147	137
Panchmahals	514	514	126	117	35	27	15	15	271	281
Patan	567	567	47	47	31	25	28	28	387	391
Porbandar	230	230	24	24	29	7	26	26	112	137
Rajkot	1,107	1,107	36	37	55	27	89	89	738	768
Sabarkantha	730	730	127	126	38	21	34	34	438	458
Surat	776	431	142	38	8	11	24	17	432	286
Surendranagar	1,046	1,046	50	53	66	48	46	46	686	709
Tapi	-	344	-	74	-	1	-	9	-	162
The Dangs	229	229	160	160	-	-	-	-	56	56
Vadodara	753	753	80	79	20	15	33	33	520	526
Valsad	294	294	98	93	0.4	7	2	2	161	158

(-) Not reported/not available or reported zero.

SOURCE: Directorate of Economics and Statistics, Ministry of Agriculture, Govt of India.





TABLE VII.4: District-wise Area under Crops and Production – Cereals and Pulses

Districts	Cereals						Pulses					
	Area ('000 ha)			Production ('000 MT)			Area ('000 ha)			Production ('000 MT)		
	*2004-10	2010-11	2011-12	*2004-10	2010-11	2011-12	*2004-10	2010-11	2011-12	*2004-10	2010-11	2011-12
GUJARAT	3,265	4,014	3,778	5,768	9,349	8,477	821	890	957	576	722	780
Ahmedabad	238	360	348	458	882	876	27	19	46	17	11	31
Amreli	51	70	41	127	233	129	13	12	10	10	9	8
Anand	190	225	242	389	511	559	5	8	7	3	5	5
Banaskantha	329	423	390	446	812	766	57	40	51	30	29	31
Bharuch	65	51	59	75	86	100	56	80	66	36	72	55
Bhavnagar	86	87	63	195	227	147	6	12	10	4	9	7
Dahod	203	196	225	227	311	322	75	75	79	62	64	78
Gandhinagar	70	71	78	164	188	201	7	7	12	5	4	6
Jamnagar	57	73	44	142	238	148	27	38	39	30	43	42
Junagadh	155	264	186	537	1004	648	16	27	30	15	28	39
Kachchh	97	99	81	134	167	143	85	96	135	38	46	53
Kheda	254	318	301	506	737	688	9	8	6	8	6	5
Mehsana	128	161	183	255	381	445	27	27	21	14	16	11
Narmada	31	36	47	36	57	66	20	21	32	19	18	28
Navsari	51	91	83	123	241	219	9	18	12	7	16	8
Panchmahals	221	222	273	205	291	404	43	49	39	48	53	44
Patan	112	120	104	117	227	213	43	41	41	21	24	24
Porbandar	17	49	36	35	134	83	12	16	29	15	18	29
Rajkot	97	186	120	278	702	461	18	24	21	14	21	23
Sabarkantha	232	277	265	415	627	574	47	49	37	31	31	28
Surat	121	108	101	223	226	236	36	27	32	34	24	22
Surendranagar	94	103	97	157	255	260	19	32	30	13	31	37
Tapi	64	63	75	99	122	152	25	30	31	17	20	22
The Dangs	38	38	42	48	47	64	9	13	30	8	9	27
Vadodara	151	249	217	211	490	416	93	102	97	87	102	106
Valsad	65	78	76	117	154	158	15	18	17	11	13	12

* Average from 2004-05 to 2009-10.

SOURCE: Agriculture and Co-operation Department, Govt of Gujarat.



TABLE VII.5: District-wise Area under Crops and Production – Food Grains and Oilseeds

Districts	Food Grains						Oilseeds					
	Area (000 ha)			Production (‘000 MT)			Area (‘000 ha)			Production (‘000 MT)		
	*2004-10	2010-11	2011-12	*2004-10	2010-11	2011-12	*2004-10	2010-11	2011-12	*2004-10	2010-11	2011-12
GUJARAT	4,085	4,905	4,735	6,344	10,071	9,257	2,896	3,110	3,130	3,594	5,142	5,035
Ahmedabad	265	378	395	475	894	907	25	85	43	25	77	86
Amreli	65	82	50	137	242	137	298	243	132	210	394	53
Anand	194	233	249	392	515	564	6	7	9	9	8	13
Banaskantha	386	463	441	475	841	797	299	252	355	451	426	660
Bharuch	121	131	125	111	157	155	9	19	14	10	22	24
Bhavnagar	92	99	73	199	236	154	168	156	138	163	287	164
Dahod	277	271	304	289	375	401	4	37	32	4	32	26
Gandhinagar	77	77	90	170	193	207	38	40	38	68	81	72
Jamnagar	84	111	84	172	281	190	416	431	389	603	753	701
Junagadh	171	291	217	552	1,033	686	419	490	452	611	980	759
Kachchh	182	195	216	173	213	196	164	240	297	223	339	512
Kheda	262	326	306	514	743	693	20	15	32	23	19	42
Mehsana	155	188	204	268	397	456	98	108	155	151	184	263
Narmada	50	58	79	55	75	94	3	11	8	6	13	15
Navsari	60	109	95	130	257	226	0	2	1	0	2	1
Panchmahals	264	270	312	252	344	448	6	10	23	9	15	39
Patan	155	161	145	137	251	236	84	90	160	115	148	275
Porbandar	29	65	64	50	152	112	88	95	94	148	79	183
Rajkot	115	210	141	292	722	483	426	365	335	487	683	452
Sabarkantha	279	326	302	446	658	602	118	168	165	153	267	242
Surat	157	135	133	256	250	258	15	20	12	22	20	16
Surendranagar	113	135	127	170	286	297	129	123	140	117	175	269
Tapi	89	93	106	116	142	173	8	21	18	18	27	32
The Dangs	47	51	72	56	56	91	4	12	9	6	12	9
Vadodara	244	350	314	298	592	522	28	67	74	41	96	126
Valsad	80	96	94	128	167	171	0	6	6	0	2	2

* Average from 2004-05 to 2009-10

SOURCE: Agriculture and Co-operation Department, Govt of Gujarat.



TABLE VII.6: District-wise Area under Crops and Production – Sugarcane and Cotton

Districts	Sugarcane						Cotton					
	Area ('000 ha)			Production ('000 MT)			Area ('000 ha)			Production ('000 bales)		
	*2004-10	2010-11	2011-12	*2004-10	2010-11	2011-12	*2004-10	2010-11	2011-12	*2004-10	2010-11	2011-12
GUJARAT	201.9	190.1	201.9	14,654	13,763	12,749	2,218	2,623	3,003	7,192	9825	1,0375
Ahmedabad	0.1	0.1	0	4.8	7	0	188	209	222	288	592	392
Amreli	0.2	0.1	0	12.2	7	0	188	269	389	665	1,143	1,010
Anand							4	3	5	13	14	23
Banaskantha							19	32	48	73	114	182
Bharuch	21.7	20.8	18.8	1,582.4	1,514	1,163	133	118	125	267	223	261
Bhavnagar	0.2	0.1	0.4	6.7	7	21	263	301	305	1,034	1,424	1,093
Dahod							1	0	0	3	0	0
Gandhinagar							28	30	33	106	113	137
Jamnagar	0.4	0.5	0	31.0	36	0	133	193	231	641	763	1,077
Junagadh	10.6	8.8	12.8	968.0	679	923	44	50	69	229	188	289
Kachchh	0.2	0.1	0	13.4	7	0	56	77	87	204	337	392
Kheda							21	22	30	68	85	73
Mehsana							48	57	65	139	224	291
Narmada	4.6	11.7	10.0	323.4	899	704	44	41	46	112	117	134
Navsari	29.0	22.0	21.0	1,976.4	1,584	1,327	0	0	0	0	0	0
Panchmahals	0.1	0.1	0	5.4	7	0	10	10	10	25	18	18
Patan							79	69	73	114	151	199
Porbandar							10	7	24	39	21	62
Rajkot	0.2	0.2	0.1	14.4	14	5	261	357	387	1,339	1,658	1,823
Sabarkantha							93	107	157	286	347	490
Surat	119.1	98.9	105.9	9,199.8	7,411	6,942	6	1	9	15	4	34
Surendranagar	0.3	0.1	0.1	19.4	7	6	434	499	477	1,046	1,620	1,715
Tapi	15.8	10.1	18.1	1,122.0	516	803	4	4	14	5	8	45
The Dangs	0.1	0	0.1	3.2	0	5	0	0	0	0	0	0
Vadodara	3.3	7.7	7.0	246.8	470	317	174	166	197	468	662	639
Valsad	12.9	8.8	7.6	855.6	598	532	0	0	0	0	0	0

* Average from 2004-05 to 2009-10, 1 bale = 170 kg.

SOURCE: Agriculture and Co-operation Department, Govt of Gujarat.



TABLE VII.7: Operational Holdings in Gujarat

Size of Holding (ha)	Total Holdings		Average Size of Holding (ha)
	Number ('000)	Area ('000 ha)	
Marginal	1,585	792	0.50
Small	1,345	1,959	1.46
Semi-medium	1,080	3,004	2.78
Medium	582	3,380	5.81
Large	68	1,133	16.72
All Classes	4,661	10,269	2.20

SOURCE: Agricultural Census Database, 2005-06, Ministry of Agriculture, Govt of India.

TABLE VII.8: District-wise Average Annual Rainfall

Districts	Average Rainfall (mm)		
	1998 - 2010	2011	2012
GUJARAT	942	930	649
Ahmedabad	721	612	458
Amreli	678	689	345
Anand	714	724	624
Banaskantha	607	775	457
Bharuch	717	634	507
Bhavnagar	613	587	380
Dahod	684	575	732
Gandhinagar	766	696	599
Jamnagar	723	858	377
Junagadh	961	1,069	425
Kachchh	422	667	244
Kheda	835	551	649
Mehsana	732	750	435
Narmada	1,058	1,013	771
Navsari	1,915	1,909	1,159
Panchmahals	775	792	791
Patan	546	717	349
Porbandar	826	937	232
Rajkot	651	853	348
Sabarkantha	830	978	772
Surat	1,535	1,394	906
Surendranagar	581	680	341
Tapi	341	955	877
The Dangs	2,477	1,635	1,603
Vadodara	956	839	711

SOURCE: Hydromet Division, India Meteorological Department, Ministry of Earth Sciences. Govt of India.



TABLE VII.9: Net Irrigated Area under Different Sources of Irrigation

(‘000 ha)

Particulars	1992-93	1997-98	2003-04	2005-06	2007-08	2008-09	2010-11
Net Irrigated Area	2,643	3,058	3,388	3,907	4,233	4233	4,233
Net Sown Area		9,674	9,852	9,722	9,966	10,302	10,302
Gross Sown Area		11,156	11,421	11,495	12,211	11,637	12,247
Sources (net irrigated area)							
Canals	557	636	600	778	771	771	771
Tanks	26	30	26	42	45	45	45
Wells and Tube Wells	2,056	2,368	2,737	3,024	3,303	3,303	3,303
Other Sources	3	24	25	63	114	114	114

SOURCE: India Harvest (CMIE) and Directorate of Economics and Statistics, Ministry of Agriculture, Govt of India.

TABLE VII.10: Major River Basins of Gujarat

Rivers	Origin	Length (km)	Catchment Area (sq km)	States Falling in the Catchment Area
Sabarmati	Aravalli Hills (Rajasthan)	371	21,674	Rajasthan and Gujarat
Mahi	Dhar (Madhya Pradesh)	583	34,842	Madhya Pradesh, Rajasthan and Gujarat
Narmada	Amarkantak (Madhya Pradesh)	1,312	98,796	Madhya Pradesh, Gujarat and Maharashtra
Tapi	Betul (Madhya Pradesh)	724	65,145	Madhya Pradesh, Maharashtra and Gujarat

SOURCE: Hydrology and Water Resources Information System for India, National Institute of Hydrology, Roorkee.

TABLE VII.11: Medium River Basins of Gujarat – West-flowing Rivers with Catchment Area

Rivers	Village/District (origin)	Length (km)	Catchment Area (sq km)
Ozat	Kathiawar	128	3,189
Shetrunji	Dalkania	182	5,514
Bhadar	Rajkot	198	7,094
Aji	Rajkot	106	2,139
Dhadhar	Panchmahals	135	2,770

SOURCE: Hydrology and Water Resources Information System for India, National Institute of Hydrology, Roorkee.

TABLE VII.12: Distribution of River Basins across Regions

Regions	No. of River Basins
Gujarat Mainland	18
Saurashtra Region	73
Kachchh Region	96

SOURCE: <http://guj-nwrws.gujarat.gov.in/>. Accessed on 4th November, 2013.





TABLE VII.13: Taluka-wise Groundwater Status

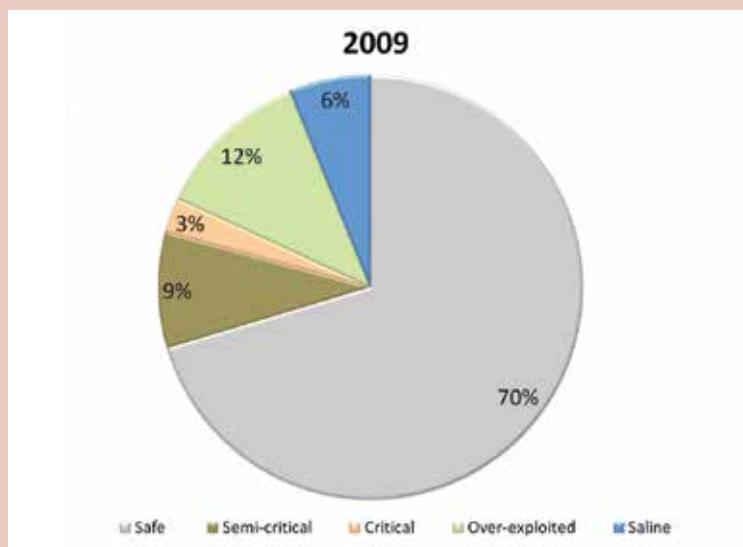
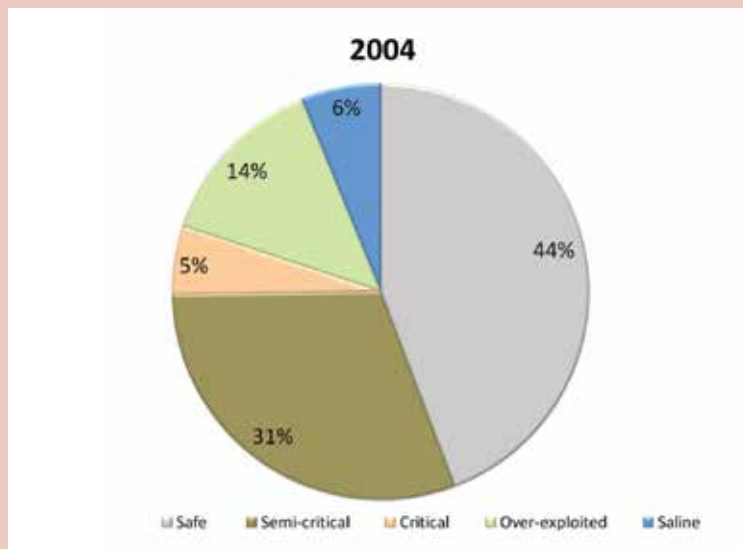
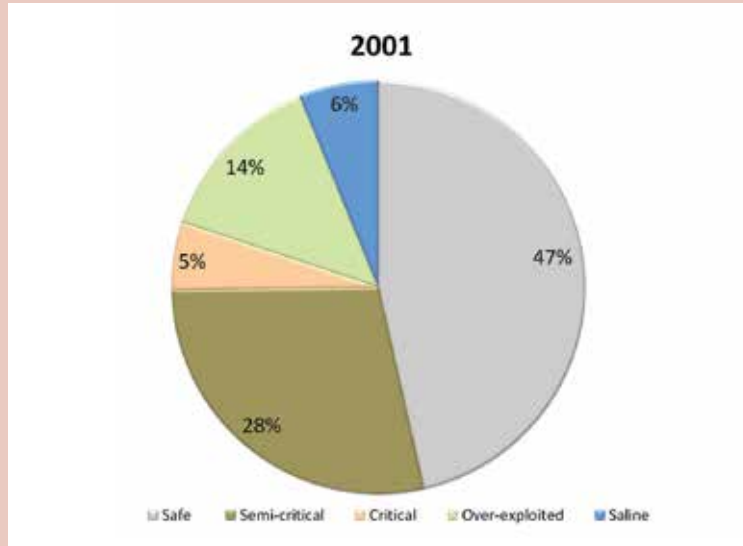
Districts	Number of Talukas (Sub-districts)									
	Semi-critical			Critical			Over-exploited			Saline*
	2001	2004	2009	2001	2004	2009	2001	2004	2009	
GUJARAT	64	69	20	12	12	6	31	31	27	14
Ahmedabad	4	4	4	3	2	0	2	2	2	1
Amreli	5	6	0	0	0	0	0	0	0	
Anand	1	1	0	0	0	0	0	0	0	
Banaskantha	1	1	1	2	2	1	6	6	6	2
Bharuch	1	2	1	0	0	0	0	0	0	2
Bhavnagar	5	4	0	0	1	0	0	0	0	
Dahod	2	2	0	0	0	0	0	0	0	
Gandhinagar	0	0	0	0	0	0	4	4	4	
Jamnagar	3	4	1	0	0	0	0	0	0	
Junagadh	7	8	2	2	2	0	1	1	0	
Kachchh	4	4	2	1	1	2	3	3	3	1
Kheda	3	3	4	1	1	0	0	0	0	
Mehsana	0	0	0	1	1	1	8	8	8	
Narmada	0	0	0	0	0	0	0	0	0	
Navsari	0	0	0	0	0	0	0	0	0	
Panchmahals	5	6	0	0	0	0	0	0	0	
Patan	0	0	0	0	0	0	3	3	3	4
Porbandar	2	2	0	0	0	0	1	1	1	
Rajkot	8	8	0	1	1	0	0	0	0	1
Sabarkantha	7	8	1	1	1	2	2	2	0	
Surat	1	1	0	0	0	0	0	0	0	
Surendranagar	3	3	1	0	0	0	0	0	0	3
Tapi			0	0	0	0	0	0	0	
The Dangs	0	0	0	0	0	0	0	0	0	
Vadodara	2	2	3	0	0	0	1	1	0	
Valsad	0	0	0	0	0	0	0	0	0	

* Number of saline talukas (Sub-districts) remains same for all the years.

SOURCE: Various Reports of Dynamics of Ground Water Resources, Central Ground Water Board, Ministry of Water Resources, Govt of India.

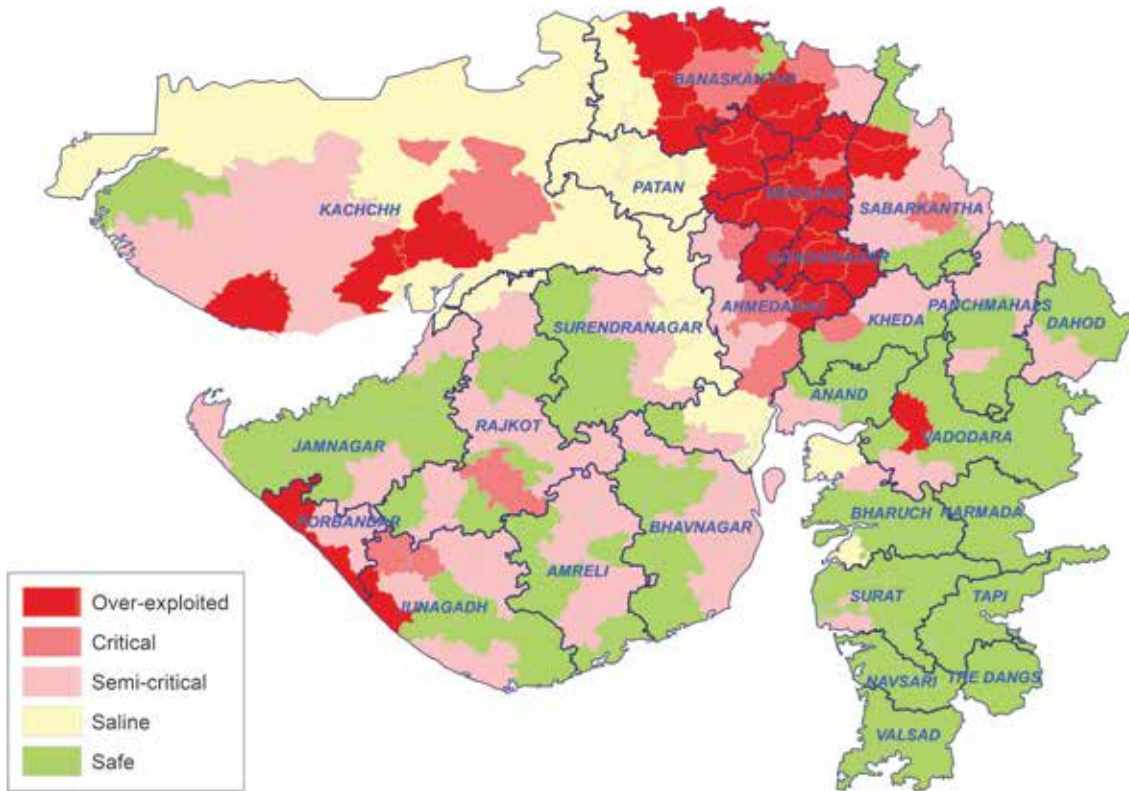


Ground Water Status in 2001, 2004 & 2009 (% of Talukas)

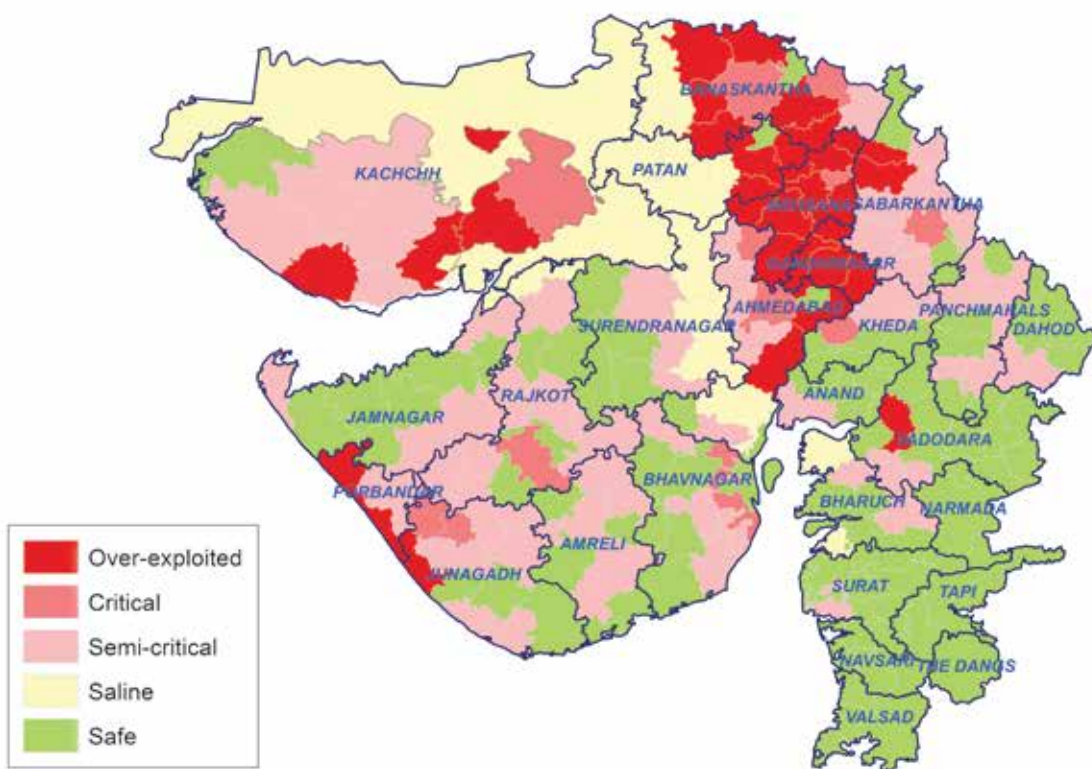




Taluka-wise Groundwater Status – 2001

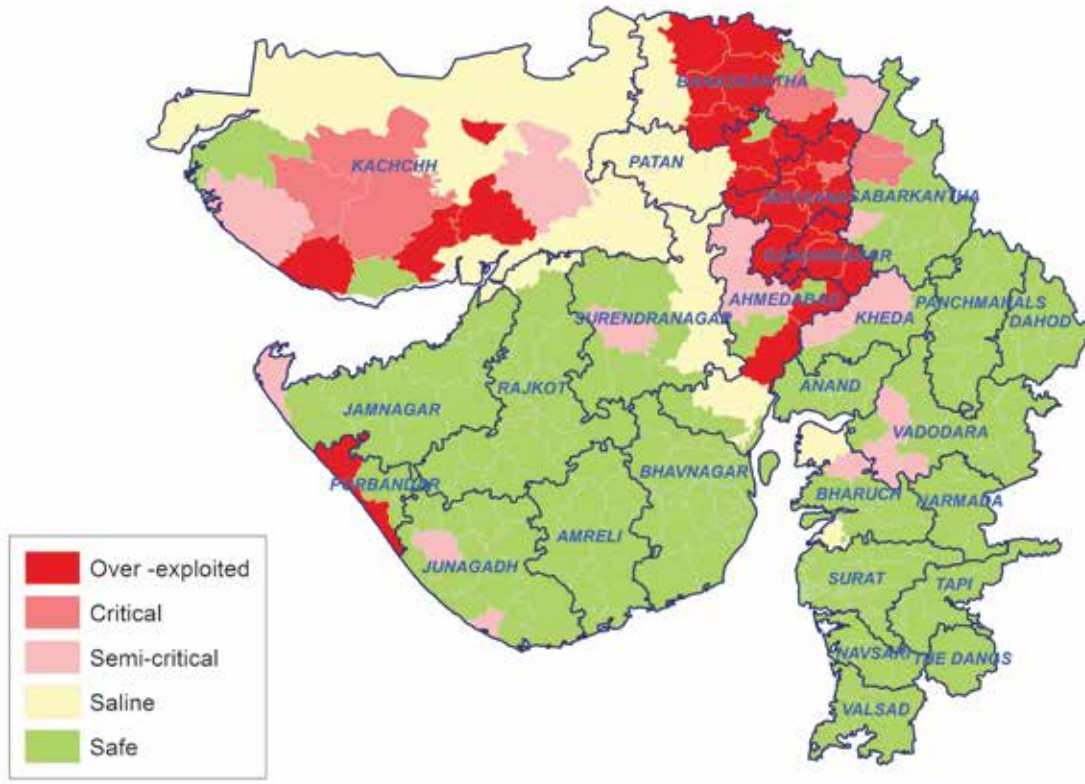


Taluka-wise Groundwater Status – 2004





Taluka-wise Groundwater Status – 2009





GLOSSARY

Artificial Insemination (AI): is the process by which sperm is placed in the female reproductive tract for impregnation.

Bovine: are the large ruminants like cattle, buffaloes, yak and *mithun*.

Breedable: female animals that have attained the age of puberty.

Breeding Tract: the area where breeds/group of animals are found.

Calving Interval: period between two calvings.

Castration: technique by which males are made sterile for use in draught operations.

Crossbred: animal produced by hybridization of two different breeds.

CP (Crude Protein): crude protein in the feed.

DM (Dry Matter): dry biomass available from feed and fodder.

Dry Animal: adult animals that have calved at least once but not in-milk at present.

Food Grains: includes cereals and pulses.

Gross State Domestic Product (GSDP): basic measure of a State's overall economic performance. It represents the market value of all final goods and services made within the borders of a State in a year.

Indigenous Animals: those animals native to a particular area.

In-milk Animals: animals which are lactating.

Irrigation Intensity: $(\text{Gross irrigated area}/\text{Net irrigated area}) \times 100$.

Lactation Length: number of days the animal secretes milk.

Lactation Yield: total milk production over period of 300/305 days.

Literacy Rate: is defined as the percentage of literates in the age group above six years.

Livestock: domesticated mammals.

Male to Female Ratio: number of males to females.

Milch Animals: the sum of in-milk and dry animals.

Milk Utilisation Pattern: quantities of milk retained for home consumption in liquid form, retained for product conversion and milk sold by the milk producers.

Marginal Holdings: farmers having less than one hectare of operational holding.

Small Holdings: greater than one hectare and less than two.

Semi Medium: greater than two and less than four hectares.

Medium Holdings: are more than four and less than 10 hectares.

Large Holdings: are those larger than 10 hectares.

Population Density: number of human beings/animals per square km of geographical area.

Poultry: all categories of chicken, guinea fowls, turkey, ducks and quails.

Sex Ratio: is the ratio of females to 1,000 males in a population.

Small Ruminants: the sum of sheep and goats.

TDN (Total Digestible Nutrients): nutrients of feed which can be digested.

Urbanisation: per cent of urban population to total population.

Wet to Dry Ratio: ratio of number of in-milk animals to dry ones.



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