



National Dairy
Development
Board

DAIRYING IN PUNJAB



A STATISTICAL PROFILE 2014



PUNJAB

Formation of districts: Census 1991 to 2011



Census year 2001 2011



FOREWORD

In this compilation of the statistical profile 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 Punjab – A Statistical Profile 2014" is amongst a series of similar publications for different states being brought out by National Dairy Development Board (NDDB).

Dilip Rath

Managing Director, NDDB

October 2014
Anand, Gujarat



INDEX

I. GENERAL STATISTICS

I.1. Punjab at a Glance

I.1.1: General Statistics: Punjab State vs. India	2
I.1.2: Formation of Districts in Punjab	4

I.2. Social Statistics: Human Population

I.2.1: Human Population by Residence and Sex – 2001	5
I.2.2: Human Population by Residence and Sex – 2011	7
I.2.3: District-wise SC and ST Population – 2001 and 2011	9
I.2.4: Rural Households, Electricity and Tap Water Supply - 2001 & 2011	11

I.3. State Economy

I.3.1: Net State Domestic Product (NSDP) and Per Capita Income	13
I.3.2: Value of Output: Agriculture and Livestock	15
I.3.3: Budget Provision of different schemes run by Animal Husbandry Department, Punjab	16
I.3.4: Rashtriya Krishi Vikas Yojana (Animal Husbandry Department)	16

II. LIVESTOCK CENSUS

II.1. Animal Population

II.1.1: Summary of Livestock Census (1992 to 2012) - Punjab	18
II.1.2: District-wise Total Bovine Population	19
II.1.3: District-wise Female Population	20
II.1.4: District-wise Breedable Population	21
II.1.5: District-wise In-milk Population	23
II.1.6: District-wise Milch Population	24
II.1.7: District-wise Male Population	25

II.2. Sex Ratio in Dairy Animals

II.2.1: District-wise Male-Female Ratio	26
---	----

II.3. Wet-Dry Ratio of Dairy Animals

II.3.1: District-wise Wet-Dry Ratio	27
---	----

II.4. Livestock Density

II.4.1: District-wise Density of Total Livestock and Bovine	29
II.4.2: District-wise Density of Poultry and Small Ruminants	30

II.5. Breed-wise Population

II.5.1: District and Breed-wise Indigenous Cattle Population – 2007	31
II.5.2: District-wise Male, Female and Milch Animals of Indigenous Breeds – 2007	32
II.5.3: District-wise Exotic and Crossbred Cattle Population – 2007	33
II.5.4: District-wise Male, Female and Milch Animals of Jersey and Holstein Friesian Crossbreds – 2007	35
II.5.5: District-wise Male, Female and Milch Animals of Exotic and Other Crossbreds – 2007	36
II.5.6: District and Breed-wise Buffalo Population – 2007	37
II.5.7: District-wise Male, Female and Milch Animals of Murrah and Nili Ravi Breeds – 2007	38

III. CATTLE AND BUFFALO BREEDS

III.1. Distribution of Native Breeds of Punjab

III.1.1: Distribution of Cattle Breeds of Punjab	40
III.1.2: Distribution of Buffalo Breeds of Punjab	43

III.2. Performance of Breeds

III.2.1: Performance of Cattle and Buffalo Breeds	45
---	----

IV. MILK PRODUCTION

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

IV.1.1: Year-wise In-milk Bovine Population, Milk Yield and Milk Production	48
IV.1.2: Year and District-wise In-milk Bovine Population	49
IV.1.3: Year and District-wise In-milk Indigenous Cattle Population	51
IV.1.4: Year and District-wise In-milk Crossbred Cattle Population	53
IV.1.5: Year and District-wise In-milk Buffalo Population	55

IV.2. ISS Figures: Milk Yield

IV.2.1: Year and District-wise Bovine Milk Yield	57
IV.2.2: Year and District-wise Indigenous Cattle Milk Yield	59
IV.2.3: Year and District-wise Crossbred Cattle Milk Yield	61
IV.2.4: Year and District-wise Buffalo Milk Yield	63



IV.3. ISS Figures: Milk Production	
IV.3.1: Year and District-wise Bovine Milk Production	67
IV.3.2: Year and District-wise Indigenous Cattle Milk Production	69
IV.3.3: Year and District-wise Crossbred Cattle Milk Production	71
IV.3.4: Year and District-wise Buffalo Milk Production	73
IV.3.5: Year and District-wise Milk Production Density	75
IV.4. ISS Figures: Milk Availability	
IV.4.1: Year and District-wise Per Capita Milk Availability	77
IV.5. ISS Figures: Milk Utilisation	
IV.5.1: Milk Utilisation Pattern in Households (2000-01 to 2012-13)	79
V. VETERINARY INFRASTRUCTURE AND SERVICE DELIVERY SYSTEM	
V.1. Veterinary Infrastructure	
V.1.1: Year and District-wise Veterinary Institutes	82
V.1.2: District-wise AI Centres – Government Agencies	83
V.1.3: Milk Union-wise AI Centres – Cooperatives	84
V.2. Service Delivery System - AIs	
V.2.1: District-wise AI Performed by Government Agencies – Cattle	85
V.2.2: District-wise AI Performed by Government Agencies – Buffaloes	86
V.2.3: District-wise AI Performed by Government Agencies – Bovine	87
V.2.4: Milk Union-wise AI Performed by Cooperatives – Cattle	89
V.2.5: Milk Union-wise AI Performed by Cooperatives – Buffaloes	89
V.2.6: Milk Union-wise AI Performed by Cooperatives – Bovine	89
V.3. Service Delivery System - Animal Health	
V.3.1: District-wise Vaccination Performed for Foot-and-Mouth Disease	90
V.3.2: District-wise Vaccination Performed for Haemorrhagic Septicaemia	91
V.3.3: District-wise Vaccination Performed for Black Quarter	92
V.3.4: District-wise Bovine Vaccination	93
V.3.5: District-wise Bovine Treated	95
V.3.6: District-wise Bovine Castration	96
VI: FEED RESOURCES	
VI.1. Feed Resources - Fodder	
VI.1.1: Area under Fodder Crops and Gross Sown Area	99
VI.2. Feed Resources - Availability vs. Requirement	
VI.2.1: District-wise Dry Matter (DM) Availability, Requirement and Balance	101
VI.2.2: District-wise Crude Protein (CP) Availability, Requirement and Balance	103
VI.2.3: District-wise Total Digestive Nutrient (TDN) Availability, Requirement and Balance	105
VI.2.4: Availability, Requirement and Surplus/Deficit of Feed Nutrients	107
VI.3. Feed Resources - Consumption	
VI.3.1: Feed and Fodder Consumption	109
VII: AGRICULTURE	
VII.1. Agro-Climatic Zones	
VII.1.1: Details of Agro-climatic Zones	112
VII.2. Land Use Pattern	
VII.2.1: District-wise Land Use Pattern	113
VII.3. Area and Production	
VII.3.1: District-wise Area and Production of Cereals and Pulses	115
VII.3.2: District-wise Area and Production of Food Grains and Oilseeds	117
VII.3.3: District-wise Area and Production of Sugarcane and Cotton	119
VII.4. Land Holding	
VII.4.1: Operational Holdings in Punjab	120
VII.4.2: Net Irrigated Area under Different Sources of Irrigation	120
VII.5. Rainfall	
VII.5.1: District-wise Average Annual Rainfall	121
VII.6. Ground Water Status	
VII.6.1: Distribution of Blocks According to Ground Water Status	122
GLOSSARY	125

PART I : GENERAL STATISTICS

This section contains relevant data on the overview of the state including structural trends in the state's economy, district-wise data on socio economic parameters and indicators for development infrastructure.

Punjab has been a pioneer in agrarian economy. The state has made noteworthy progress in consolidation of land holding, land reclamation for agriculture, development of irrigation, usage of high yielding seed varieties, chemical fertilizers, insecticides and mechanical inputs.

As per Census 2011, Punjab's human population was 27.7 million and more than half of the population resided in six districts viz. Ludhiana, Amritsar, Gurdaspur, Jalandhar, Ferozpur, Patiala and the balance resided in the remaining districts. About 37 per cent of state's population resided in urban areas which was higher than national average of 32 per cent. Similarly, the per capita SDP in the state is higher than the GDP of the country.

The share of agriculture and allied activities in the net state domestic product has declined from 34 per cent in 2004-05 to 22 per cent in 2012-13 at constant (real) price. However, contribution of agriculture in state SDP is one of the highest in India. The share of livestock in NSDP has also declined but not as steep as the share of agriculture sector. Milk is the main product of livestock sector accounting for nearly 80 per cent of the total value of output of livestock.

The state of Punjab reported sex ratio of 893 females per 1,000 males as against national average of 940 females. The state's sex ratio in urban area is lower than that of rural area.





I.1. Punjab at a Glance

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

Particulars	Unit	Year	Punjab	India
State Geography & Rural Infrastructure				
Geographical Area	'000 sq. km	2012	50.4	3,287.3
Districts	nos	2011	20	640
Sub-Districts	"	"	77	5,924
Inhabited Villages	'000	"	12.6	640.9
Households	million	"	5.5	249.4
Rural Households				
2001	'000	2001	2,796	1,37,414
2011	"	2011	3,358	1,68,565
Rural Households with Electricity				
2001	%	2001	89	44
2011	"	2011	94	55
Rural Households with Tap water supply				
2001	%	2001	16	24
2011	"	2011	34	31
Human Population				
Population	million	2011	27.7	1,210.1
Urban (As % of total)	%	"	37.4	31.2
Rural (As % of total)	"	"	62.5	68.8
Density of Population	per sq. km	"	550	382
Scheduled Castes (As % of total)	%	"	31.9	16.6
Scheduled Tribes (As % of total)	"	"	0	8.6
Sex Ratio	Ratio	"	893	940
Literacy Rate (excluding population of 0 to 6 age group)				
Male	%	2011	81.5	82.1
Female	"	"	71.3	65.5
Urban	"	"	83.7	84.9
Rural	"	"	72.5	68.9
Per Capita Income (at current prices)	₹	2012-13	88,783	69,585
Livestock Population				
Bovine	million	2012	8.1	512.0
	"	"	7.6	299.9
Indigenous Cattle	"	"	0.4	151.2
Crossbred Cattle	"	"	2.1	39.7
Buffaloes	"	"	5.2	108.7
Small Ruminants	"	"	0.5	200.2
Poultry Population	"	"	16.8	729.2



I.1. Punjab at a Glance

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

Particulars	Unit	Year	Punjab	India
Livestock Population	million	2007	7.4	529.7
Bovine	"	"	6.8	304.8
Indigenous Cattle	"	"	0.5	166.0
Crossbred Cattle	"	"	1.3	33.1
Buffaloes	"	"	5.1	105.3
Small Ruminants	"	"	0.5	212.1
Poultry Population	"	"	10.7	648.9
Number of Cattle Breeds	nos	"	2	30
Number of Buffalo Breeds	"	"	2	12
Livestock Production				
Milk Production - Total	'000 MT	2012-13	9,724	1,32,431
Crossbred Cattle	"	"	2,782	32,384
Indigenous Cattle	"	"	304	27,421
Buffaloes	"	"	6,575	67,675
Goats	"	"	63	4,950
Per Capita Milk Availability (estimated)	gms/day	"	942	295
Egg Production	million	"	3,792	69,730
Estimated Meat Production	'000 MT	"	212	5,948
Marine & Inland Fish Production	"	"	99	9,062
Wool Production	'000 Kg	"	557	46,055
Veterinary Infrastructure				
Veterinary Institutes	nos	2012-13	2,852	57,724
Semen Stations	"	2011-12	3	54
AI Centers (Govt)	"	2012-13	3,824	77,765
Veterinary Services				
AI Done (Govt)	'000	2012-13	4,213	41,165
Vaccination Done				
H.S. Vaccination	"	2012-13	6,257	
B.Q. Vaccination	"	2010-11	63	
FMD Vaccination	"	2012-13	13,446	
Total Bovine	"	"	19,703	
Treatment	"	"	5,369	
Castration	"	"	16	
Agricultural Resources				
Forest Cover	%	2010-11	5.8	21.3
Pasture and Grazing Land	'000 ha	"	4	10,301
As % of total reporting area	%	"	0.1	3.4
Area Under Fodder Crops	'000 ha	"	540	7,769
As % of Gross Cropped Area	%	"	98	45



I.1. Punjab at a Glance

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

Particulars	Unit	Year	Punjab	India
Cropping Intensity	%	"	190	141
Irrigation Intensity	%	"	190	141
Production of Major Crops				
Cereals	'000 MT	2012-13	28,490	2,38,792
Pulses	"	"	14	18,342
Oilseeds	"	"	69	30,941
Sugarcane	"	"	5,919	3,41,199
Fodder Production/Availability	MMT	2008	49	933
Ground Water Status (2009 vs 2004)				
Safe	% of Blocks	2009 & (2004)	17 (18)	73 (71)
Semi Critical	"	"	1 (3)	9 (10)
Critical	"	"	2 (4)	3 (4)
Over Exploited	"	"	80 (75)	14 (15)
Salinity Affected	"	"		1(1)

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 Agriculture, Govt. of Punjab.
- Ministry of Statistics and Programme Implementation, Govt. of India.
- Basic Animal Husbandry and Fisheries Statistics, 2013, DAHD, Ministry of Agriculture, Govt. of India.

TABLE I.1.2: Formation of Districts in Punjab

New Districts	Year of Formation	Carved out of
Barnala	November, 2006	Sangrur
Faridkot	August, 1972	Bathinda
Mansa	April, 1992	Bathinda
Moga	November, 1995	Faridkot
SAS Nagar (Mohali)	April, 2006	Rupnagar (Ropar) & Patiala
SBS Nagar (Nawanshahr)	November, 1995	Hoshiarpur & Jalandhar
Tarn Taran	2006	Amritsar
Muktsar	1995	Ferozpur
Fatehgarh Sahib	April, 1992	Patiala, Ludhiana, Rupnagar (Ropar)
Pathankot	2013	Gurdaspur
Fazilka	2013	Ferozpur



I.2. Social Statistics: Human Population

TABLE I.2.1: Human Population by Residence and Sex – 2001

Districts	Rural ('000)			Urban ('000)			Total ('000)		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
PUNJAB	8,517	7,580	16,096	4,468	3,794	8,263	12,985	11,374	24,359
Amritsar	994	879	1,873	657	566	1,223	1,651	1,445	3,096
Bathinda	444	387	832	189	163	352	633	550	1,183
Faridkot	189	168	357	104	90	194	293	258	551
Fatehgarh Sahib	208	179	387	82	69	151	290	248	538
Firozpur	684	612	1,295	242	208	451	926	820	1,746
Gurdaspur	827	742	1,569	286	249	535	1,113	991	2,104
Hoshiarpur	611	578	1,189	154	138	292	765	716	1,481
Jalandhar	539	492	1,031	501	431	932	1,040	923	1,963
Kapurthala	266	242	508	134	113	247	400	355	755
Ludhiana	713	627	1,339	950	744	1,694	1,663	1,370	3,033
Mansa	291	256	546	76	67	142	366	322	689
Moga	379	337	716	95	84	179	474	421	895
Patiala	643	558	1,200	345	300	645	987	858	1,845
Rupnagar (Ropar)	403	351	754	193	169	362	597	520	1,116
Sangrur	757	659	1,415	313	272	585	1,069	931	2,000
SBS Nagar (Nawanshahr)	265	242	506	42	39	81	307	281	587
Muktsar	306	273	579	105	93	199	411	366	777

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

Barnala, SAS Nagar (Mohali), Fazilka, Pathankot & Tarn Taran were not formed in 2001.





I.2. Social Statistics: Human Population

TABLE I.2.2: Human Population by Residence and Sex – 2011

Districts	Rural ('000)			Urban ('000)			Total ('000)		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
PUNJAB	9,093	8,251	17,344	5,546	4,853	10,399	14,639	13,104	27,743
Amritsar	607	549	1,156	711	623	1,335	1,318	1,172	2,491
Barnala	215	190	405	102	88	191	318	278	596
Bathinda	474	415	889	269	231	499	743	645	1,389
Faridkot	211	190	400	116	101	217	327	291	618
Fatehgarh Sahib	220	195	415	101	85	185	321	279	600
Firozpur	776	700	1,477	295	257	553	1,072	957	2,029
Gurdaspur	856	783	1,639	357	302	659	1,213	1,086	2,298
Hoshiarpur	634	617	1,252	175	160	335	809	778	1,587
Jalandhar	529	504	1,032	616	545	1,161	1,145	1,048	2,194
Kapurthala	276	257	533	150	132	282	426	389	815
Ludhiana	753	676	1,429	1,114	955	2,070	1,868	1,631	3,499
Mansa	322	284	606	87	77	164	409	361	770
Moga	406	363	769	120	107	227	526	470	996
Patiala	599	534	1,132	404	360	763	1,003	893	1,896
Rupnagar (Ropar)	264	243	507	93	84	178	357	327	685
Sangrur	605	535	1,139	273	243	516	878	777	1,655
SAS Nagar (Mohali)	241	209	450	288	256	545	529	465	995
SBS Nagar (Nawanshahr)	248	239	487	65	60	125	313	299	612
Muktsar	342	308	650	133	119	252	476	426	902
Tarn Taran	514	464	978	75	67	142	589	530	1,120

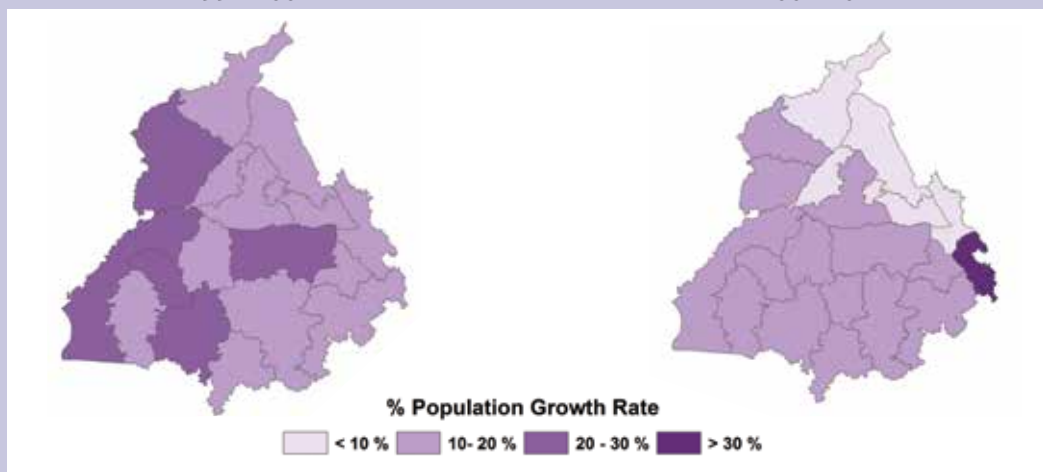
SOURCE: Census 2011, Office of the Registrar General and Census Commissioner, Govt. of India, New Delhi.



% Decadal Growth Rate of Population

1991-2001

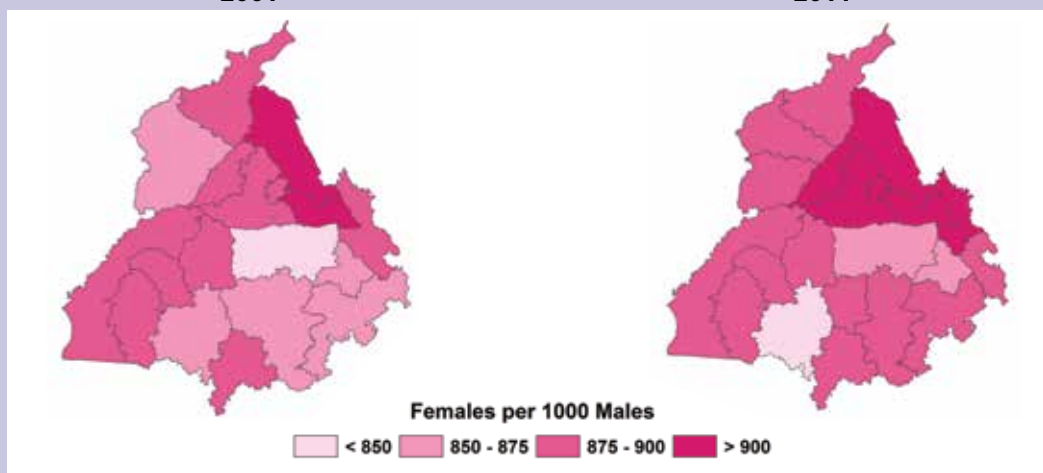
2001-2011



% Sex Ratio

2001

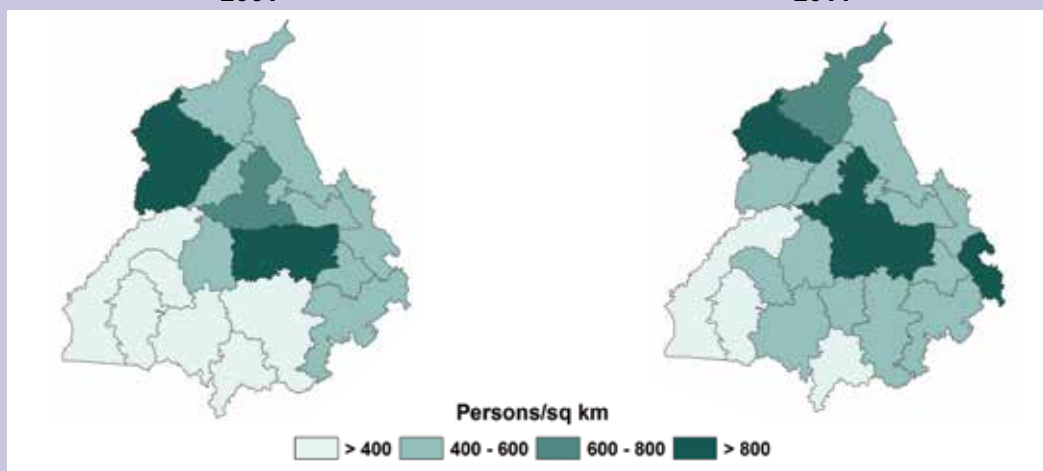
2011



Population Density

2001

2011





I.2. Social Statistics: Human Population

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

Districts	SC Population ('000)		ST Population ('000)	
	2001	2011	2001	2011
PUNJAB	7,029	8,860	0	0
Amritsar	891	770	0	0
Barnala		192		0
Bathinda	355	450	0	0
Faridkot	199	240	0	0
Fatehgarh Sahib	165	192	0	0
Firozpur	398	855	0	0
Gurdaspur	521	580	0	0
Hoshiarpur	508	567	0	0
Jalandhar	740	854	0	0
Kapurthala	226	276	0	0
Ludhiana	758	923	0	0
Mansa	209	258	0	0
Moga	285	363	0	0
Patiala	425	465	0	0
Rupnagar (Ropar)	267	180	0	0
Sangrur	551	461	0	0
SAS Nagar (Mohali)		216		0
SBS Nagar (Nawanshahr)	238	260	0	0
Muktsar	294	381	0	0
Tarn Taran		377		0

SC: Scheduled Caste, ST: Scheduled Tribe

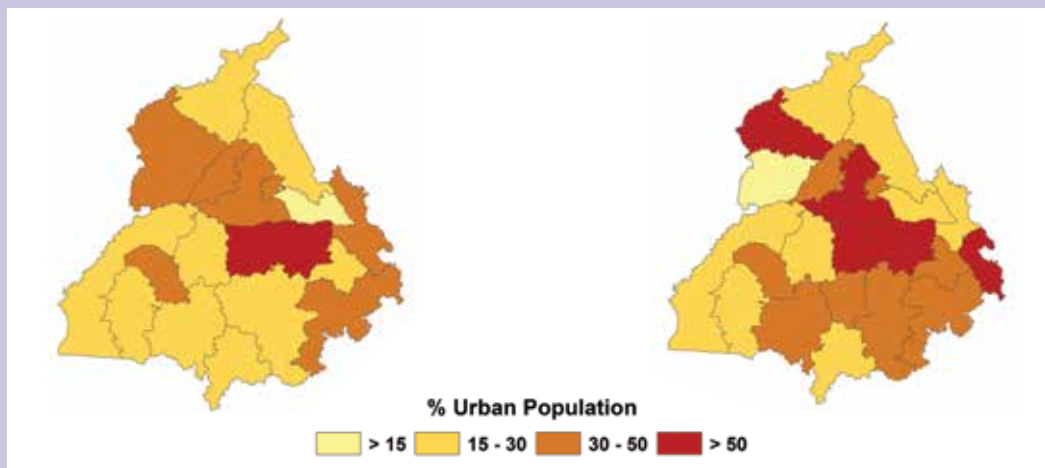
SOURCE: Census 2001 and 2011, Office of the Registrar General and Census Commissioner, Govt. of India, New Delhi.



Urbanisation (%)

2001

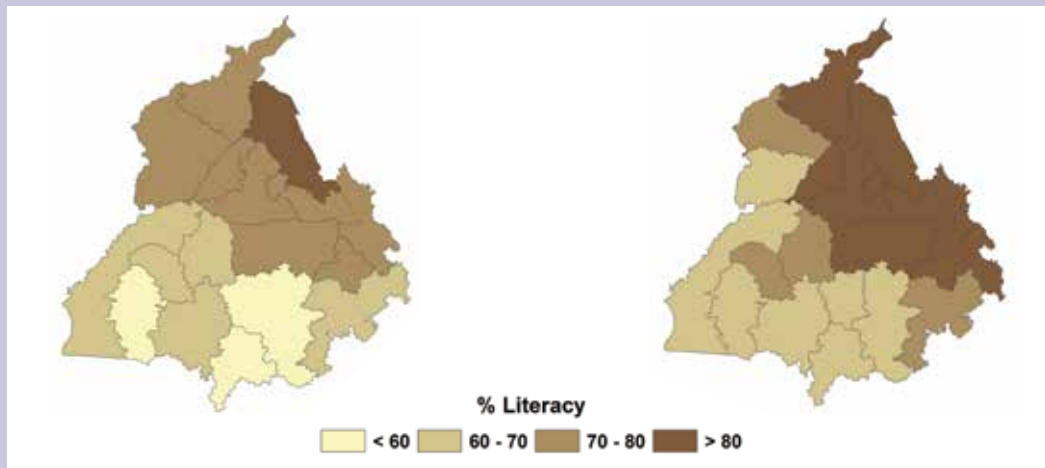
2011



Literacy (%)

2001

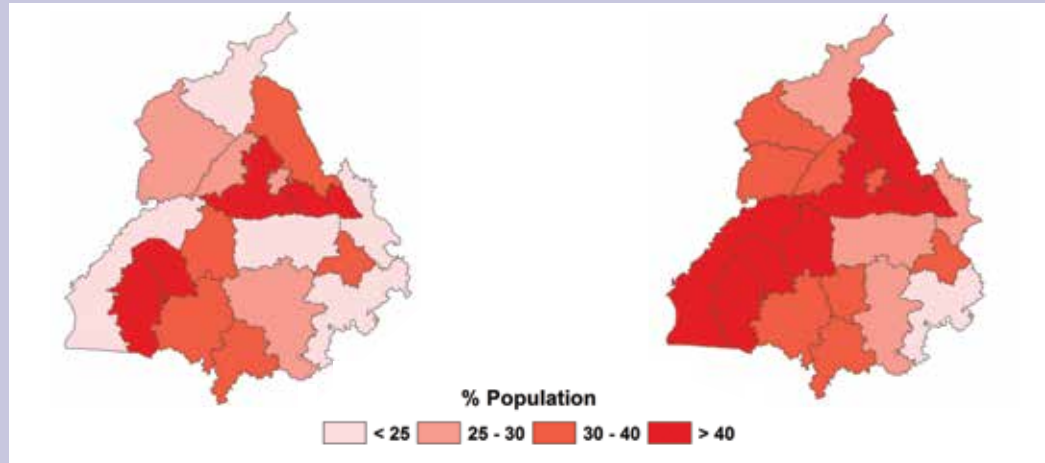
2011



Scheduled Caste Population (%)

2001

2011





I.2. Social Statistics: Human Population

TABLE I.2.4: Rural Households, Electricity and Tap Water Supply - 2001 and 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
PUNJAB	2,798	3,359	2,482	3,165	437	1,158
Amritsar	317	215	270	198	23	29
Barnala		77		72		30
Bathinda	143	171	118	163	26	81
Faridkot	62	77	54	73	12	26
Fatehgarh Sahib	65	79	62	76	6	22
Firozpur	220	277	180	250	45	84
Gurdaspur	269	312	228	292	37	57
Hoshiarpur	222	265	207	250	52	120
Jalandhar	187	214	178	208	22	79
Kapurthala	90	108	84	103	8	39
Ludhiana	236	281	221	272	20	77
Mansa	95	117	77	109	17	57
Moga	121	147	110	139	15	57
Patiala	204	214	182	202	32	91
Rupnagar (Ropar)	130	98	121	93	37	52
Sangrur	243	218	218	208	29	73
SAS Nagar (Mohali)		85		79		55
SBS Nagar (Nawanshahr)	93	103	88	99	18	45
Muktsar	101	124	84	118	38	65
Tarn Taran		177		161		19

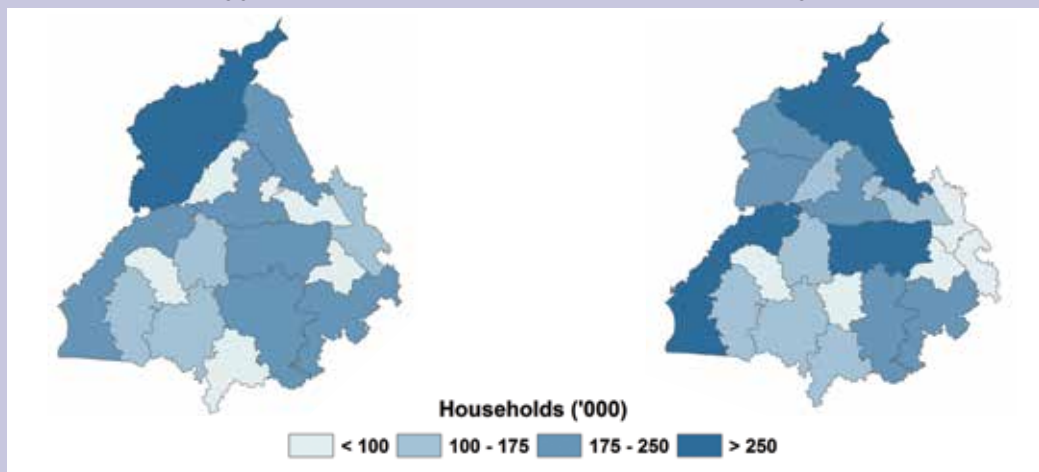
Source: Census 2001 and 2011, Office of the Registrar General and Census Commissioner, Govt. of India, New Delhi.



Rural Households

2001

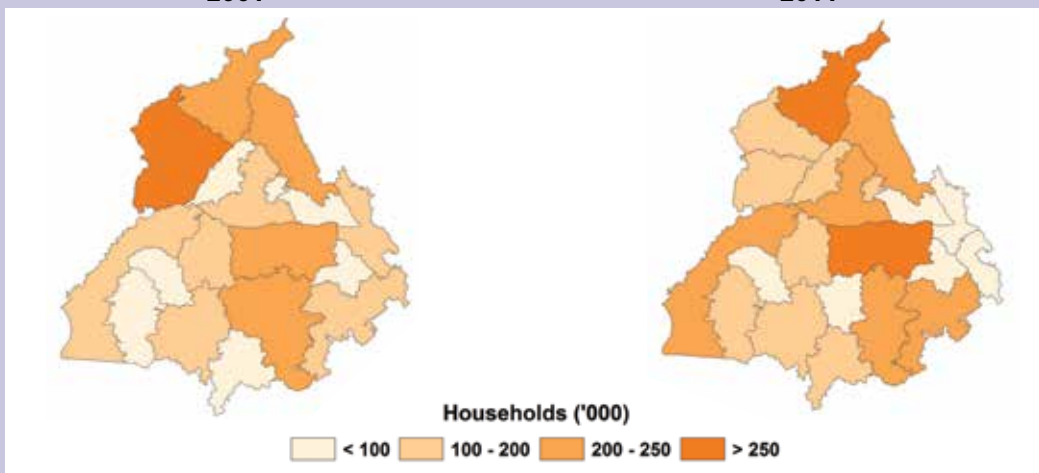
2011



Households with Electricity

2001

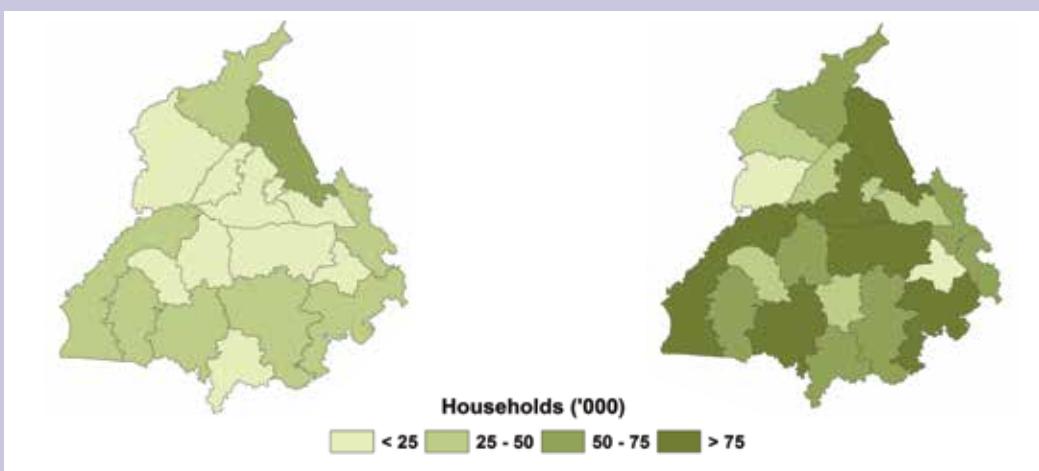
2011



Households with Tap Water

2001

2011





I.3. State Economy

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

Sector	At Current Prices (₹ crores)								
	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
State Domestic Product	86,108	95,902	1,13,013	1,35,706	1,54,827	1,76,187	2,02,020	2,32,524	2,64,537
1. Agriculture	28,368	31,041	35,594	43,128	49,514	54,028	59,392	65,690	72,279
2. Forestry & Logging	1,178	1,158	1,439	1,812	2,696	4,013	4,200	5,598	7,211
3. Fishing	243	292	319	296	326	414	435	486	526
4. Agriculture & Allied* (1+2+3)	29,788	32,491	37,351	45,237	52,536	58,455	64,026	71,773	80,017
As % of NSDP	34.59	33.88	33.05	33.33	33.93	33.18	31.69	30.87	30.25
Sub-total of Primary	29,806	32,510	37,371	45,260	52,579	58,478	64,047	71,801	80,047
As % of NSDP	34.62	33.90	33.07	33.35	33.96	33.19	31.70	30.88	30.26
Sub-total of Secondary	19,789	22,966	28,914	36,475	39,223	45,897	51,384	58,031	65,363
As % of NSDP	22.98	23.95	25.59	26.88	25.33	26.05	25.44	24.96	24.71
Services	36,513	40,426	46,727	53,971	63,025	71,812	86,589	1,02,692	1,19,128
As % of NSDP	42.40	42.15	41.35	39.77	40.71	40.76	42.86	44.16	45.03
Per Capita Income (₹)	33,103	36,199	41,883	49,380	55,315	61,805	69,580	78,633	88,783

Sector	At 2004-05 Prices (₹ crores)								
	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
State Domestic Product	86,108	90,330	1,00,072	1,08,738	1,14,766	1,22,097	1,29,983	1,37,103	1,44,238
1. Agriculture	28,368	28,513	29,282	30,355	30,907	30,506	30,847	31,101	31,169
2. Forestry & Logging	1,178	1,217	1,250	1,280	1,330	1,375	1,416	1,466	1,521
3. Fishing	243	267	267	241	263	289	292	293	296
4. Agriculture & Allied* (1+2+3)	29,788	29,996	30,798	31,875	32,500	32,170	32,554	32,860	32,986
As % of NSDP	34.59	33.21	30.78	29.31	28.32	26.35	25.04	23.97	22.87
Sub-total of Primary	29,806	30,014	30,816	31,898	32,524	32,193	32,579	32,886	33,013
As % of NSDP	34.62	33.23	30.79	29.33	28.34	26.37	25.06	23.99	22.89
Sub-total of Secondary	19,789	21,649	27,283	31,822	32,987	36,353	38,699	39,975	41,416
As % of NSDP	22.98	23.97	27.26	29.26	28.74	29.77	29.77	29.16	28.71
Services	36,513	38,666	41,972	45,019	49,255	53,552	58,706	64,242	69,809
As % of NSDP	42.40	42.81	41.94	41.40	42.92	43.86	45.16	46.86	48.40
Per Capita Income (₹)	33,103	34,096	37,087	39,567	41,003	42,831	44,769	46,364	48,409

* 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
Value of Output at Current Prices (₹ billion)							
Agriculture & Allied*	422.3	443.1	507.6	600.4	683.6	765.4	834.3
Agriculture	275.7	287.5	330.7	399.3	453.1	496.9	538.9
Livestock	129.6	138.3	156.3	177.7	194.6	215.8	239.4
Share of Value of Output to Agriculture and Allied* (%)							
Agriculture	65.3	64.9	65.1	66.5	66.3	64.9	64.6
Livestock	30.7	31.2	30.8	29.6	28.5	28.2	28.7
Value of Output at Constant Prices (₹ billion) (2004-05)							
Agriculture & Allied*	422.3	419	431.2	445.5	452.5	451.7	464.1
Agriculture	275.7	267.9	274.9	287.2	294.4	289.8	298.5
Livestock	129.6	133.3	137.9	139.7	142.7	141.3	144.3
Share of Value of Output to Agriculture and Allied* (%)							
Agriculture	65.3	63.9	63.8	64.5	65.1	64.2	64.3
Livestock	30.7	31.8	32	31.4	31.5	31.3	31.1
Value of Livestock Output at Current Prices (₹ billion)							
Milk	105.8	114.9	129.1	147.8	161	181	198.5
Meat	15	14.7	17.5	19.3	23.4	24.6	29.5
Egg	4.7	4.7	5.7	6.5	6.6	6.5	7.6
Dung	5.2	5.2	5.2	5.2	5.3	5.4	5.6
Others^	-1.2	-1.2	-1.2	-1.1	-1.7	-1.7	-1.9
Share of Livestock Output at Current Prices (%)							
Milk	81.7	83.1	82.6	83.2	82.7	83.9	82.9
Meat	11.6	10.7	11.2	10.9	12	11.4	12.3
Egg	3.6	3.4	3.6	3.6	3.4	3	3.2
Dung	4	3.8	3.4	2.9	2.7	2.5	2.3
Others^	-0.9	-0.9	-0.8	-0.6	-0.9	-0.8	-0.8
Value of Livestock Output at Constant Prices (₹ billion) (2004-05)							
Milk	105.8	110.2	113.4	114.8	116.1	116.1	116.6
Meat	15	14.7	15.9	16.3	18.2	17.3	19.7
Egg	4.7	4.5	4.8	4.8	4.7	4.2	4.5
Dung	5.2	5	4.8	4.6	4.5	4.3	4.2
Others^	-1.2	-1.1	-1	-0.8	-0.7	-0.6	-0.6
Share of Livestock Output at Constant Prices (%)							
Milk	81.7	82.7	82.2	82.2	81.4	82.2	80.8
Meat	11.6	11	11.5	11.7	12.7	12.3	13.6
Egg	3.6	3.3	3.5	3.4	3.3	2.9	3.1
Dung	4	3.8	3.5	3.3	3.1	3	2.9
Others^	-0.9	-0.8	-0.7	-0.6	-0.5	-0.5	-0.4

* Includes Livestock, Forestry & Fisheries.

^Includes Wool and Hair, Silkworm Cocoons & Honey, Increment in Stock.

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



I.3. State Economy

TABLE I.3.3: Budget Provision of different schemes run by Animal Husbandry Department, Punjab

Schemes	Budget Provision (₹ in lakh)			
	2008-09	2009-10	2010-11	2011-12
Direction & Administration	14,495	16,508	19,615	26,008
Veterinary Education Training	2,500	2,500	4,685	5,075
Veterinary Education & Animal Health	2,266	1,802	3,014	3,317
Cattle and Buffalo Development				
Poultry Development		2	165	70
Piggery Development	75	—	75	132
Sheep & Wool Development	—	—	—	
Other Livestock Development	—	—	116	144
Feed & Fodder Development	102	—	490	220
Investigation and Statistics		106	111	107
Special Component Plan		148	1,364	195
Total	19,439	21,068	29,639	35,270

SOURCE: Annual Administrative Report, Animal Husbandry Department, Punjab.

TABLE I.3.4: Rashtriya Krishi Vikas Yojana (Animal Husbandry Department)

Amount Release / Expenditure	Budget Provision (₹ in lakh)				
	2008-09	2009-10	2010-11	2011-12	2013-14
Amount Released	380.75	1,664.94	2,322.00	1,900.00	1,650.00
Expenditure Incurred	380.75	1,664.94	2,322.00	1,563.30	1,400.00

SOURCE: Annual Administrative Report, Animal Husbandry Department, Punjab.

PART II : LIVESTOCK CENSUS

This section contains district wise data on the population of indigenous cattle, crossbred cattle and buffaloes.

The “19th Livestock Census - 2012” shows an overall increase of 10.9 per cent in the total Bovine population in Punjab as compared to the previous census of 2007. While crossbred cattle and buffaloes have shown 37 and 2 per cent increase in population, indigenous cattle has declined by 27 per cent. The number of milch animals (Cattle & Buffaloes) has increased by 8 per cent from 3.6 million to 3.9 million. The number of in-milk Bovine have increased by 7.7 per cent from 2.67 million to 2.88 million.

At the time of publication of this document, district-wise figures of “19th Livestock Census – 2012” were unavailable for the state of Punjab. The contents would be revised and uploaded on NDDB’s Knowledge Portal in due course of time.





II.1. Animal Population

TABLE II.1.1: Summary of Livestock Census (1992 to 2012) - Punjab

Population	1992	1997	2003	2007	2012
Total Bovine	80,72,608	88,08,537	80,33,078	68,38,491	75,87,438
Total Cattle	23,08,596	26,37,861	20,38,543	17,76,937	24,27,714
Total Exotic/Crossbred Cattle	15,03,306	18,28,125	15,30,517	12,78,447	20,64,629
Female	11,31,906	14,30,458	12,56,780	10,76,692	18,23,801
under 1 year	2,31,460	2,31,744	2,04,022	1,75,150	3,20,642
1 to 2.5 years	2,11,920	2,29,864	2,60,012	1,79,902	3,21,571
Over 2.5 years	6,88,526	9,68,850	7,92,746	7,21,640	11,81,588
In-milk	4,07,606	6,31,135	5,66,755	5,12,612	8,58,453
Dry	1,86,120	2,35,211	1,73,861	1,70,459	2,75,645
Milch	5,93,726	8,66,346	7,40,616	6,83,071	11,34,098
Not Calved Even Once	87,900	94,367	41,108	30,977	38,334
Others	6,900	8,137	11,022	7,592	9,156
Males	3,71,400	3,97,667	2,73,737	2,01,755	2,40,828
Total Indigenous Cattle	8,05,290	8,09,736	5,08,026	4,98,490	3,63,085
Female	6,60,690	4,83,065	2,19,042	2,72,002	1,69,519
under 1 year	1,07,480	81,526	35,753	47,125	26,650
1 to 3 years	99,960	72,606	40,718	43,544	27,676
Over 3 years	4,53,250	3,28,933	1,42,571	1,81,333	1,15,193
In-milk	2,61,420	1,97,287	86,283	1,14,831	60,415
Dry	1,23,480	90,145	37,542	51,661	42,371
Milch	3,84,900	2,87,432	1,23,825	1,66,492	1,02,786
Not Calved Even Once	64,250	37,507	11,825	11,346	8,229
Others	4,100	3,994	6,921	3,495	4,178
Males	1,44,600	3,26,671	2,88,984	2,26,488	1,93,566
Total Buffaloes	57,64,012	61,70,676	59,94,535	50,61,554	51,59,724
Female	52,86,112	54,17,470	53,97,709	45,44,616	46,26,023
under 1 year	9,15,900	8,59,147	9,31,852	7,93,687	8,69,824
1 to 3 years	7,74,889	8,06,208	11,84,229	8,02,713	9,51,670
Over 3 years	35,95,323	37,52,115	32,81,628	29,48,216	28,04,529
In-milk	22,73,360	24,57,373	23,95,901	20,45,446	19,60,013
Dry	8,93,380	9,40,559	7,10,492	7,33,911	7,29,193
Milch	31,66,740	33,97,932	31,06,393	27,79,357	26,89,206
Not Calved Even Once	4,01,583	3,28,649	1,72,462	1,33,827	97,728
Others	27,000	25,534	2,773	35,032	17,595
Males	4,77,900	7,53,206	5,96,826	5,16,938	5,33,701

SOURCE: 15th, 16th, 17th, 18th and 19th Livestock Census, Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture, Govt. of India.



II.1. Animal Population

TABLE II.1.2: 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
PUNJAB	805	810	508	498	1,503	1,828	1,531	1,278	5,764	6,171	5,995	5,062
Amritsar	58	72	1	11	160	192	234	96	706	753	718	323
Barnala				22				17				164
Bathinda	71	87	54	50	55	45	63	56	234	229	319	275
Faridkot	80	33	20	16	148	53	37	32	462	166	147	125
Fatehgarh Sahib	27	5	6	6	65	72	45	49	226	176	169	167
Firozpur	116	134	73	69	51	127	93	125	560	614	455	407
Gurdaspur	69	28	23	26	147	184	166	119	415	445	384	286
Hoshiarpur	42	44	37	29	119	149	115	102	374	272	288	231
Jalandhar	25	33	6	0*	181	188	148	97	452	460	332	237
Kapurthala	11	4	2	2	70	83	66	51	160	180	171	141
Ludhiana	35	40	35	38	139	230	133	118	580	586	588	512
Mansa	56	50	49	38	43	36	21	19	197	265	281	230
Moga		38	15	28		49	75	66		227	267	249
Patiala	72	52	30	30	166	123	92	62	531	471	492	337
Rupnagar (Ropar)	19	20	18	8	29	53	39	28	233	260	253	155
Sangrur	126	123	100	75	132	131	83	52	634	781	773	505
SAS Nagar (Mohali)				10				17				148
SBS Nagar (Nawanshahr)		12	8	5		65	41	40		196	144	126
Muktsar		35	31	30		48	79	63		90	214	150
Tarn Taran				5				71				294

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

* Negligible.



II.1. Animal Population

TABLE II.1.3: 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
PUNJAB	661	483	219	272	1,132	1,430	1,257	1,077	5,286	5,417	5,398	4,545
Amritsar	52	51	1	9	129	139	201	87	614	657	639	293
Barnala				7				14				146
Bathinda	56	54	24	26	33	34	48	44	196	187	281	242
Faridkot	66	21	9	9	100	41	30	28	420	149	133	117
Fatehgarh Sahib	22	3	1	1	46	60	37	41	212	159	158	156
Firozpur	96	108	50	51	40	105	76	107	520	517	397	364
Gurdaspur	56	16	14	20	123	145	141	103	384	391	342	258
Hoshiarpur	35	22	15	16	104	115	95	82	354	238	261	204
Jalandhar	21	16	2	0*	162	147	130	84	416	395	301	212
Kapurthala	10	2	1	2	61	70	57	45	150	160	153	127
Ludhiana	28	16	6	14	123	188	105	100	547	527	544	477
Mansa	44	29	23	19	25	27	16	14	165	236	251	204
Moga		21	4	16		38	61	57		204	241	221
Patiala	59	33	13	19	110	95	72	50	497	414	445	303
Rupnagar (Ropar)	13	6	2	2	25	43	32	23	230	238	241	146
Sangrur	103	58	37	33	49	94	62	40	580	695	688	429
SAS Nagar (Mohali)				3				14				137
SBS Nagar (Nawanshahr)		4	1	3		51	33	32		174	133	114
Muktsar		22	17	18		39	63	52		76	190	136
Tarn Taran				4				59				258

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

* Negligible.



II.1. Animal Population

TABLE II.1.4: 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
PUNJAB	503	365	163	203	794	1,084	923	812	3,983	4,155	3,874	3,350
Amritsar	42	43	0.8	7	100	114	148	66	507	596	464	219
Barnala				5				11				102
Bathinda	40	39	18	19	22	23	34	32	154	147	190	170
Faridkot	50	15	6	7	74	28	21	20	313	109	88	83
Fatehgarh Sahib	17	2	0.8	0.8	33	44	27	32	156	118	116	119
Firozpur	72	79	37	37	23	75	56	78	378	378	282	264
Gurdaspur	43	13	10	15	88	108	101	78	297	299	250	197
Hoshiarpur	27	16	12	12	75	86	70	61	266	179	188	150
Jalandhar	15	11	1.6	0*	110	115	97	64	313	271	221	160
Kapurthala	7	2	0.6	1	42	55	41	34	104	126	111	96
Ludhiana	23	13	5	11	89	149	82	79	415	426	412	368
Mansa	32	23	17	13	17	21	11	10	129	168	168	144
Moga		16	3	12		28	44	43		153	174	160
Patiala	46	25	10	14	78	71	54	39	362	312	325	225
Rupnagar (Ropar)	10	4	1	1	18	32	24	18	176	180	183	110
Sangrur	80	43	28	25	25	66	45	30	414	497	477	306
SAS Nagar (Mohali)				2				11				105
SBS Nagar (Nawanshahr)		3	0.9	2		40	25	23		139	98	83
Muktsar		17	12	13		29	44	38		57	128	95
Tarn Taran				3				45				195

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

* Negligible.





II.1. Animal Population

TABLE II.1.5: 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
PUNJAB	261	197	86	115	408	631	567	513	2,273	2,457	2,396	2,045
Amritsar	26	24	0.5	4	59	67	88	41	312	386	276	133
Barnala				3				7				59
Bathinda	21	21	10	11	12	12	22	19	96	92	117	101
Faridkot	24	7	3	4	36	13	12	12	154	56	50	48
Fatehgarh Sahib	9	1	0.3	0.6	17	25	17	20	88	72	73	65
Firozpur	38	47	19	21	2	45	30	46	187	221	160	146
Gurdaspur	23	7	5	10	48	60	60	48	167	171	152	122
Hoshiarpur	15	9	6	7	38	52	43	39	146	100	115	91
Jalandhar	8	6	1	0*	62	67	62	41	207	155	143	99
Kapurthala	3	1	0.4	0.7	23	29	26	21	60	64	70	57
Ludhiana	11	7	2	6	48	102	54	52	254	287	270	241
Mansa	17	10	9	8	9	9	7	6	80	84	102	82
Moga		8	2	5		13	24	27		76	99	94
Patiala	24	14	6	8	41	43	35	25	200	188	205	149
Rupnagar (Ropar)	5	2	1	1	10	21	16	12	100	116	122	68
Sangrur	37	23	14	13	3	38	29	20	223	282	304	193
SAS Nagar (Mohali)				2				7				70
SBS Nagar (Nawanshahr)		2	0.4	1		21	16	14		79	63	50
Muktsar		9	7	8		15	26	24		29	75	56
Tarn Taran				2				29				122

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

* Negligible.



II.1. Animal Population

TABLE II.1.6: 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
PUNJAB	385	287	124	166	594	866	741	683	3,167	3,398	3,106	2,779
Amritsar	35	34	0.7	6	83	90	119	55	433	519	373	182
Barnala				5				9				83
Bathinda	31	30	14	15	16	17	27	26	134	130	149	137
Faridkot	39	12	5	5	57	21	16	17	251	87	66	66
Fatehgarh Sahib	13	1	0.6	1	24	36	22	27	116	99	95	93
Firozpur	57	63	27	30	14	59	42	63	273	296	213	208
Gurdaspur	36	11	9	13	70	86	81	66	249	248	205	167
Hoshiarpur	22	13	9	10	55	71	56	53	202	144	152	127
Jalandhar	11	9	1	0*	83	90	79	54	276	211	183	135
Kapurthala	5	2	0.5	1	33	43	34	29	87	102	91	82
Ludhiana	18	10	3	9	66	128	68	69	328	367	348	324
Mansa	24	17	13	11	13	16	9	8	112	128	127	110
Moga		12	2	10		20	35	36		126	135	129
Patiala	34	20	8	11	57	58	45	33	267	250	267	192
Rupnagar (Ropar)	8	3	1	1	13	26	19	15	134	149	152	93
Sangrur	53	33	20	20	12	51	36	26	304	385	379	256
SAS Nagar (Mohali)				2				9				92
SBS Nagar (Nawanshahr)		3	0.6	2		30	20	19		111	78	68
Muktsar		14	9	11		24	33	32		45	93	77
Tarn Taran				3				37				159

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

* Negligible.



II.1. Animal Population

TABLE II.1.7: 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
PUNJAB	145	327	289	226	371	398	274	202	478	753	597	517
Amritsar	6	21	0.1	1	31	53	33	9	92	96	79	30
Barnala				15				3				18
Bathinda	15	32	30	24	23	11	15	12	38	42	39	33
Faridkot	14	12	11	7	48	12	7	4	42	17	14	8
Fatehgarh Sahib	5	3	5	4	19	12	8	8	14	17	11	11
Firozpur	20	26	23	18	11	22	18	18	40	96	58	43
Gurdaspur	13	12	10	6	24	39	26	15	31	54	41	28
Hoshiarpur	7	21	22	13	15	34	21	20	20	34	27	27
Jalandhar	4	18	4	0*	19	41	18	13	36	65	31	25
Kapurthala	1	1	1	0.3	8	13	9	6	9	20	19	14
Ludhiana	7	24	29	24	16	42	28	18	33	59	44	35
Mansa	12	21	27	19	18	9	6	4	32	29	30	26
Moga		16	11	12		11	13	9		23	26	27
Patiala	12	19	17	12	56	28	20	12	34	57	48	34
Rupnagar (Ropar)	6	14	16	6	4	11	8	4	3	22	11	9
Sangrur	23	65	63	41	83	37	22	13	54	87	84	75
SAS Nagar (Mohali)				6				4				11
SBS Nagar (Nawanshahr)		8	7	2		14	8	8		22	11	12
Muktsar		13	14	11		9	16	10		15	24	14
Tarn Taran				1				13				36

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

* Negligible.



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
PUNJAB	18	40	57	45	25	22	18	16	8	12	10	10
Amritsar	10	29	9	10	19	28	14	9	13	13	11	9
Barnala				68				18				11
Bathinda	21	37	56	48	41	24	24	21	16	18	12	12
Faridkot	18	36	55	44	32	23	19	13	9	10	10	6
Fatehgarh Sahib	19	50	83	80	29	17	18	16	6	10	7	7
Firozpur	17	19	32	26	22	17	19	14	7	16	13	11
Gurdaspur	19	43	42	23	16	21	16	13	7	12	11	10
Hoshiarpur	17	49	59	45	13	23	18	20	5	13	9	12
Jalandhar	16	53	67		10	22	12	13	8	14	9	11
Kapurthala	9	33	50	15	12	16	14	12	6	11	11	10
Ludhiana	20	60	83	63	12	18	21	15	6	10	7	7
Mansa	21	42	54	50	42	25	27	22	16	11	11	11
Moga		43	73	43		22	18	14		10	10	11
Patiala	17	37	57	39	34	23	22	19	6	12	10	10
Rupnagar (Ropar)	32	70	89	75	14	20	20	15	1	8	4	6
Sangrur	18	53	63	55	63	28	26	25	9	11	11	15
SAS Nagar (Mohali)				67				22				7
SBS Nagar (Nawanshahr)		67	88	40		22	20	20		11	8	10
Muktsar		37	45	38		19	20	16		16	11	9
Tarn Taran				20				18				12

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
PUNJAB	68	69	69	69	69	73	77	75	72	72	77	74
Amritsar	74	71	72	71	71	74	74	75	72	74	74	73
Barnala				66				78				71
Bathinda	68	70	71	73	75	71	81	73	72	71	79	74
Faridkot	62	58	68	73	63	62	75	71	61	64	76	73
Fatehgarh Sahib	69	57	57	80	71	69	77	74	76	73	77	70
Firozpur	67	75	70	70	18	76	71	73	68	75	75	70
Gurdaspur	64	64	60	77	69	70	74	73	67	69	74	73
Hoshiarpur	68	65	64	66	69	73	77	74	72	69	76	72
Jalandhar	67	69	69		75	74	78	76	75	73	78	73
Kapurthala	65	70	72	68	70	67	76	72	69	63	77	70
Ludhiana	64	72	65	67	73	80	79	75	77	78	78	74
Mansa	71	59	69	73	69	56	78	75	71	66	80	75
Moga		61	72	54		65	69	75		60	73	73
Patiala	71	70	71	73	72	74	78	76	75	75	77	78
Rupnagar (Ropar)	64	74	73	80	77	81	84	80	75	78	80	73
Sangrur	70	70	70	65	25	75	81	77	73	73	80	75
SAS Nagar (Mohali)				76				78				76
SBS Nagar (Nawanshahr)		71	68	77		70	80	74		71	81	74
Muktsar		64	78	73		63	79	75		64	81	73
Tarn Taran				74				78				77

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 Density

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

Districts	Livestock (No. per sq km)				Bovine (No. per sq km)			
	1992	1997	2003	2007	1992	1997	2003	2007
PUNJAB	160	195	171	147	160	175	160	136
Amritsar	182	220	196	169	182	199	187	161
Barnala				147				138
Bathinda	106	153	148	136	106	106	129	114
Faridkot	187	212	156	132	187	171	139	118
Fatehgarh Sahib	269	225	192	196	270	215	187	188
Firozpur	143	178	131	130	143	165	118	113
Gurdaspur	177	197	169	127	177	184	161	121
Hoshiarpur	134	145	136	112	134	138	130	106
Jalandhar	201	284	194	134	201	258	185	128
Kapurthala	147	167	152	123	147	163	146	119
Ludhiana	200	244	208	195	200	228	201	186
Mansa	136	210	181	148	137	162	162	130
Moga		158	173	162		142	161	153
Patiala	163	195	181	139	164	178	169	129
Rupnagar (Ropar)	62	174	158	146	62	162	151	140
Sangrur		221	201	186	178	206	190	174
SAS Nagar (Mohali)				176				160
SBS Nagar (Nawanshahr)		235	158	138		215	152	134
Muktsar		99	151	113		66	124	94
Tarn Taran				166				154

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 Density

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

Districts	Poultry (No. per Sq km)			Small Ruminants (No. Per Sq km)		
	1997	2003	2007	1997	2003	2007
PUNJAB	219	215	212	17	10	10
Amritsar	221	77	86	15	7	7
Barnala			73			8
Bathinda	93	121	85	39	17	20
Faridkot	188	277	74	39	15	12
Fatehgarh Sahib	438	460		8	5	7
Firozpur	23	24	18	11	12	16
Gurdaspur	389	315	1,014	9	6	4
Hoshiarpur	161	121	156	6	5	5
Jalandhar	377	393	44	20	8	5
Kapurthala	121	102	190	4	5	2
Ludhiana	681	426	878	11	6	6
Mansa	42	85	4	40	17	17
Moga	33	72		14	11	7
Patiala	298	375	217	13	10	8
Rupnagar (Ropar)	190	122		11	5	4
Sangrur	130	369	138	14	9	10
SAS Nagar (Mohali)						12
SBS Nagar (Nawanshahr)	102	150		17	5	3
Muktsar	210	217	157	31	24	18
Tarn Taran			214			11

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. Breed-wise Population

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

Districts	Indigenous Cattle ('000)			
	Sahiwal	Hariana	Non-descript and Other Graded	Total indigenous Cattle
PUNJAB	42.1	202.0	254.4	498.5
Amritsar	2.7	0	8	10.7
Barnala	0.2	17	5	22.2
Bathinda	4.1	32.7	13.4	50.2
Faridkot	1.9	8.4	5.6	15.9
Fatehgarh Sahib	0.6	4.1	0.9	5.5
Firozpur	9.1	10.4	49.8	69.3
Gurdaspur	3.7	1.6	21.1	26.3
Hoshiarpur	0	0	28.6	28.6
Jalandhar	0	0	0*	0*
Kapurthala	0.7	0.2	1.3	2.2
Ludhiana	4.6	18.4	15	38.1
Mansa	1.7	23.2	13	37.9
Moga	2.4	9.7	15.7	27.8
Patiala	0	0	30.5	30.5
Rupnagar (Ropar)	0.7	4.8	2.8	8.3
Sangrur	2.5	51.6	20.7	74.8
SAS Nagar (Mohali)	0.4	4.5	5.3	10.2
SBS Nagar (Nawanshahr)	0	0	5	5
Muktsar	5.2	15.5	9.5	30.2
Tarn Taran	1.6	0	3.3	4.9

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

* Negligible.



II.5. Breed-wise Population

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

Districts	Sahiwal ('000)			Hariana ('000)		
	Male	Female	Milch	Male	Female	Milch
PUNJAB	12.6	36.5	22.5	123.1	98.8	60.5
Amritsar	0.4	2.2	1.3	0	0	0
Barnala	0*	0.2	0.2	12.2	7.2	4.7
Bathinda	1.4	3	1.8	17.9	16.2	9.6
Faridkot	0.3	1.5	0.9	4.3	4.2	2.6
Fatehgarh Sahib	0*	0.2	0.1	3.5	0.3	0.2
Firozpur	2	7.9	4.3	3.2	7.3	4.3
Gurdaspur	0.6	3.5	2.2	0.2	1	0.6
Hoshiarpur	0	0	0	0	0	0
Jalandhar	0.3	1.6	1	0*	0	0
Kapurthala	0*	0.6	0.3	0.1	0*	0*
Ludhiana	0.9	3.7	2.5	13.8	4.7	2.9
Mansa	0.7	1.4	0.8	13.1	12.2	7.1
Moga	0.8	1.3	1.1	5.3	4.2	2.3
Patiala	0.4	1.3	0.8	6.2	8.6	4.9
Rupnagar (Ropar)	0.3	0.3	0.2	3.6	0.5	0.3
Sangrur	3.1	1.5	0.9	29.2	19	11.3
SAS Nagar (Mohali)	0.1	0.3	0.2	3.4	1	0.7
SBS Nagar (Nawanshahr)	0*	0*	0*	0.3	0.2	0.1
Muktsar	0.8	4.7	2.8	6.8	12.2	8.7
Tarn Taran	0.3	1.3	0.9	0	0	0

SOURCE: 18th Livestock Census, Department of Animal Husbandry, Govt. of Punjab (<http://husbandrypunjab.org/pages/livestock.htm>) Accessed on 9th January, 2014.

* Negligible.



II.5. Breed-wise Population

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

Districts	Exotic and Crossbred Cattle ('000)			
	Jersey exotic and crossbred	Holstein Friesian exotic and crossbred	Other exotic and crossbred	Total exotic and crossbred cattle
PUNJAB	176.4	946.0	156.1	1,278.4
Amritsar	21.1	58.3	16.5	95.8
Barnala	0*	16.3	0.7	17.1
Bathinda	2.5	50.2	2.9	55.5
Faridkot	2.7	24.6	4.3	31.5
Fatehgarh Sahib	3.8	40.9	3.9	48.7
Firozpur	9.7	79.7	35.2	124.6
Gurdaspur	37.4	56.1	25.2	118.7
Hoshiarpur	32.1	69.6	0.2	101.9
Jalandhar	18.9	68.2	9.7	96.7
Kapurthala	7.3	41.6	2.5	51.4
Ludhiana	5.1	96	17.3	118.3
Mansa	0.7	15.9	2.1	18.7
Moga	3.2	57.1	5.8	66.2
Patiala	5.1	49.7	7.5	62.4
Rupnagar (Ropar)	6.5	15.3	5.8	27.6
Sangrur	1.5	47.2	3.5	52.1
SAS Nagar (Mohali)	3.5	12.1	1.8	17.4
SBS Nagar (Nawanshahr)	0.8	36.3	2.8	39.9
Muktsar	4	55.3	3.2	62.5
Tarn Taran	10.4	55.6	5.4	71.4

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





II.5. Breed-wise Population

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

Districts	Jersey Crossbred ('000)			Holstein Friesian Crossbred ('000)		
	Male	Female	Milch	Male	Female	Milch
PUNJAB	26.2	137.6	86.6	145.3	795.7	506.9
Amritsar	1.9	17	10.5	4.8	50	31.6
Barnala	0*	0.2	0.1	3	15	9.5
Bathinda	0.6	2	1.2	9.9	38.4	23
Faridkot	0.2	1.4	0.9	2.8	22.3	13.8
Fatehgarh Sahib	0.2	1.6	1.1	5.4	27.5	18
Firozpur	1.4	5.8	3.3	10.6	60.3	36.4
Gurdaspur	5.1	33.3	21.3	7.2	47.5	30.4
Hoshiarpur	5.9	25	15.7	13.8	55.8	35.7
Jalandhar	1.3	6.7	3.8	12.3	86.7	56.5
Kapurthala	1	6.5	4.3	5.1	36.6	23.4
Ludhiana	0.5	4.1	3.1	14.2	79.7	53.8
Mansa	0.2	0.7	0.4	3.1	12	7.1
Moga	0.4	2.7	1.7	7.3	49.2	31.1
Patiala	1.3	3.9	2.4	9.1	39	25.9
Rupnagar (Ropar)	1.2	6.5	4.2	2.4	14.6	9.2
Sangrur	0.4	1	0.7	9.6	34.5	23.5
SAS Nagar (Mohali)	1	2.7	1.9	1.9	9.8	6.6
SBS Nagar (Nawanshahr)	0.3	1.2	0.9	6	30.1	18.2
Muktsar	0.7	3.4	1.9	8.7	46	27.8
Tarn Taran	2.6	12	7.4	8.1	40.5	25.4

SOURCE: 18th Livestock Census, Department of Animal Husbandry, Govt. of Punjab (<http://husbandrypunjab.org/pages/livestock.htm>) Accessed on 9th January, 2014.



II.5. Breed-wise Population

TABLE II.5.5: District-wise Male, Female and Milch Animals of Exotic and Other Crossbreds – 2007

Districts	Exotic ('000)			Others Crossbred ('000)		
	Male	Female	Milch	Male	Female	Milch
PUNJAB	1.8	8.1	5.1	23.4	120.1	76.4
Amritsar	0	0	0	1.2	13	7.9
Barnala	0*	0.2	0.1	0.1	1	0.7
Bathinda	0.2	0.8	0.4	0.7	1.8	1.2
Faridkot	0*	0.5	0.3	0.9	3.4	1.9
Fatehgarh Sahib	0	0	0	0.5	2.9	2
Firozpur	0.5	2	1.1	5.6	34	20.8
Gurdaspur	0	0	0	2.5	20.6	12.9
Hoshiarpur	0	0	0	0	0	0
Jalandhar	0*	0*	0*	0.6	3.2	2.1
Kapurthala	0*	0.2	0.1	0.3	2.1	1.4
Ludhiana	0*	0.3	0.2	2.5	14.6	11.1
Mansa	0.2	0.5	0.3	0.4	1.4	0.8
Moga	0.1	0.5	0.3	1.3	4.1	2.5
Patiala	0.2	1.6	1	1.5	5.9	3.6
Rupnagar (Ropar)	0*	0.3	0.2	0.7	1.9	1
Sangrur	0.4	0.7	0.5	1.1	1.9	1.2
SAS Nagar (Mohali)	0*	0.4	0.3	0.5	1.1	0.7
SBS Nagar (Nawanshahr)	0	0	0	0.3	0.4	0.1
Muktsar	0	0*	0*	0.8	2.6	1.7
Tarn Taran	0	0	0	1.8	4.5	2.8

SOURCE: 18th Livestock Census, Department of Animal Husbandry, Govt. of Punjab (<http://husbandrypunjab.org/pages/livestock.htm>) Accessed on 9th January, 2014.

*Negligible.



II.5. Breed-wise Population

TABLE II.5.6: District and Breed-wise Buffalo Population – 2007

Districts	Buffalo Breed Population ('000)				
	Murrah	Nili Ravi	Graded Buffalo	Non-descript	Total Buffalo
PUNJAB	990.0	384.0	3,208.9	478.2	5,061.1
Amritsar	48.8	27.4	238.7	7.6	322.5
Barnala	22.2	3.4	138.6	0*	164.3
Bathinda	101.4	11.3	158.8	3.7	275.2
Faridkot	46.9	4.8	71.1	2.3	125.1
Fatehgarh Sahib	31.1	6.4	127.3	2.2	167
Firozpur	75.9	84.5	236.9	9.6	406.9
Gurdaspur	45.2	36.5	189.1	15.6	286.4
Hoshiarpur	22.2	28.6	0	179.8	230.6
Jalandhar	56.7	26.4	148.9	5	237
Kapurthala	9.8	6.8	123.4	1.4	141.4
Ludhiana	125.6	14.2	367	5.4	512.2
Mansa	53.1	3	171.7	2.6	230.4
Moga	20.9	5.2	214.3	8.4	248.8
Patiala	92.8	23.7	198.8	21.2	336.5
Rupnagar (Ropar)	30.6	20.6	83.2	20.2	154.6
Sangrur	111	35.2	313.8	44.6	504.6
SAS Nagar (Mohali)	27.7	11.8	99.8	8.9	148.2
SBS Nagar (Nawanshahr)	3.4	3.7	0.6	118.2	125.9
Muktsar	38.7	9	100	2.8	150.5
Tarn Taran	26.6	21.5	227.1	18.7	293.9

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



II.5. Breed-wise Population

TABLE II.5.7: District-wise Male, Female and Milch Animals of Murrah and Nili Ravi Breeds – 2007

Districts	Murrah ('000)			Nili Ravi ('000)		
	Male	Female	Milch	Male	Female	Milch
PUNJAB	93.1	870.1	529.6	37.8	309.3	189
Amritsar	3.8	41.2	25.3	2.2	20.3	12.5
Barnala	2.5	21.8	12.6	0.4	3.3	2
Bathinda	13.6	87.9	48.8	1.7	9.8	5.9
Faridkot	3.1	46.2	26.2	0.4	5.1	2.9
Fatehgarh Sahib	2.4	25.3	15.5	0.3	5.3	3.4
Firozpur	8.4	64.6	35.7	7.1	49.3	25.7
Gurdaspur	5	40.3	25.7	4.3	33.4	21.4
Hoshiarpur	2.9	20.3	12.8	3.1	26.1	16.2
Jalandhar	4	35.5	21.8	1.7	14.2	9.1
Kapurthala	0.6	9.1	5.9	0.6	6.4	4.2
Ludhiana	8.1	116.1	83.5	0.9	13.1	10
Mansa	5.7	46.9	25.8	0.5	3.4	2
Moga	2.6	19.3	11.2	0.6	4.4	2.6
Patiala	10.1	83.1	52.4	2.9	21	13.1
Rupnagar (Ropar)	1.8	27.8	17.9	1.5	20.2	12.9
Sangrur	9.9	98.9	57.8	4.1	30.8	18
SAS Nagar (Mohali)	1.8	26	17.7	0.7	11.1	7.9
SBS Nagar (Nawanshahr)	0	0	0	0	0	0
Muktsar	3	34.1	18.8	0.8	7.9	4.4
Tarn Taran	3.7	25.7	14.3	4	24.2	15.1

SOURCE: 18th Livestock Census, Department of Animal Husbandry, Govt. of Punjab (<http://husbandrypunjab.org/pages/livestock.htm>) Accessed on 9th January, 2014.

PART III : CATTLE AND BUFFALO BREEDS

This section provides a brief profile of important descript breeds that are native of Punjab.

Out of the recognised cattle breeds in India, two breeds “Sahiwal” and “Hariana” have their native tracts and have significant presence in Punjab. While both are popular for their milk production, “Sahiwal” is considered as one of the best milch cattle breed in the country. “Sahiwal” breed is concentrated in western Punjab viz. Firozpur, Gurdaspur, Ludhiana and Muktsar; whereas “Hariana” cattle breed is available in Sangrur, Bathinda, Mansa and Ludhiana region.

There are large numbers of farmers who maintain exotic and crossbred animals in commercial dairy farms.

Out of the 12 recognised buffalo breeds in India, two breeds “Murrah” and “Nili Ravi” have their native tracts in Punjab. They are distributed across the state and are known for high productivity in the country.





III.1. Distribution of Native Breeds of Punjab

TABLE III.1.1: Distribution of Cattle Breeds of Punjab

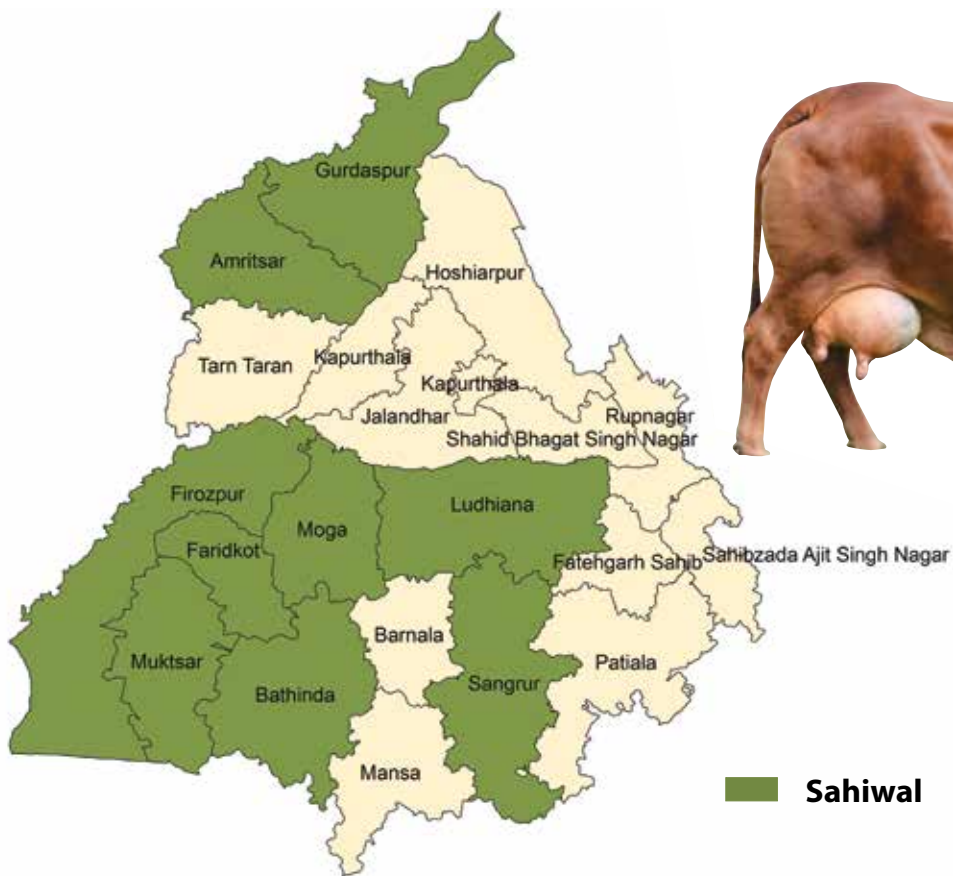
Breed	Breeding Tract	Utility	Distribution
Sahiwal	Sahiwal district of Pakistan	Milch	Mainly found in Firozpur, Muktsar, Ludhiana, Bathinda, Gurdaspur, Amritsar, Sangrur and Moga districts. Scattered distribution in rest of the districts.
Hariana	Rohtak, Hisar, Jind and Gurgaon districts of Haryana	Dual	Mainly found in Sangrur, Bathinda, Mansa, Ludhiana, Barnala and Muktsar. Scattered Distribution across other districts.

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

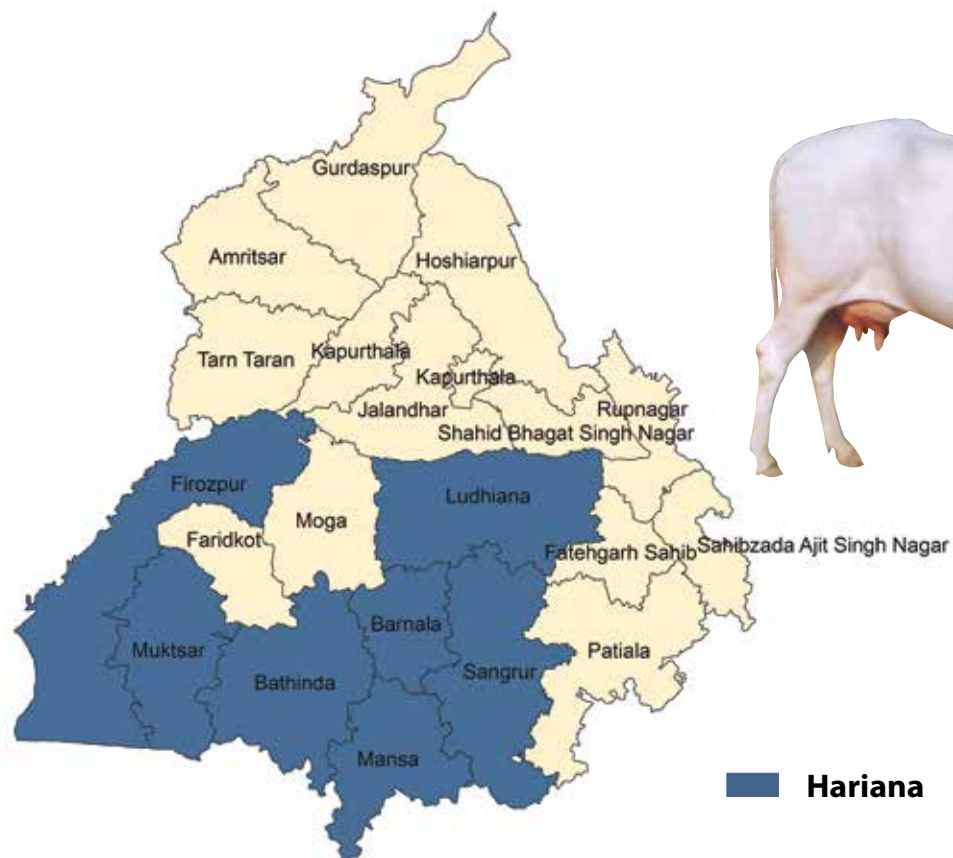




Distribution of Indigenous Cattle Breeds



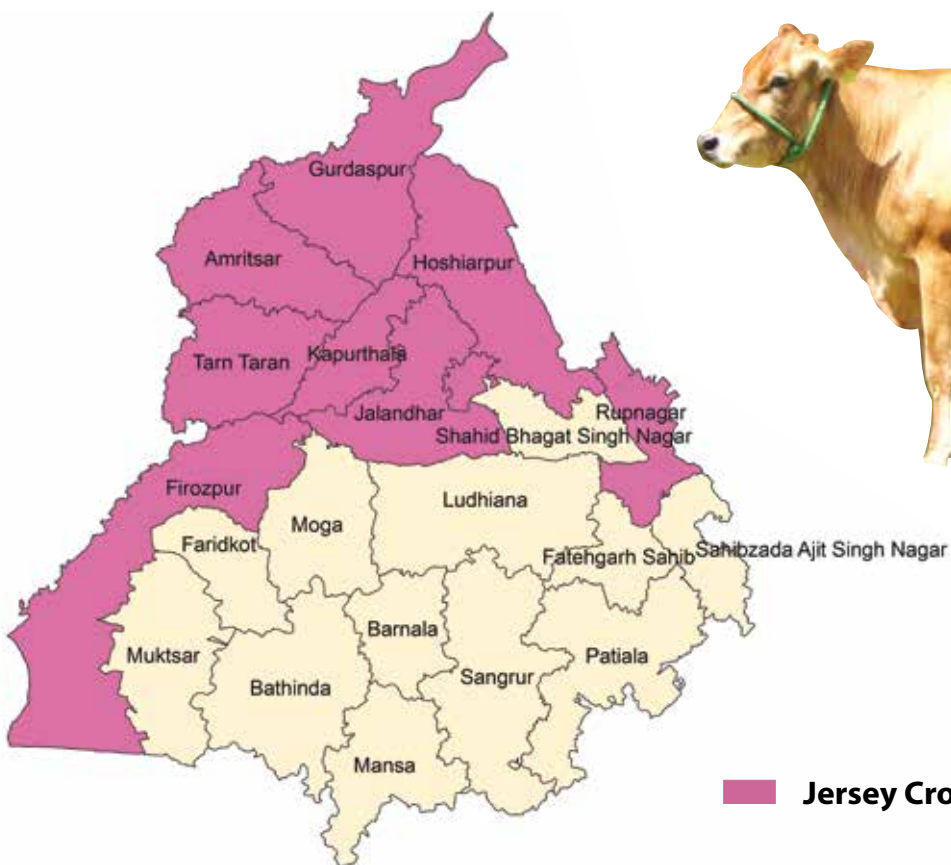
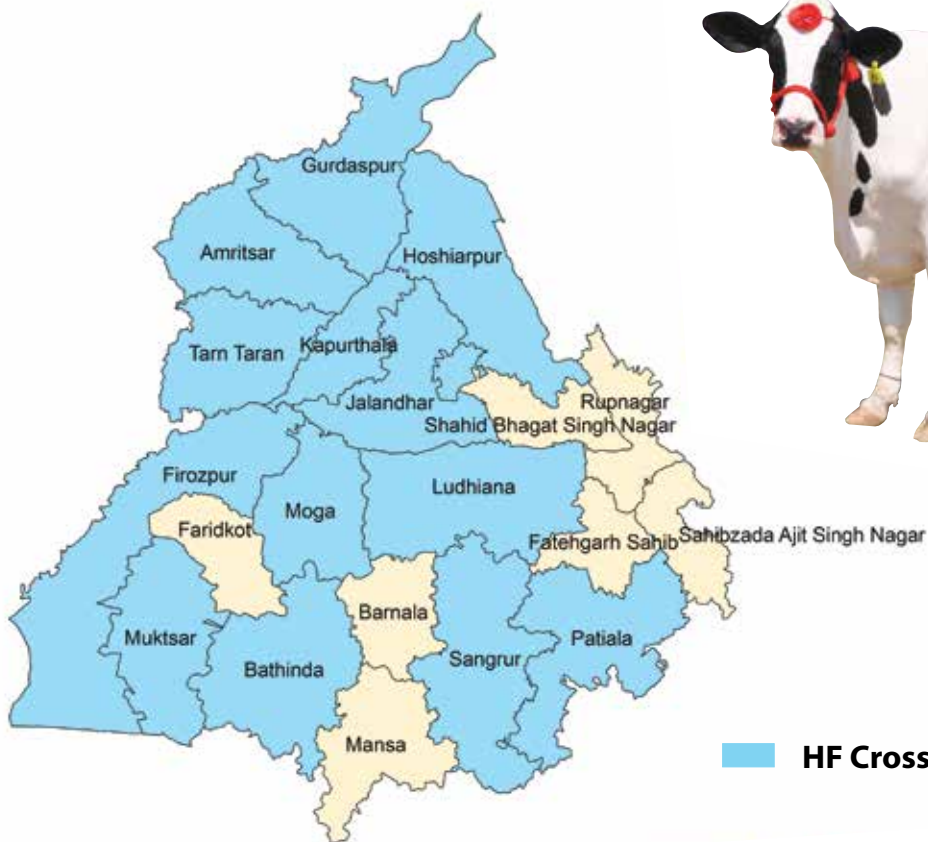
Sahiwal



Haryana



Distribution of Crossbred Cattle Breeds





III.1. Distribution of Native Breeds of Punjab

TABLE III.1.2: Distribution of Buffalo Breeds of Punjab

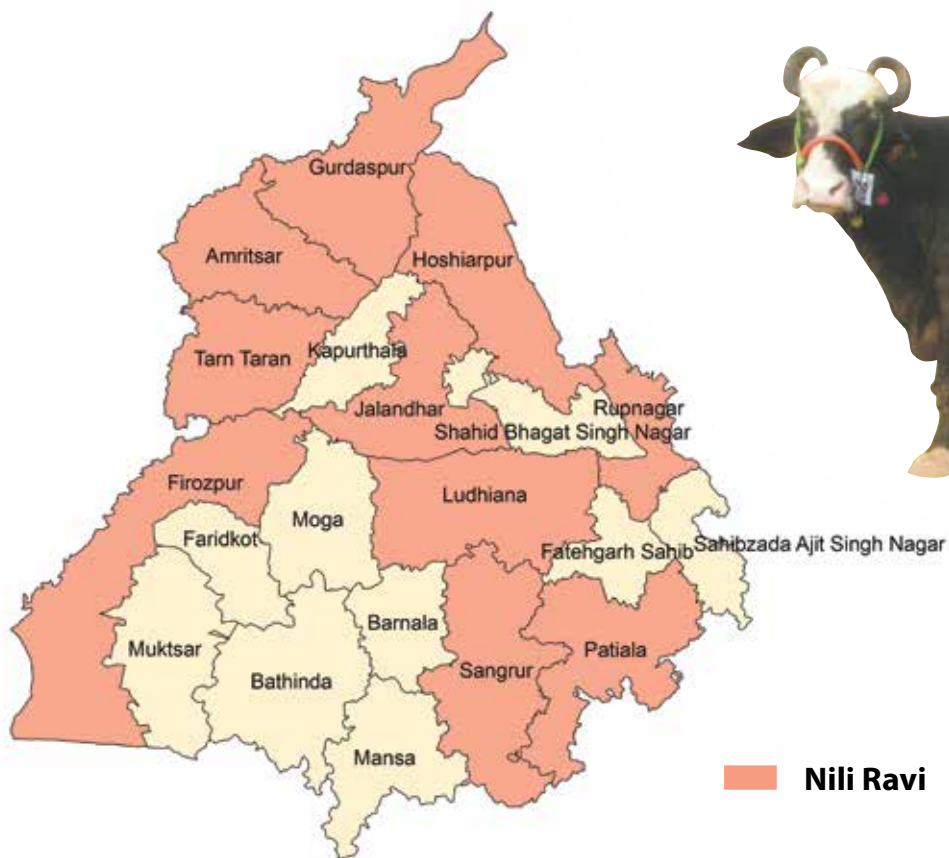
Breeds	Breeding Tract	Utility	Distribution
Murrah	Southern part of Haryana-Rohtak, Jind, Hisar and Gurgaon districts	Milch	Across all districts of Punjab.
Nili Ravi	All along Sutlej river on Indo-Pak border	Milch	Largely found in Firozpur, Gurdaspur, Sangrur, Hoshiarpur, Amritsar, Jalandhar, Patiala, Tarn Taran, Rupnagar, Ludhiana; scattered distribution in all other districts.

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





Distribution of Buffalo Breeds





III.2. Performance of Breeds

TABLE III.2.1: Performance of Cattle and Buffalo Breeds

Parameters	Cattle			
	Haryana	Sahiwal	Jersey Crossbred	HF Crossbred
Breed population ('000)	202	42	176.4	946
Colour	White/Light Grey	Reddish dun/ Pale red, brown with white spots	Light grey to brown	Black and White
Body Weight (kg)	Female: 325 Male: 499	Female: 298 Male: 540		
Average Daily milk yield (kg)	3.66	7.31	8.16	14.00
Lactation Production (kg)	693-1,754 (Average: 996)	1,600-2,750 (Average: 2,325)	1,722-3,476	3,926-4,568
Lactation length (days)	238-330 (Average: 272)	285-375 (Average: 318)	325-357	312-349
Age at First Calving (days)	1,067-1,809 (Average: 1,566)	940-1,520 (Average: 1,183)	900-1,260	1,320-1,680
Calving Interval (days)	415-561 (Average: 482)	390-550 (Average: 450)		
Fat (%)	4.5	4.93		

Parameters	Buffalo	
	Nili Ravi	Murrah
Breed population ('000)	384	990
Colour	Black brown with white marking on forehead, face, muzzle, legs and tails	Jet Black
Body Weight (kg)	Female: 454 Male: 567	Female: 516 Male: 567
Average Daily milk yield (kg)	6.3	5.85
Lactation Production (kg)	1,586-1,929 (Average: 1,850)	1,003-2,057 (Average: 1,751)
Lactation length (days)	263-316 (Average: 294)	269-337 (Average: 299)
Age at First Calving (days)	1,216-1,617 (Average: 1,359)	1,214-1,647 (Average: 1,319)
Calving Interval (days)	313-945 (Average: 487)	430-604 (Average: 453)
Fat (%)	6.8	7.34

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

Annual Administrative Report 2009-10, Department of Animal Husbandry, Govt. of Punjab.

NOTE: Jersey and HF Crossbred population includes exotic animal population.



PART IV : MILK PRODUCTION

This section contains district wise information on milk production, in-milk animals and productivity. The chapter also includes information on milk production density, per capita availability and milk utilisation pattern.

Milk production in Punjab has doubled during the last two decades from around 5.3 million tonnes in 1992-93 to 9.7 million tonnes in 2012-13 which is around 7.3 per cent of the country's milk production. Production increased at an annual average rate of 3 per cent during this period. The share of buffaloes, crossbred cattle and indigenous cattle to total milk production was 73, 23 and 4 per cent respectively in 1993-94, which changed to 68, 29 and 3 per cent respectively in 2012-13.

Bovine productivity is the highest in Punjab. It has increased at annual rate of 2.2 per cent during the last two decades. Milk yield of crossbred cattle was about 11.0 kg/day, buffalo 8.6 kg/day and indigenous cattle 6.5 kg/day in 2012-13.

The per capita availability of milk in the state was highest in the country. Within the state, per capita milk availability was highest in Tarn Taran district, followed by Fatehgarh Sahib, Sangrur and Moga districts. Punjab dairy farmers sell about 55 per cent of milk produced while rest is kept for home consumption and conversion into dairy products.





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

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

Year	In-milk Bovine (<i>'000</i>)	Milk Yield (<i>kg</i>)	Bovine Milk Production (<i>'000 MT</i>)
1990-91	2,713	5.134	5,084
1991-92	2,696	5.427	5,340
1992-93	2,603	5.829	5,538
1993-94	2,782	5.836	5,926
1995-96	2,865	6.098	6,377
1996-97	3,116	5.895	6,705
1997-98	3,004	6.479	7,104
1998-99	3,069	6.548	7,335
1999-00	3,183	6.597	7,664
2000-01	3,112	6.806	7,731
2001-02	3,194	6.764	7,885
2002-03	3,249	6.868	8,145
2003-04	3,283	6.946	8,323
2004 -05	3,301	7.069	8,517
2005-06	3,294	7.378	8,871
2006-07	3,345	7.483	9,136
2007-08	3,177	7.981	9,255
2008-09	2,886	8.875	9,349
2009-10	2,882	8.908	9,371
2010-11	2,834	9.046	9,357
2011-12	2,852	9.117	9,491
2012-13	2,905	9.116	9,666

SOURCE: Integrated Sample Survey Reports (1990-91 to 2012-13), Animal Husbandry Department, Govt. of Punjab.



IV.1. ISS Figures: Animal Population

TABLE IV.1.2: Year and District-wise In-milk Bovine Population

Districts	In-milk Bovine Population ('000)								
	1993-94	1997-98	2003-04	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PUNJAB	2,783	3,004	3,283	3,177	2,886	2,883	2,834	2,852	2,905
Amritsar	361	394	467	226	242	243	238	203	219
Barnala				86	63	64	63	79	76
Bathinda	115	173	120	139	103	105	104	136	129
Faridkot	226	74	92	82	80	80	79	75	76
Fatehgarh Sahib	105	107	106	94	93	93	91	86	91
Firozpur	254	220	287	264	248	248	240	245	248
Gurdaspur	224	254	253	225	230	230	228	202	212
Hoshiarpur	185	191	168	167	156	155	150	153	154
Jalandhar	245	156	161	178	151	150	143	157	154
Kapurthala	85	77	129	109	114	114	111	94	101
Ludhiana	270	312	374	351	335	333	325	291	303
Mansa	96	101	117	111	100	101	100	111	107
Moga		84	129	141	112	113	113	131	132
Patiala	245	341	250	205	189	190	187	180	185
Rupnagar (Ropar)	105	85	132	82	54	53	54	70	70
Sangrur	267	291	337	258	226	228	225	243	236
SAS Nagar (Mohali)				94	89	89	88	77	80
SBS Nagar (Nawanshahr)		99	106	90	92	92	89	78	84
Muktsar		47	57	88	57	58	57	88	83
Tarn Taran				191	153	153	151	155	161

SOURCE: Integrated Sample Survey Reports (1993-94 to 2012-13), Animal Husbandry Department, Govt. of Punjab.





IV.1. ISS Figures: Animal Population

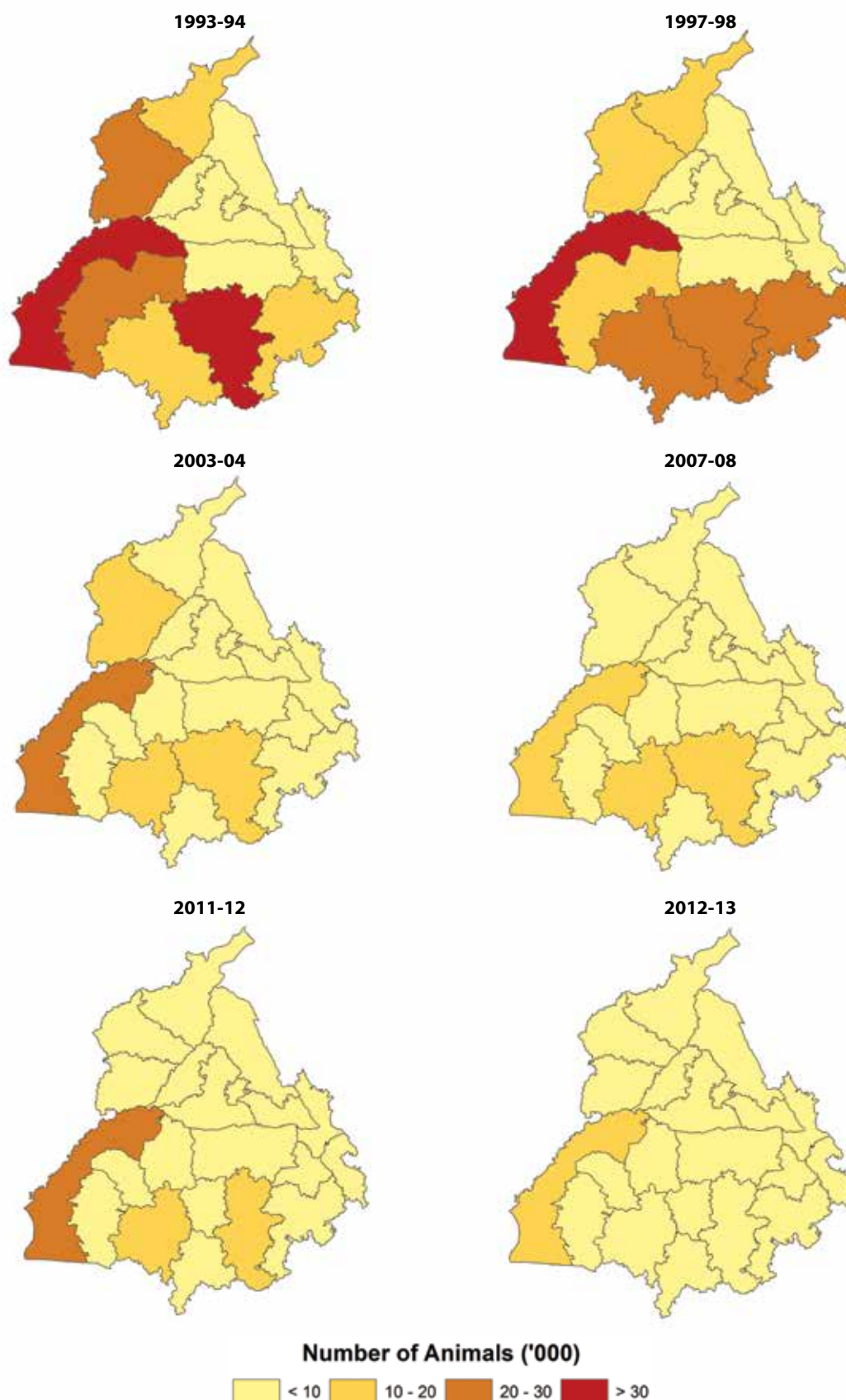
TABLE IV.1.3: Year and District-wise In-milk Indigenous Cattle Population

Districts	In-milk Indigenous Cattle Population ('000)								
	1993-94	1997-98	2003-04	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PUNJAB	207	233	103	111	119	133	137	140	128
Amritsar	24	19	12	6	5	6	7	8	8
Barnala				4	4	5	5	5	4
Bathinda	18	22	11	11	11	13	13	11	8
Faridkot	21	11	4	4	4	4	4	5	4
Fatehgarh Sahib	8	6	0.5	0.5	0.5	0.5	1	1	2
Firozpur	34	47	22	20	20	22	25	23	18
Gurdaspur	17	17	4	7	9	10	10	10	10
Hoshiarpur	3	7	5	6	7	7	7	6	7
Jalandhar	1	5	3	3	3	3	3	3	5
Kapurthala	3	2	0.6	1	0.5	0.5	0.7	2	3
Ludhiana	8	9	4	5	6	7	7	8	9
Mansa	15	14	6	7	7	8	8	8	5
Moga		8	4	6	6	7	8	6	6
Patiala	19	22	7	7	8	9	8	9	7
Rupnagar (Ropar)	4	6	1	1	1	1	1	2	2
Sangrur	33	27	12	11	12	14	13	15	10
SAS Nagar (Mohali)				2	2	2	2	2	2
SBS Nagar (Nawanshahr)		2	1	1	0.4	0.4	0.5	3	3
Muktsar		8	5	8	10	11	11	9	8
Tarn Taran				4	4	4	5	4	5

SOURCE: Integrated Sample Survey Reports (1993-94 to 2012-13), Animal Husbandry Department, Govt. of Punjab.



District-wise In-Milk Indigenous Cattle Population





IV.1. ISS Figures: Animal Population

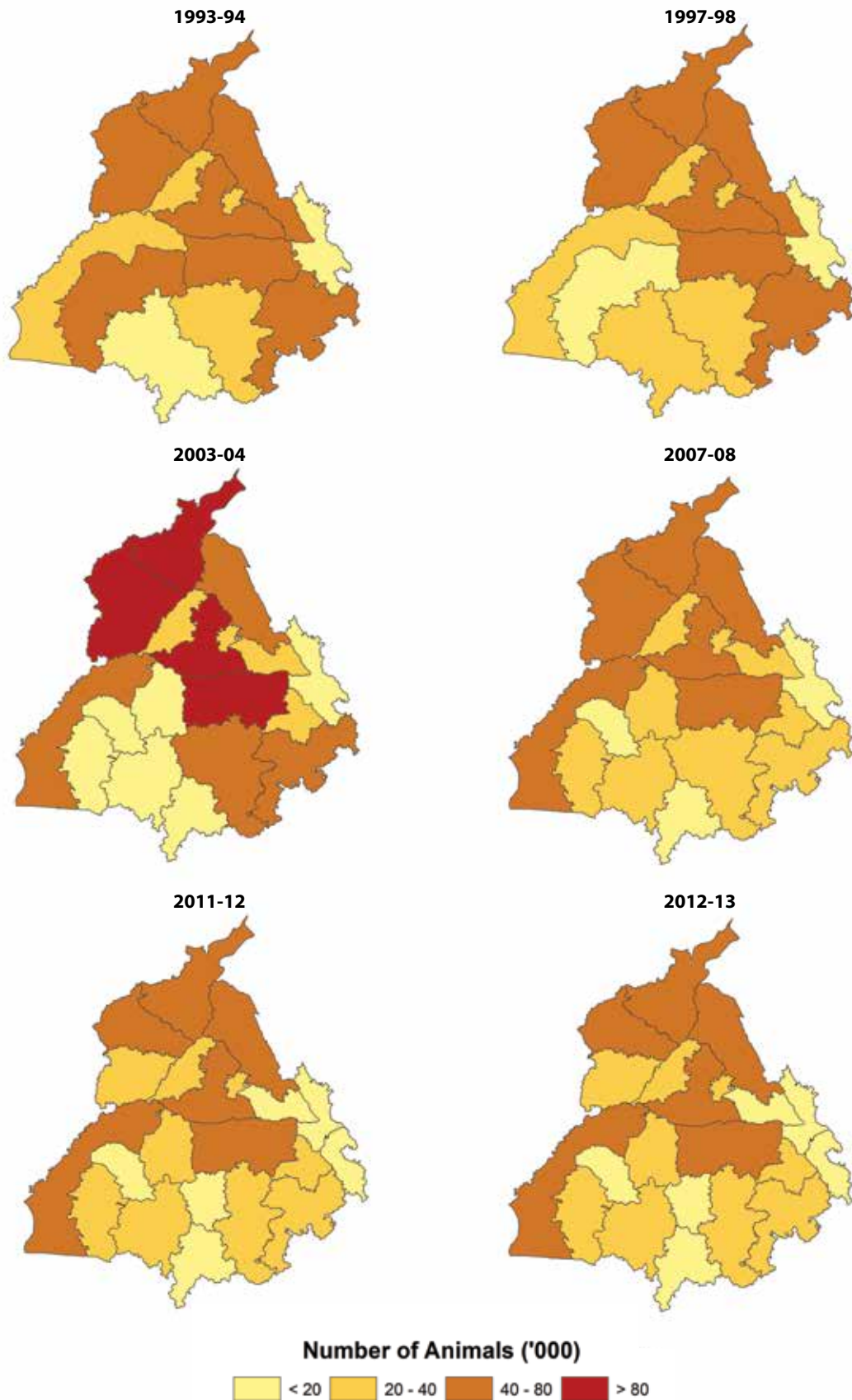
TABLE IV.1.4: Year and District-wise In-milk Crossbred Cattle Population

Districts	In-milk Crossbred Cattle Population ('000)								
	1993-94	1997-98	2003-04	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PUNJAB	485	578	658	685	726	714	686	684	693
Amritsar	60	69	69	48	46	46	44	48	50
Barnala				10	9	9	9	9	9
Bathinda	12	25	13	22	14	14	13	25	24
Faridkot	44	16	16	17	18	18	17	16	17
Fatehgarh Sahib	18	20	28	31	30	30	28	24	26
Firozpur	26	29	45	57	50	49	44	57	59
Gurdaspur	51	57	65	66	72	71	70	67	68
Hoshiarpur	42	51	56	54	62	61	58	57	56
Jalandhar	62	44	68	65	75	74	70	68	64
Kapurthala	25	30	33	31	36	36	34	29	30
Ludhiana	50	66	97	79	108	106	105	76	78
Mansa	9	11	10	9	11	11	11	13	11
Moga		13	15	28	17	17	16	29	29
Patiala	44	64	44	35	42	42	40	34	35
Rupnagar (Ropar)	11	12	20	13	11	10	10	12	13
Sangrur	29	34	39	27	33	33	32	30	29
SAS Nagar (Mohali)				12	18	18	17	12	12
SBS Nagar (Nawanshahr)		24	23	21	25	25	22	18	20
Muktsar		14	18	27	20	20	18	29	29
Tarn Taran				33	29	29	28	32	33

SOURCE: Integrated Sample Survey Reports (1993-94 to 2012-13), Animal Husbandry Department, Govt. of Punjab.



District-wise In-Milk Crossbred Cattle Population





IV.1. ISS Figures: Animal Population

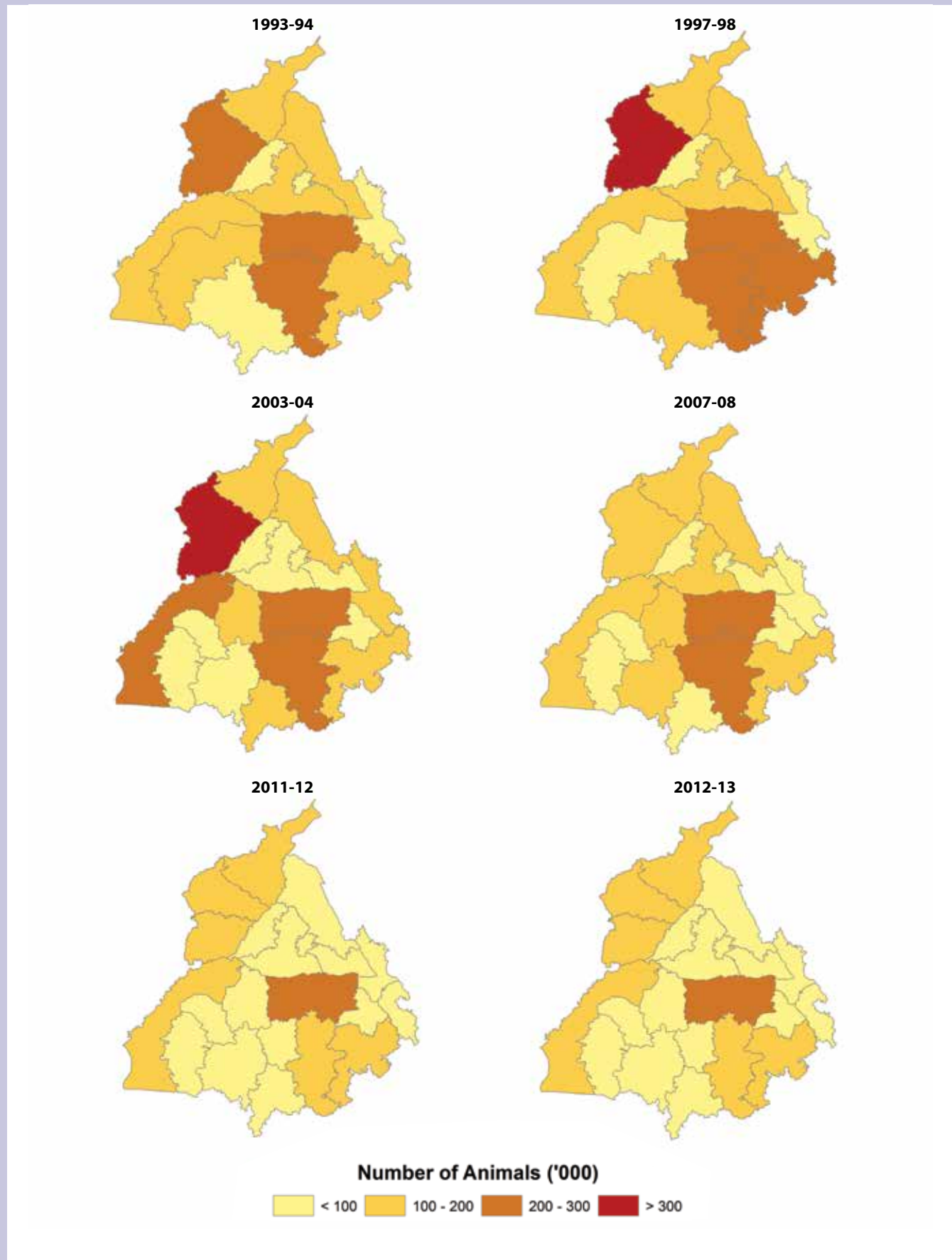
TABLE IV.1.5: Year and District-wise In-milk Buffalo Population

Districts	In-milk Buffalo Population ('000)								
	1993-94	1997-98	2003-04	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Punjab	2,091	2,193	2,522	2,381	2,041	2,036	2,011	2,028	2,084
Amritsar	277	306	386	172	191	191	187	147	161
Barnala				72	50	50	49	65	63
Bathinda	85	126	96	106	78	78	78	100	97
Faridkot	161	47	72	61	58	58	58	54	55
Fatehgarh Sahib	79	81	77	62	62	62	62	61	63
Firozpur	194	144	220	187	178	177	171	165	171
Gurdaspur	156	180	184	152	149	149	148	125	134
Hoshiarpur	140	133	107	107	87	87	85	90	91
Jalandhar	182	107	90	110	73	73	70	86	85
Kapurthala	57	45	95	77	77	77	76	63	68
Ludhiana	212	237	273	267	221	220	213	207	216
Mansa	72	76	101	95	82	82	81	90	91
Moga		63	110	107	89	89	89	96	97
Patiala	182	255	199	163	139	139	139	137	143
Rupnagar (Ropar)	90	67	111	68	42	42	43	56	55
Sangrur	205	230	286	220	181	181	180	198	197
SAS Nagar (Mohali)				80	69	69	69	63	66
SBS Nagar (Nawanshahr)		73	82	68	66	66	66	57	61
Muksar		25	34	53	27	27	28	50	46
Tarn Taran				154	120	120	118	119	123

SOURCE: Integrated Sample Survey Reports (1993-94 to 2012-13), Animal Husbandry Department, Govt. of Punjab.



District-wise In-Milk Buffalo Population



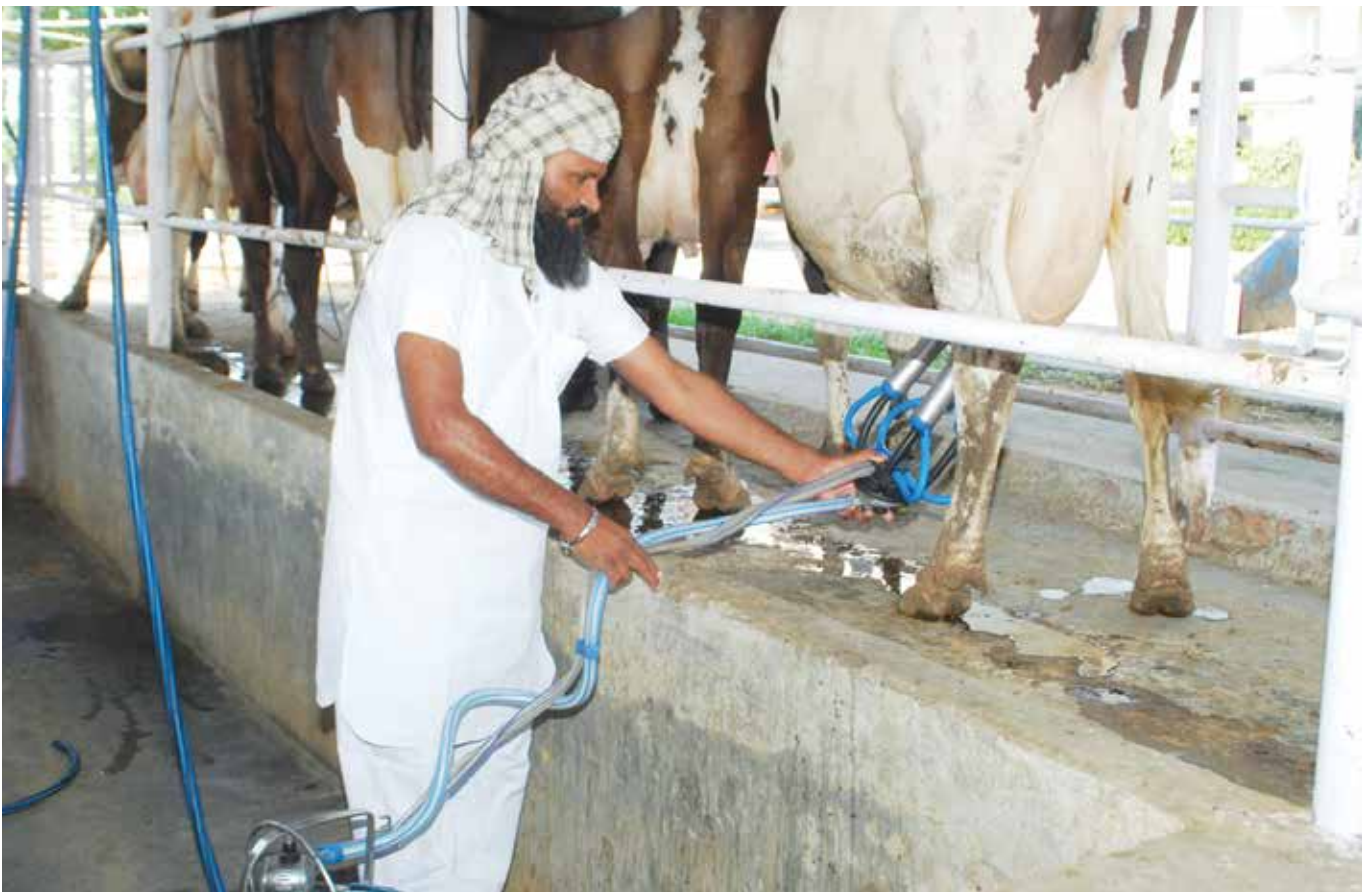


IV.2. ISS Figures: Milk Yield

TABLE IV.2.1: Year and District-wise Bovine Milk Yield

Districts	Bovine Milk Yield (kg/day)								
	1993-94	1997-98	2003-04	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PUNJAB	5.834	6.479	6.946	7.981	8.875	8.905	9.046	9.117	9.116
Amritsar	5.768	6.356	7.122	8.243	9.215	9.347	9.37	9.636	9.658
Barnala				8.092	9.045	9.161	9.219	9.572	9.409
Bathinda	6.48	5.955	8.219	10.427	10.055	8.663	9.273	9.649	9.43
Faridkot	5.601	6.22	6.135	7.818	8.63	8.253	8.635	8.767	8.832
Fatehgarh Sahib	5.506	6.529	7.702	8.19	8.278	8.573	8.701	8.601	8.641
Firozpur	5.361	5.953	6.72	7.015	8.54	8.683	8.208	8.454	8.738
Gurdaspur	5.443	6.504	6.302	7.878	8.6	9.005	9.577	9.657	9.343
Hoshiarpur	5.509	6.871	6.817	7.743	8.465	8.378	8.511	8.81	9.038
Jalandhar	6.083	6.99	8.185	8.327	8.927	8.712	9.139	9.092	9.269
Kapurthala	5.608	6.049	7.348	7.666	8.868	8.82	8.688	8.919	8.924
Ludhiana	5.987	7.069	6.674	8.453	9.83	9.914	9.56	9.236	9.494
Mansa	6.878	5.995	7.353	7.183	7.562	8.138	8.438	8.367	8.526
Moga		6.197	6.924	7.209	7.975	8.074	8.753	9.077	9.215
Patiala	6.195	5.937	7.288	7.551	8.582	8.363	8.937	8.737	8.9
Rupnagar (Ropar)	4.801	7.059	6.372	7.551	8.625	8.064	8.016	8.258	8.297
Sangrur	6.393	6.901	6.65	7.932	8.631	8.484	8.67	8.862	8.997
SAS Nagar (Mohali)				8.715	9.697	9.758	8.935	8.895	8.836
SBS Nagar (Nawanshahr)		6.919	7.237	7.854	7.995	8.264	8.451	8.5	8.447
Muktsar		6.354	4.71	6.694	9.469	11.006	11.007	11.083	10.233
Tarn Taran				8.377	9.455	8.989	9.798	9.686	9.444

SOURCE: Integrated Sample Survey Reports (1993-94 to 2012-13), Animal Husbandry Department, Govt. of Punjab.





IV.2. ISS Figures: Milk Yield

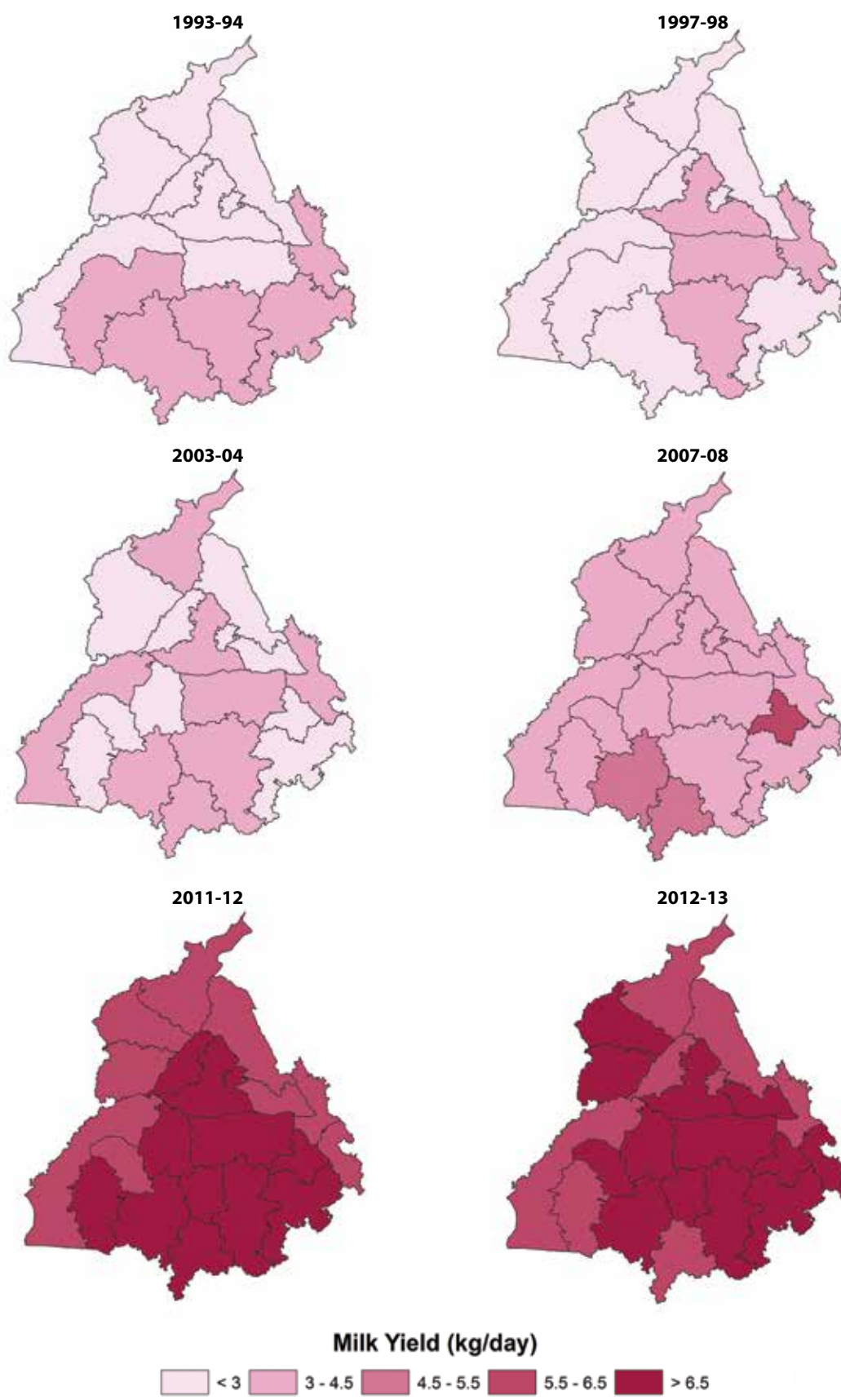
TABLE IV. 2.2: Year and District-wise Indigenous Cattle Milk Yield

Districts	Indigenous cattle Milk Yield (kg/day)								
	1993-94	1997-98	2003-04	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PUNJAB	3.232	2.837	3.099	4.249	6.013	5.640	6.501	6.523	6.526
Amritsar	2.852	2.968	2.762	3.859	5.642	5.96	5.961	6.104	6.6
Barnala				4.973	7.551	7.96	7.679	6.977	6.505
Bathinda	3.917	2.92	3.736	5.476	7.106	5.61	6.568	6.669	6.572
Faridkot	3.105	2.508	2.294	3.831	5.076	6.45	6.163	6.273	6.528
Fatehgarh Sahib	2.883	2.598	2.57	5.703	5.704	5.62	6.752	6.699	6.665
Firozpur	2.859	2.865	3.29	3.739	5.763	5.72	6.571	5.983	6.048
Gurdaspur	2.145	2.737	3.225	4.43	6.256	6.23	6.077	6.266	6.466
Hoshiarpur	2.921	2.752	2.805	4.035	5.127	5.12	5.405	5.736	6.475
Jalandhar	2.586	3.018	3.169	3.905	4.197	4.82	6.626	6.693	6.511
Kapurthala	2.586	2.923	2.89	3.921	4.771	4.76	6.333	6.544	6.326
Ludhiana	2.79	3.104	3.042	4.019	5.536	5.2	6.666	6.693	6.778
Mansa	3.917	2.92	4.064	4.791	5.972	6.15	7.211	7.043	6.468
Moga		2.748	2.702	3.754	4.997	5	6.476	6.606	6.631
Patiala	3.796	2.352	2.262	4.373	6.076	5.57	6.534	6.859	6.661
Rupnagar (Ropar)	3.233	3.022	3.008	3.714	5.453	5.48	6.371	6.49	6.446
Sangrur	3.796	3.134	3.42	4.208	5.802	5.21	6.545	6.742	6.718
SAS Nagar (Mohali)				4.069	5.054	5.22	6.448	6.416	6.612
SBS Nagar (Nawanshahr)		2.874	2.567	3.348	4.747	4.74	5.77	6.041	6.621
Muktsar		2.748	2.401	4.41	7.443	5.22	7.456	7.152	6.379
Tarn Taran				3.89	5.73	5.51	6.404	6.479	6.519

SOURCE: Integrated Sample Survey Reports (1993-94 to 2012-13), Animal Husbandry Department, Govt. of Punjab.



District-wise Indigenous Cattle Milk Yield





IV.2. ISS: Milk Yield

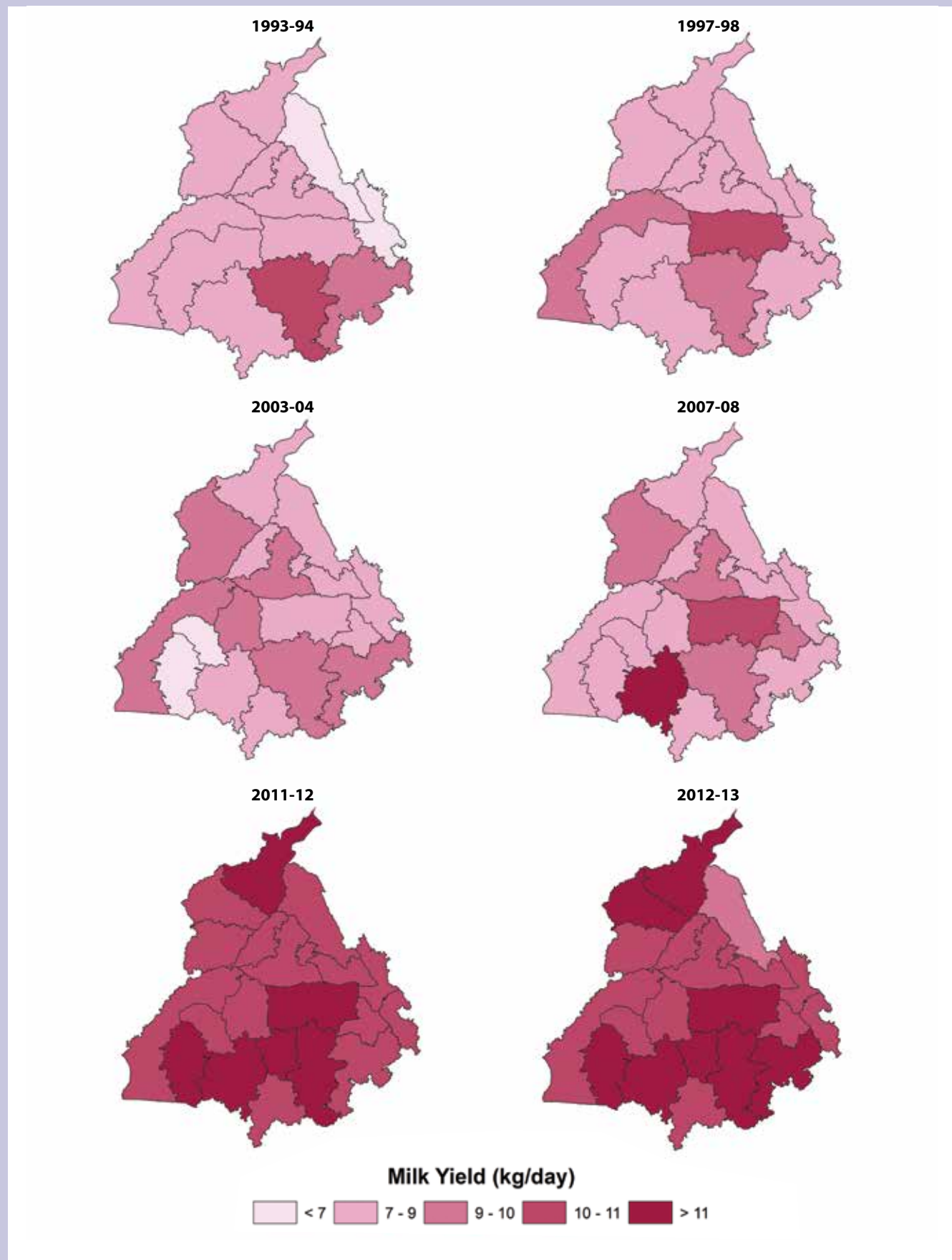
TABLE IV.2.3: Year and District-wise Crossbred Cattle Milk Yield

Districts	Crossbred Cattle Milk Yield (kg/day)								
	1993-94	1997-98	2003-04	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PUNJAB	7.847	8.674	8.682	9.037	10.409	10.580	10.947	10.953	10.960
Amritsar	7.640	8.570	9.113	9.490	11.629	11.300	10.576	10.895	11.061
Barnala				8.202	11.172	10.950	12.477	11.597	11.676
Bathinda	7.440	7.803	8.775	11.503	11.833	11.650	12.543	11.766	12.094
Faridkot	7.820	8.709	6.653	8.426	10.485	8.880	10.569	10.437	10.468
Fatehgarh Sahib	7.346	8.376	8.387	9.350	9.350	9.680	10.028	10.283	10.369
Firozpur	7.379	9.766	9.034	8.673	9.494	10.190	10.742	10.840	10.754
Gurdaspur	7.041	8.532	8.274	8.982	9.885	10.710	11.331	11.235	11.463
Hoshiarpur	6.182	7.873	8.429	8.426	9.091	9.340	9.698	10.094	9.958
Jalandhar	8.031	7.368	9.424	9.091	9.632	9.310	10.353	10.293	10.272
Kapurthala	7.517	7.296	8.834	8.605	9.635	9.610	10.136	10.107	10.113
Ludhiana	8.476	10.439	8.424	10.31	12.567	13.110	13.371	13.011	13.153
Mansa	7.130	8.167	7.566	8.419	8.960	9.010	10.552	10.460	10.917
Moga		8.905	9.451	8.599	9.371	9.510	10.457	10.606	10.607
Patiala	9.475	8.104	9.571	8.876	9.659	9.330	10.348	10.820	11.166
Rupnagar (Ropar)	6.870	8.953	8.451	8.481	9.885	8.750	9.491	10.295	10.445
Sangrur	10.030	10.000	9.575	9.495	9.937	10.260	11.141	11.597	11.224
SAS Nagar (Mohali)				8.791	11.87	11.850	10.503	10.882	10.649
SBS Nagar (Nawanshahr)		8.247	8.554	8.496	9.239	8.960	9.99	10.054	10.149
Muktsar		8.905	5.241	7.253	11.422	15.380	14.516	13.520	12.397
Tarn Taran				9.131	11.609	10.170	10.116	10.276	10.258

SOURCE: Integrated Sample Survey Reports (1993-94 to 2012-13), Animal Husbandry Department, Govt. of Punjab.



District-wise Crossbred Cattle Milk Yield





IV.2. ISS Figures: Milk Yield

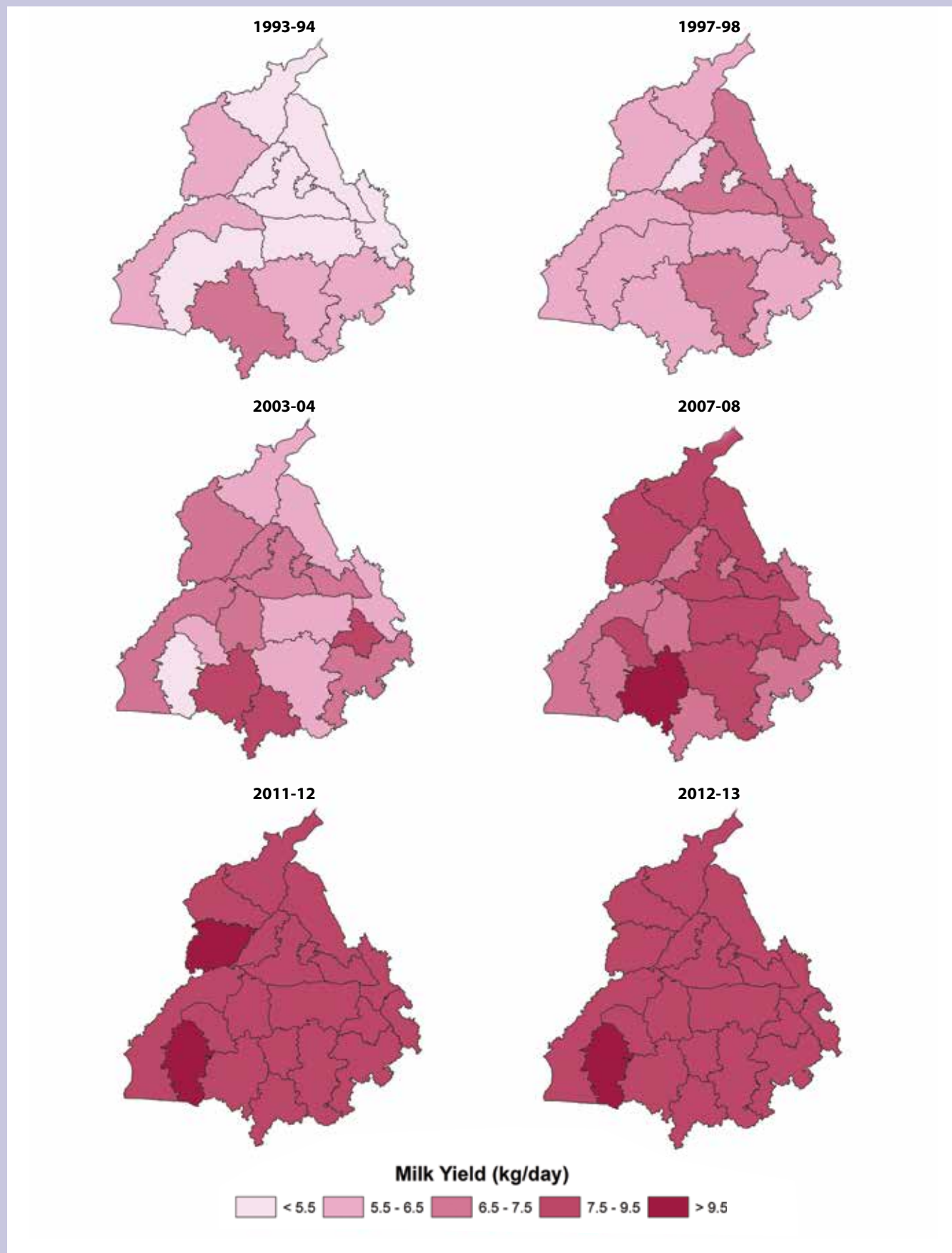
TABLE IV.2.4: Year and District-wise Buffalo Milk Yield

Districts	Buffalo Milk Yield (kg/day)								
	1993-94	1997-98	2003-04	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PUNJAB	5.627	6.138	6.651	7.839	8.504	8.533	8.585	8.644	8.646
Amritsar	5.609	6.078	6.920	8.027	8.674	9.012	9.223	9.415	9.294
Barnala				8.268	8.801	9.087	8.919	9.280	9.302
Bathinda	6.864	6.083	8.668	10.741	10.134	8.729	9.216	9.274	8.985
Faridkot	5.333	6.173	6.228	7.992	8.374	8.246	8.360	8.566	8.448
Fatehgarh Sahib	5.281	6.314	7.537	7.758	7.757	8.130	8.195	8.134	8.011
Firozpur	5.512	6.244	6.599	6.841	8.628	8.656	7.776	7.953	8.326
Gurdaspur	5.250	6.188	5.650	7.527	8.132	8.396	8.963	9.112	8.494
Hoshiarpur	5.361	6.694	6.151	7.629	8.363	8.016	7.977	8.165	8.624
Jalandhar	5.452	6.770	7.383	8.020	8.384	8.311	8.088	8.191	8.613
Kapurthala	5.002	5.325	6.887	7.400	8.567	8.600	8.092	8.366	8.485
Ludhiana	5.499	6.291	6.102	7.993	8.663	8.523	7.786	7.889	8.364
Mansa	7.428	6.258	7.510	7.184	7.474	8.275	8.296	8.181	8.347
Moga		6.011	6.704	7.103	7.879	8.077	8.766	8.783	8.853
Patiala	5.673	5.710	6.945	7.383	8.354	8.302	8.635	8.316	8.457
Rupnagar (Ropar)	4.581	7.122	6.037	7.468	8.383	7.841	7.726	7.847	7.893
Sangrur	6.316	6.916	6.400	7.913	8.546	8.431	8.527	8.676	8.765
SAS Nagar (Mohali)				8.911	9.240	9.368	8.622	8.690	8.635
SBS Nagar (Nawanshahr)		6.606	6.960	7.774	7.474	8.013	7.987	8.075	8.028
Muktsar		6.011	4.837	6.659	8.888	10.347	10.350	10.373	9.681
Tarn Taran				8.348	9.007	8.810	9.862	9.600	9.317

SOURCE: Integrated Sample Survey Reports (1993-94 to 2012-13), Animal Husbandry Department, Govt. of Punjab.



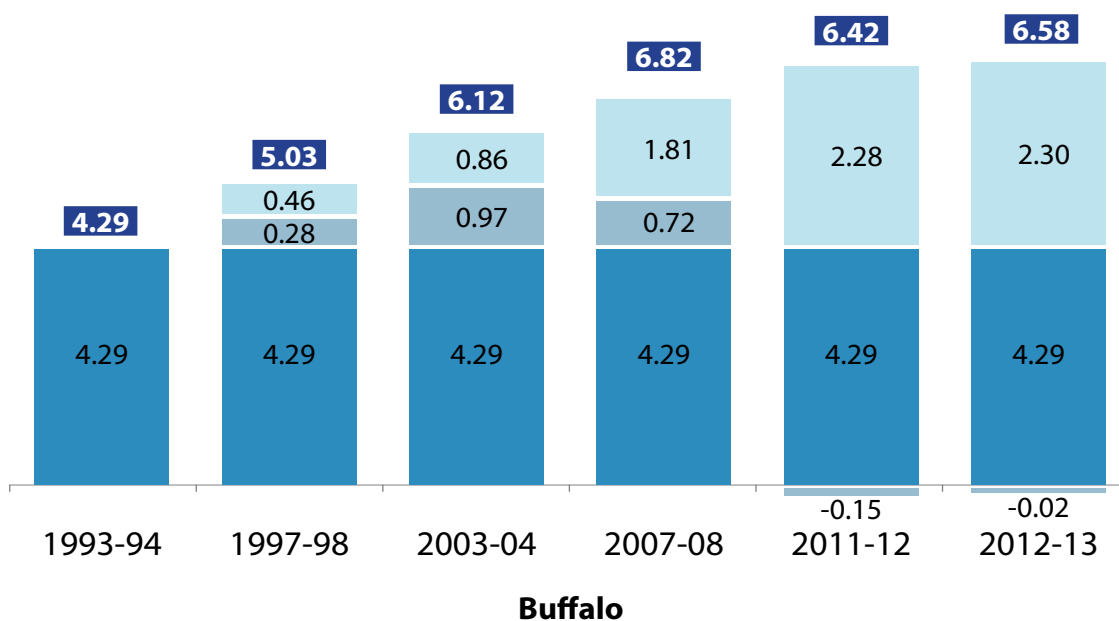
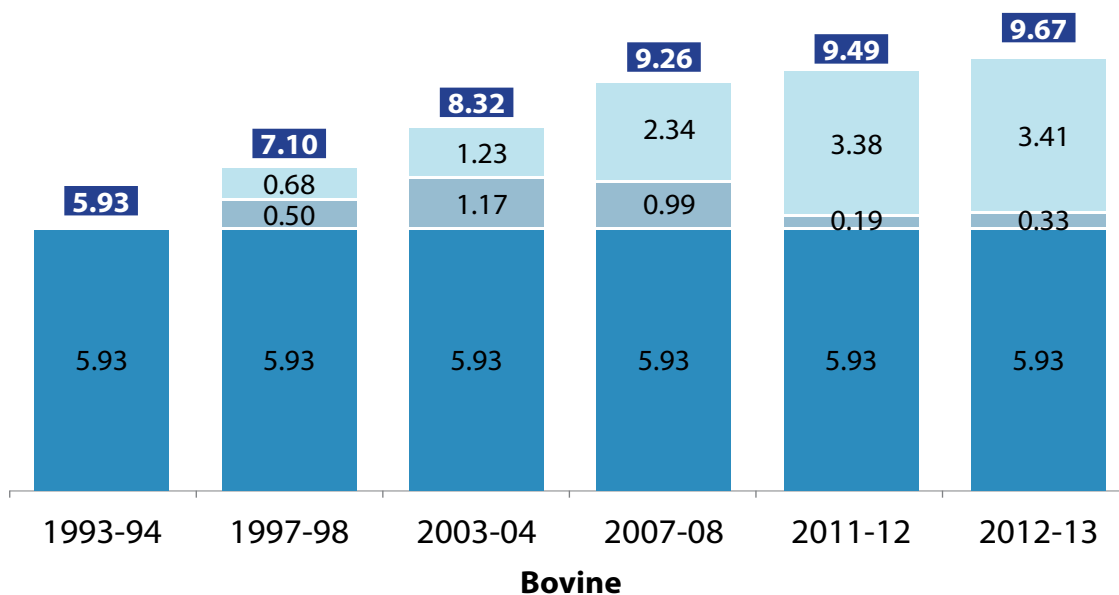
District-wise Buffalo Milk Yield





Punjab's Milk Production (MMT)

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

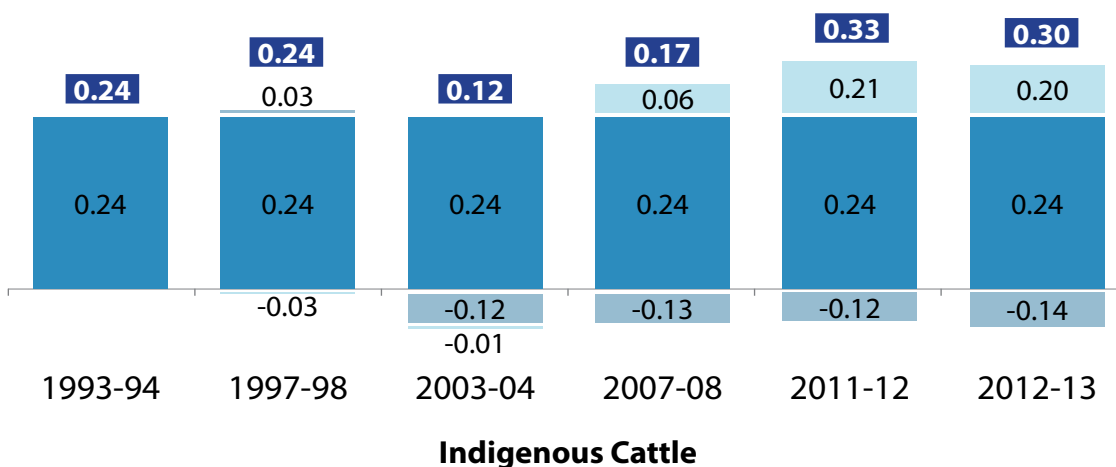
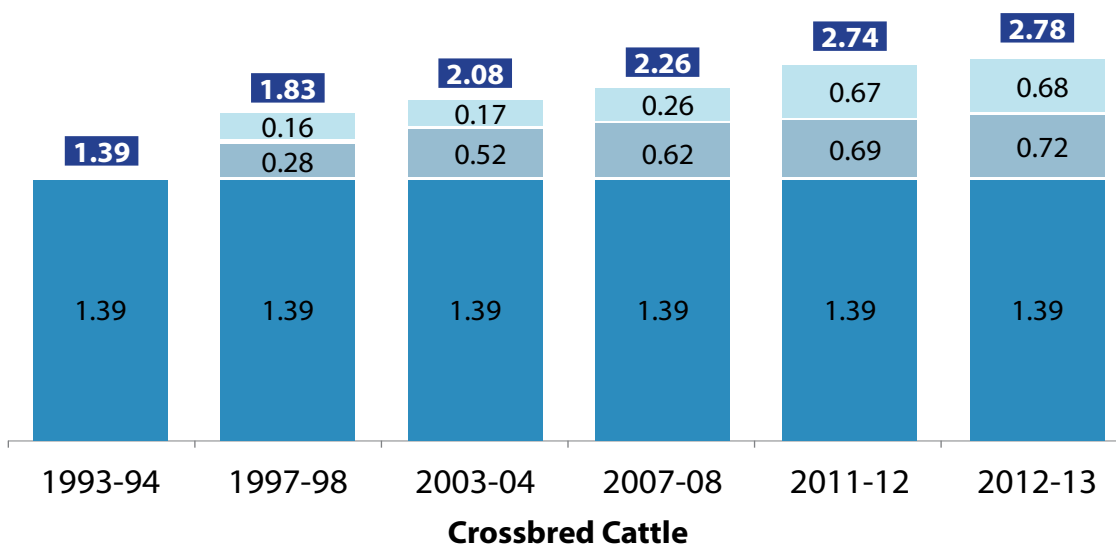


- Milk production in base year - 1993-1994.
- Increase in total production due to change in numbers of in milk animals.
- Increase in total milk production due to change in average yield (kg/in-milk animal per day).
- Total milk production.



Punjab's Milk Production (MMT)

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



- Milk production in base year - 1993-1994.
- Increase in total production due to change in numbers of in milk animals.
- Increase in total milk production due to change in average yield (kg/in-milk animal per day).
- Total milk production.



IV.3. ISS Figures: Milk Production

TABLE IV.3.1: Year and District-wise Bovine Milk Production

Districts	Bovine Milk Production ('000 MT)								
	1993-94	1997-98	2003-04	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PUNJAB	5,926	7,104	8,323	9,255	9,349	9,371	9,357	9,491	9,666
Amritsar	760	914	1,214	680	814	829	814	714	772
Barnala				254	208	214	212	276	261
Bathinda	272	376	360	529	378	332	352	479	444
Faridkot	462	168	206	234	252	241	249	240	245
Fatehgarh Sahib	211	255	298	281	281	291	289	270	287
Firozpur	497	478	704	676	773	786	719	756	791
Gurdaspur	445	603	582	647	722	756	797	712	723
Hoshiarpur	372	479	418	472	482	474	466	492	508
Jalandhar	544	398	481	541	492	477	477	521	521
Kapurthala	174	170	346	305	369	367	352	306	329
Ludhiana	590	805	911	1,083	1,202	1,205	1,134	981	1,050
Mansa	241	221	314	291	276	300	308	339	333
Moga		190	326	371	326	333	361	434	444
Patiala	554	739	665	565	592	580	610	574	601
Rupnagar (Ropar)	184	219	307	226	170	156	158	211	212
Sangrur	623	733	818	747	712	706	712	786	775
SAS Nagar (Mohali)				299	315	317	287	250	258
SBS Nagar (Nawanshahr)		250	280	258	267	276	273	242	259
Muktsar		109	98	215	197	233	229	356	310
Tarn Taran				584	528	502	540	548	555

SOURCE: Integrated Sample Survey Reports (1993-94 to 2012-13), Animal Husbandry Department, Govt. of Punjab.





IV.3. ISS Figures: Milk Production

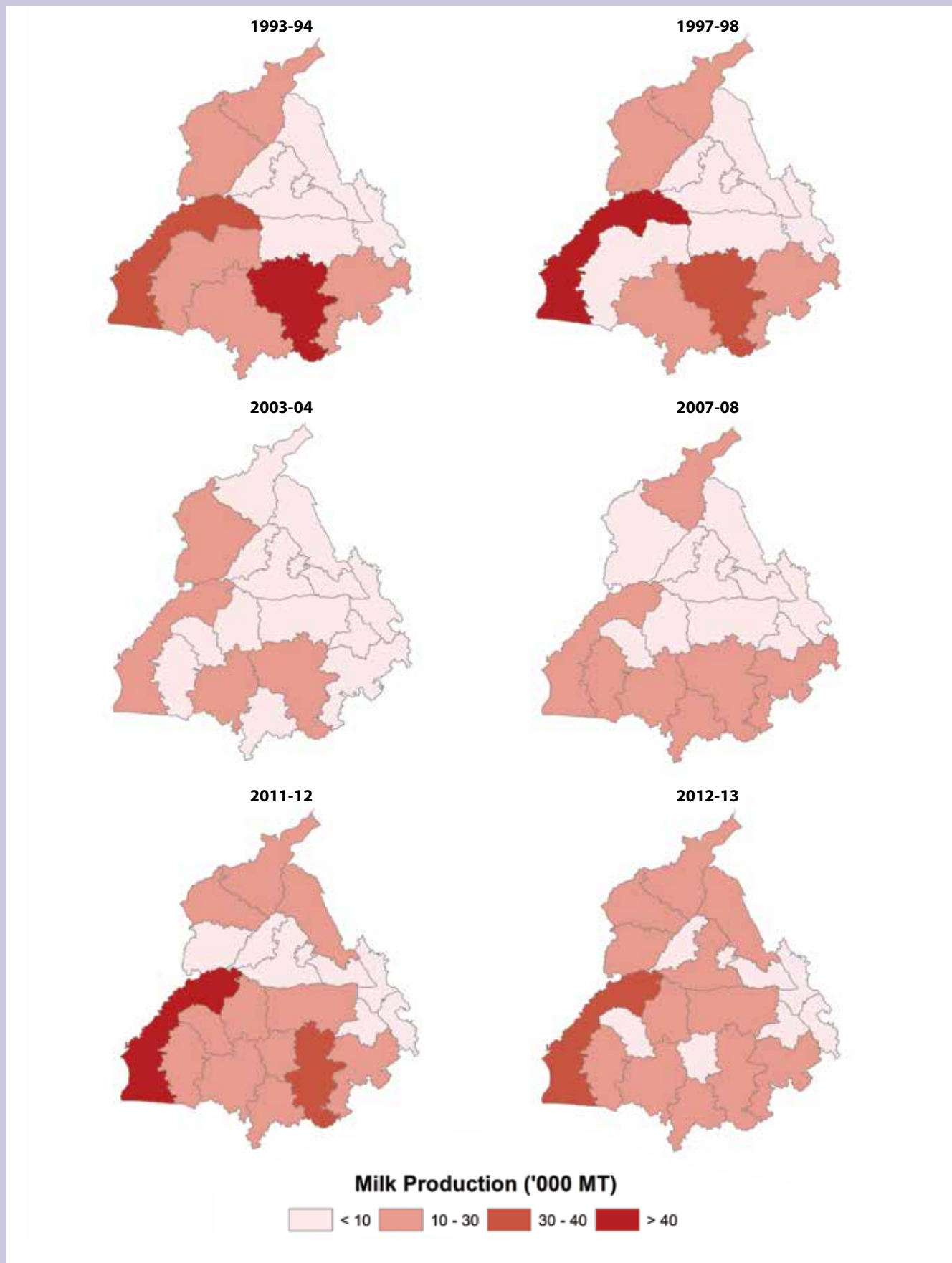
TABLE IV.3.2: Year and District-wise Indigenous Cattle Milk Production

Districts	Indigenous Cattle Milk Production ('000 MT)								
	1993-94	1997-98	2003-04	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PUNJAB	244	241	117	173	261	273	325	333	304
Amritsar	25	21	12	8	11	13	14	18	20
Barnala				6	11	13	13	13	8
Bathinda	25	24	15	22	30	26	30	27	20
Faridkot	24	10	4	5	7	10	9	11	9
Fatehgarh Sahib	9	6	1	1	1	1	2	2	5
Firozpur	36	49	27	27	41	45	59	51	40
Gurdaspur	13	17	5	12	20	23	22	23	24
Hoshiarpur	3	7	5	9	12	14	15	13	18
Jalandhar	1	5	4	4	5	5	8	10	14
Kapurthala	3	2	1	1	1	1	2	4	6
Ludhiana	8	10	4	8	12	13	18	20	22
Mansa	21	15	9	12	16	18	20	20	12
Moga		8	4	8	12	13	18	15	16
Patiala	26	19	6	12	18	18	19	23	18
Rupnagar (Ropar)	5	7	1	1	2	2	2	5	5
Sangrur	45	31	15	17	26	26	32	37	25
SAS Nagar (Mohali)				2	3	3	4	5	4
SBS Nagar (Nawanshahr)		3	1	1	1	1	1	7	7
Muktsar		8	4	14	27	21	29	24	18
Tarn Taran				6	8	9	11	10	12

SOURCE: Integrated Sample Survey Reports (1993-94 to 2012-13), Animal Husbandry Department, Govt. of Punjab.



District-wise Indigenous Cattle Milk Production





IV.3. ISS Figures: Milk Production

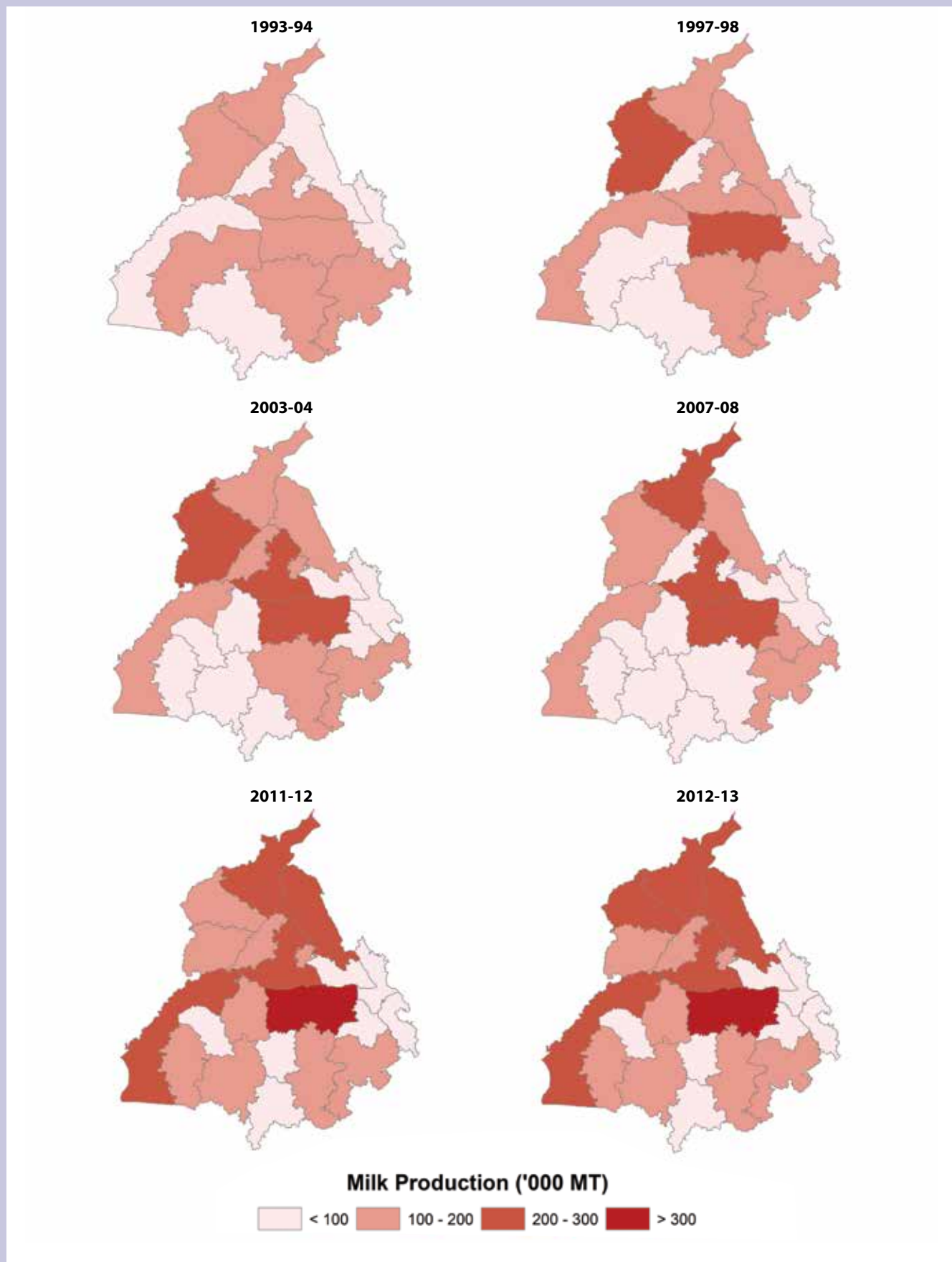
TABLE IV.3.3: Year and District-wise Crossbred Cattle Milk Production

Districts	Crossbred Cattle Milk Production ('000 MT)								
	1993-94	1997-98	2003-04	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PUNJAB	1,388	1,829	2,084	2,262	2,756	2,758	2,735	2,741	2,784
Amritsar	167	215	228	167	197	188	169	191	204
Barnala				29	37	36	40	41	39
Bathinda	33	71	41	91	60	59	61	112	105
Faridkot	125	52	39	52	68	57	65	61	65
Fatehgarh Sahib	50	61	85	104	104	106	103	86	97
Firozpur	71	102	148	182	172	181	174	226	232
Gurdaspur	132	179	197	216	260	277	291	273	282
Hoshiarpur	96	147	172	165	205	207	202	211	203
Jalandhar	181	130	234	216	264	251	262	252	240
Kapurthala	68	81	105	96	127	124	124	108	111
Ludhiana	156	250	300	296	493	507	511	363	369
Mansa	24	32	27	29	36	35	43	48	45
Moga		44	53	87	58	58	59	109	114
Patiala	152	189	154	113	149	141	151	135	142
Rupnagar (Ropar)	28	38	62	40	38	33	36	45	50
Sangrur	106	122	135	95	121	123	119	121	120
SAS Nagar (Mohali)				38	79	78	66	46	46
SBS Nagar (Nawanshahr)		72	71	65	85	81	79	66	73
Muktsar		45	34	72	82	109	93	143	130
Tarn Taran				109	124	107	103	120	126

SOURCE: Integrated Sample Survey Reports (1993-94 to 2012-13), Animal Husbandry Department, Govt. of Punjab.



District-wise Crossbred Cattle Milk Production





IV.3. ISS Figures: Milk Production

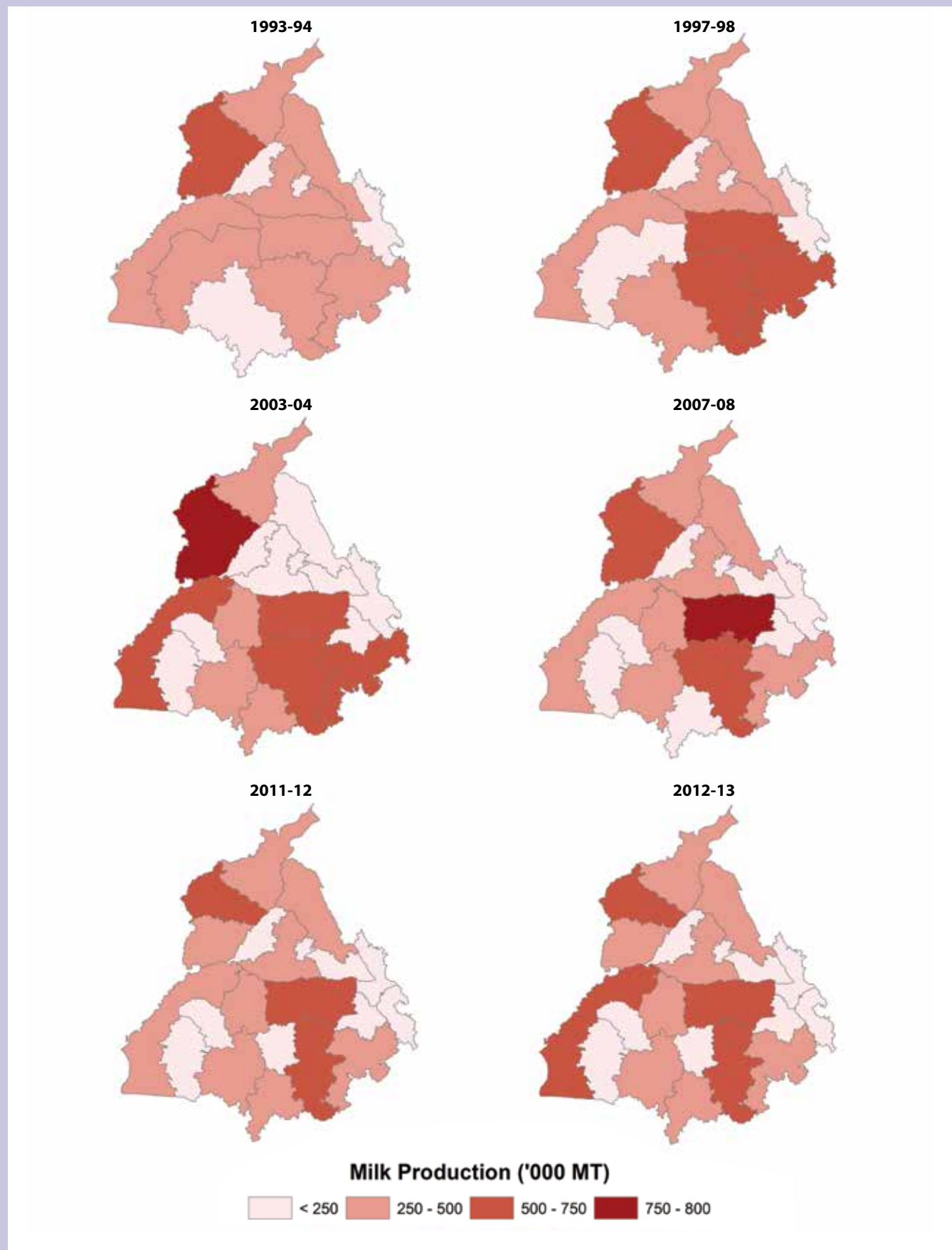
TABLE IV.3.4: Year and District-wise Buffalo Milk Production

Districts	Buffalo Milk Production ('000 MT)								
	1993-94	1997-98	2003-04	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Punjab	4,294	5,034	6,122	6,820	6,332	6,340	6,297	6,417	6,578
Amritsar	568	678	974	505	606	628	631	505	548
Barnala				219	160	165	159	222	214
Bathinda	214	281	304	416	288	247	261	340	319
Faridkot	313	106	163	177	177	174	175	168	171
Fatehgarh Sahib	152	188	212	176	176	184	184	182	185
Firozpur	390	327	529	467	560	560	486	479	519
Gurdaspur	300	407	380	419	442	456	484	416	417
Hoshiarpur	273	325	241	298	265	253	249	268	287
Jalandhar	362	263	243	321	223	221	207	259	267
Kapurthala	103	87	240	208	241	242	226	194	212
Ludhiana	426	545	607	779	697	685	605	598	659
Mansa	196	174	278	250	224	247	245	271	276
Moga		138	269	276	256	262	284	310	314
Patiala	376	531	505	440	425	421	440	416	441
Rupnagar (Ropar)	151	174	244	185	130	121	120	161	157
Sangrur	472	580	668	635	565	557	561	628	630
SAS Nagar (Mohali)				259	233	236	217	199	208
SBS Nagar (Nawanshahr)		175	208	192	181	194	193	169	179
Muktsar		56	60	129	88	103	107	189	162
Tarn Taran				469	396	386	425	418	417

SOURCE: Integrated Sample Survey Reports (1993-94 to 2012-13), Animal Husbandry Department, Govt. of Punjab.



District-wise Buffalo Milk Production





IV.3. ISS Figures: Milk Production

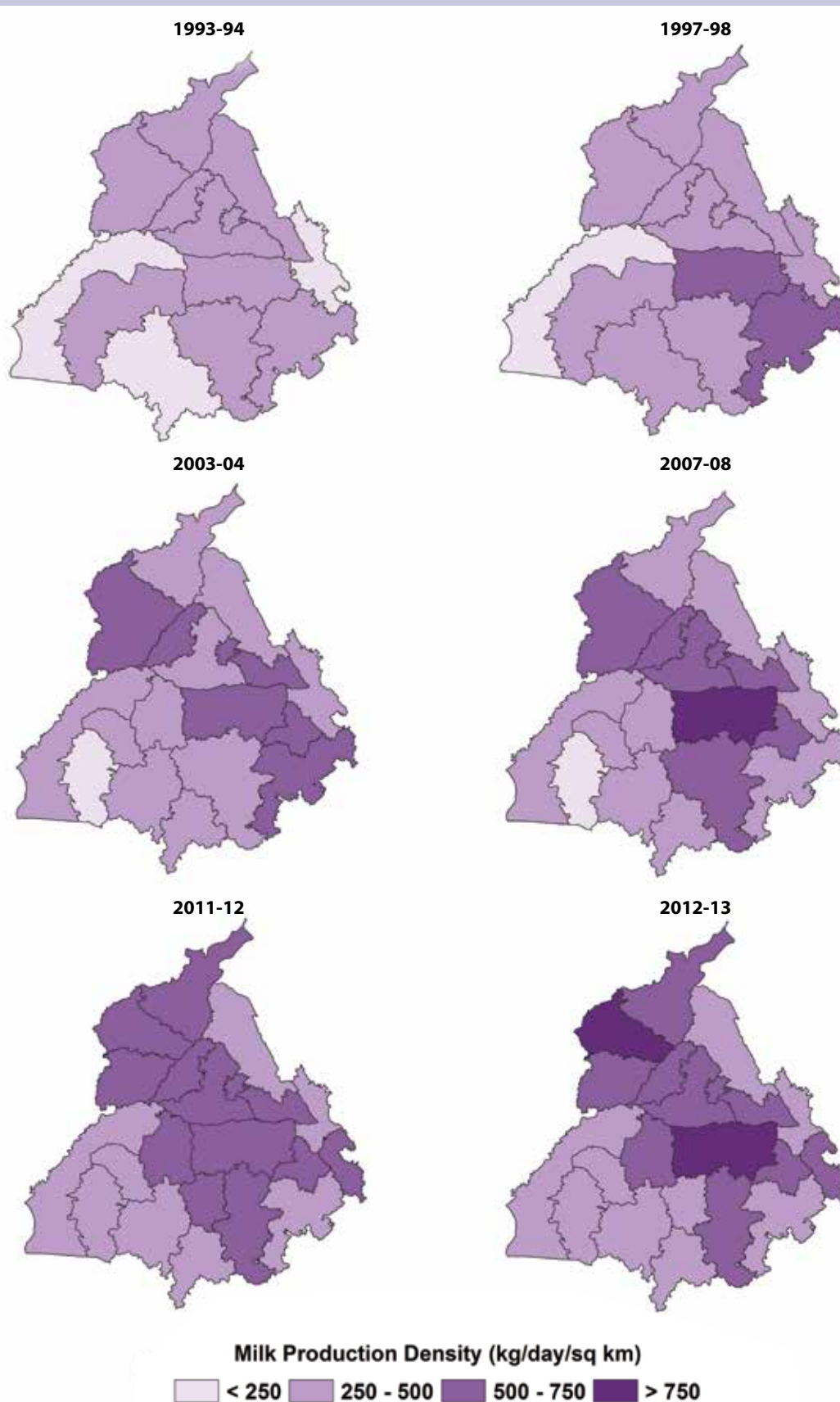
TABLE IV.3.5: Year and District-wise Milk Production Density

Districts	Milk Production Density (Kg/Day/Sq Km)								
	1993-94	1997-98	2003-04	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PUNJAB	323	387	454	503	508	509	509	516	525
Amritsar	408	491	654	697	834	849	834	731	791
Barnala				471	386	397	393	512	484
Bathinda	220	304	292	434	310	272	289	393	364
Faridkot	343	313	384	438	472	452	468	450	459
Fatehgarh Sahib	491	593	694	653	653	676	672	628	667
Firozpur	172	247	365	348	398	405	370	389	407
Gurdaspur	342	463	448	499	557	583	615	549	558
Hoshiarpur	254	389	339	380	388	382	375	396	409
Jalandhar	456	413	500	567	516	500	500	546	546
Kapurthala	292	285	581	514	622	618	593	516	554
Ludhiana	430	586	663	828	919	921	867	750	803
Mansa	305	279	397	362	343	373	396	422	414
Moga		235	402	454	399	407	440	531	543
Patiala	418	558	502	465	487	477	502	472	494
Rupnagar (Ropar)	245	292	410	454	342	314	318	424	426
Sangrur	339	399	446	564	538	533	538	593	585
SAS Nagar (Mohali)				751	791	796	721	628	648
SBS Nagar (Nawanshahr)		540	606	554	574	593	586	520	556
Muktsar		114	102	227	208	246	242	376	328
Tarn Taran				664	600	571	614	623	631

SOURCE: Estimated from Integrated Sample Survey Reports (1993-94 to 2012-13), Animal Husbandry Department, Govt. of Punjab.



District-wise Milk Population Density





IV.4. ISS Figures: Milk Availability

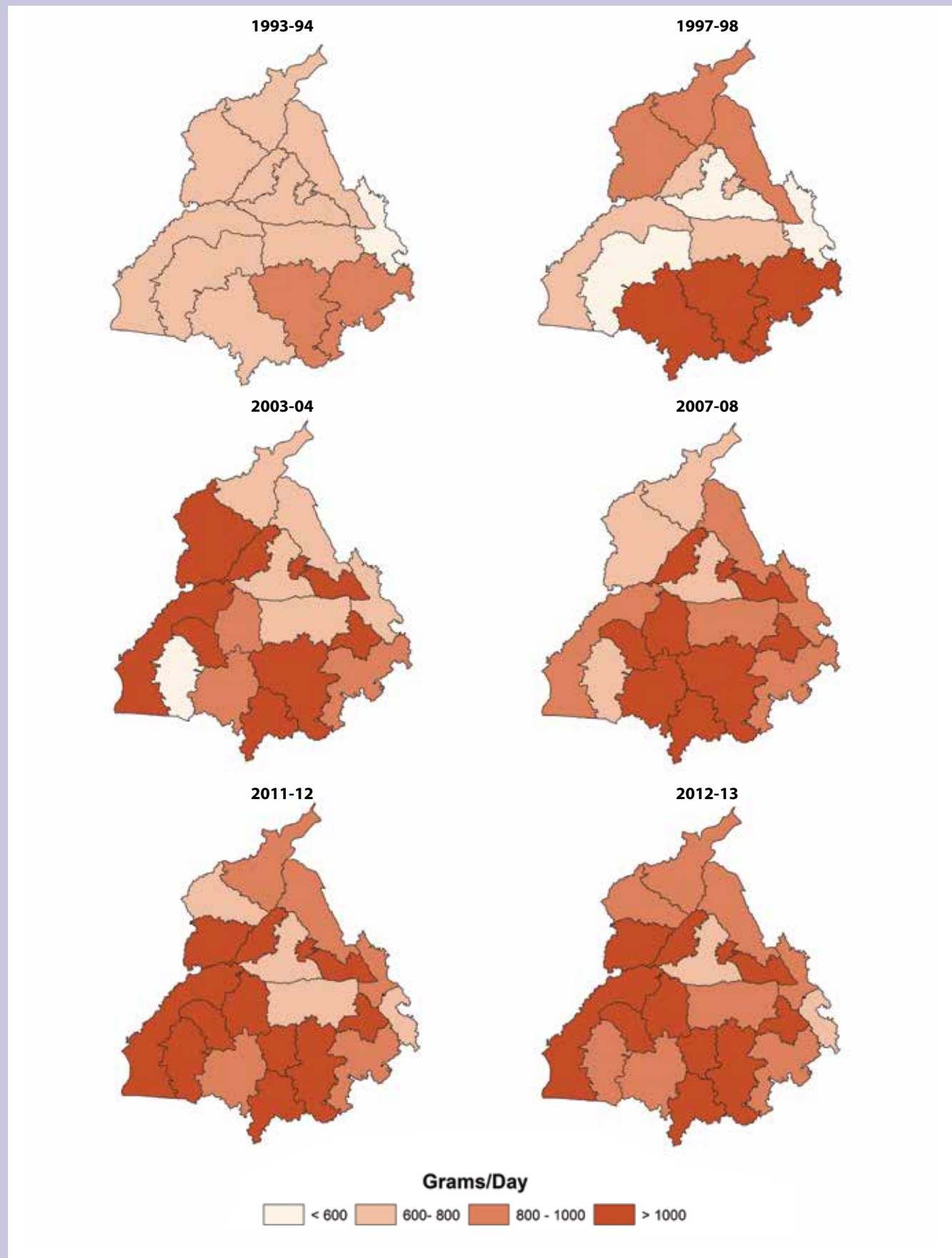
TABLE IV.4.1: Year and District-wise Per Capita Milk Availability

Districts	Per Capita Availability of Milk (<i>grams/day</i>)								
	1993-94	1997-98	2003-04	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PUNJAB	772	860	915	962	960	950	936	937	942
Amritsar	797	880	1,042	796	938	941	909	786	835
Barnala				1,224	991	1,007	986	1,269	1,190
Bathinda	771	1,190	807	1,113	782	676	706	945	862
Faridkot	758	448	1,001	1,086	1,156	1,093	1,117	1,068	1,074
Fatehgarh Sahib	1,227	1,387	1,485	1,340	1,293	1,358	1,339	1,233	1,296
Firozpur	774	691	1,072	969	1,092	1,094	986	1,021	1,054
Gurdaspur	669	844	745	799	884	917	960	849	854
Hoshiarpur	698	892	763	838	850	830	810	849	873
Jalandhar	740	548	657	706	635	609	604	651	642
Kapurthala	715	656	1,237	1,057	1,269	1,253	1,192	1,029	1,101
Ludhiana	628	789	800	898	982	971	901	768	811
Mansa	1,196	982	1,221	1,082	1,015	1,091	1,108	1,206	1,175
Moga		625	977	1,065	926	936	1,004	1,194	1,208
Patiala	805	1,085	937	908	927	884	905	829	846
Rupnagar (Ropar)	529	582	745	925	692	631	636	844	843
Sangrur	967	1,069	1,094	1,297	1,221	1,197	1,193	1,301	1,268
SAS Nagar (Mohali)				879	911	902	803	688	702
SBS Nagar (Nawanshahr)		1,181	1,296	1,174	1,210	1,246	1,227	1,083	1,155
Muktsar		396	335	693	626	729	706	1,081	928
Tarn Taran				1,499	1,339	1,258	1,334	1,341	1,339

SOURCE: Estimated from Integrated Sample Survey Reports (1993-94 to 2012-13), Animal Husbandry Department, Govt. of Punjab.



District-wise Per Capita Milk Availability





IV.5. ISS Figures: Milk Utilisation

TABLE IV.5.1: Milk Utilisation Pattern in Households (2000-01 to 2012-13)

In Percent

Items	2000-01			2003-04			2005-06			2010-11			2012-13		
	Cow	Buffalo	Overall	Cow	Buffalo	Overall	Cow	Buffalo	Overall	Cow	Buffalo	Overall	Cow	Buffalo	Overall
Milk Sold as Fluid	57	47	50	57	46	49	61	47	50	70	49	59	57	54	55
Milk Consumed as Fluid	26	34	32	25	34	31	23	33	31	16	28	22	32	32	32
Milk Kept for Conversion	17	19	19	18	20	20	16	20	19	14	23	18	11	14	13

SOURCE: Integrated Sample Survey Reports (2000-01 to 2012-13), Animal Husbandry Department, Govt. of Punjab.





PART V : VETERINARY INFRASTRUCTURE AND SERVICE DELIVERY SYSTEM

This section covers information on district-wise veterinary infrastructure for Animal Health and Artificial Insemination (AI) services.

Punjab has extensive veterinary infrastructure for animal health care. The government managed network includes 2,852 veterinary hospitals, polyclinics and dispensaries as well as 3,824 AI centres. During 2012-13, about 2.3 million cattle and 1.8 million buffaloes were covered under AI services. In addition, the dairy cooperatives also provide veterinary care and have 1,071 AI centres to support dairying and have carried out 0.73 million AIs in 2012-13. In addition to this, there are many private service providers for AI service.

A Progressive Dairy Farmers' Association has been established. With technical support from Guru Angad Development Veterinary and Animal Sciences University, Ludhiana, it publishes quarterly technical magazine "Dairy Sandesh", technical books, arranges seminars and exhibitions to disseminate dairy related knowledge to farmers. It also imports semen of high genetic potential cattle bulls from USA for use of dairy farmers.

Surveillance and monitoring of livestock diseases has been one of the major activities of animal health care delivery system in Punjab. To this end, vaccinations were done against Foot-and-Mouth Disease, Haemorrhagic Septicaemia and Black Quarter. In 2012-13, 5.37 million animals were treated and 16 thousand bovine were castrated.





V.1. Veterinary Infrastructure

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

Districts	Number of Veterinary Institutes								
	1992-93	1997-98	2003-04	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PUNJAB	1,914	2,729	2,840	2,852	2,852	2,852	2,852	2,852	2,852
Amritsar	225	283	317	204	204	205	205	209	207
Barnala				75	75	75	75	75	85
Bathinda	92	183	175	175	175	175	175	175	166
Faridkot	190	72	68	68	67	66	66	66	66
Fatehgarh Sahib	57	95	89	90	90	90	90	90	90
Firozpur	126	210	196	195	195	195	195	195	195
Gurdaspur	181	217	234	235	235	235	235	235	235
Hoshiarpur	148	162	184	187	187	187	187	188	187
Jalandhar	183	186	184	184	184	184	184	179	183
Kapurthala	65	84	86	86	86	86	86	87	86
Ludhiana	175	264	248	249	249	249	249	249	249
Mansa	59	107	113	113	113	113	113	113	113
Moga		100	132	107	107	107	133	133	133
Patiala	139	187	184	164	164	164	164	164	166
Rupnagar (Ropar)	92	120	142	89	89	89	89	89	85
Sangrur	182	261	285	210	210	210	210	210	199
SAS Nagar (Mohali)				79	79	79	79	79	80
SBS Nagar (Nawanshahr)		111	96	97	97	97	97	97	97
Muktsar		87	107	133	133	133	107	107	107
Tarn Taran				112	113	113	113	112	111

NOTE: Veterinary institutes include veterinary hospitals and dispensaries.

SOURCE: Annual Administrative Reports (1992-93 to 2012-13), Animal Husbandry Department, Punjab.



V.1. Veterinary Infrastructure

TABLE V.1.2: District-wise AI Centres – Government Agencies

Districts	Number of AI Centres								
	1992-93	1997-98	2001-02	2003-04	2007-08	2008-09	2009-10	2010-11	2012-13
PUNJAB	1,776	2,129	2,107	2,331	2,752	2,752	2,752	2,852	3,824
Amritsar	220	203	268	282	199	199	199	205	309
Barnala					53	53	53	75	75
Bathinda	90	120	117	117	190	190	190	175	228
Faridkot	115	62	41	52	75	75	75	66	90
Fatehgarh Sahib	51	92	62	67	89	89	89	90	128
Firozpur	106	126	87	87	195	195	195	195	259
Gurdaspur	182	217	200	216	226	226	226	235	279
Hoshiarpur	153	155	148	168	184	184	184	187	250
Jalandhar	189	167	181	184	184	184	184	184	282
Kapurthala	65	74	75	85	85	85	85	86	87
Ludhiana	175	183	179	248	248	248	248	249	477
Mansa	40	65	52	104	120	120	120	113	113
Moga		60	94	100	130	130	130	133	133
Patiala	125	158	132	128	185	185	185	164	236
Rupnagar (Ropar)	92	108	112	133	90	90	90	89	253
Sangrur	173	196	200	200	169	169	169	210	97
SAS Nagar (Mohali)					77	77	77	79	79
SBS Nagar (Nawanshahr)		86	91	94	95	95	95	97	230
Muktsar		57	68	66	75	75	75	107	107
Tarn Taran					83	83	83	113	112

SOURCE: Annual Administrative Reports (1992-93 to 2012-13), Animal Husbandry Department, Punjab.

NOTE: AI centers for 2011-12 not available.



V.1. Veterinary Infrastructure

TABLE V.1.3: Milk Union-wise AI Centres – Cooperatives

Unions	Number of AI Centres						
	2003-04	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PUNJAB	519	678	3,320	795	815	972	1,017
Amritsar	50	63	240	98	100	100	111
Bathinda	24	32	151	60	46	53	53
Faridkot	14	17	50	46	0	62	58
Firozpur	14	26	159	32	32	64	74
Gurdaspur	14	17	93	23	0	44	45
Hoshiarpur	56	60	206	60	62	62	62
Jalandhar	56	67	349	27	94	103	108
Ludhiana	138	191	728	197	220	228	231
Patiala	40	59	300	66	66	66	66
Rupnagar (Ropar)	91	123	927	147	160	147	156
Sangrur	22	23	117	39	35	43	53

SOURCE: NDDB





V.2. Service Delivery System - AIs

TABLE V.2.1: District-wise AI Performed by Government Agencies – Cattle

Districts	Number of AI Performed ('000)								
	1992-93	1997-98	2003-04	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PUNJAB	1,110.5	1,379.1	1,918.4	1,826.4	1,815.5	1,979.8	2,029.1	2,265.0	2,343.7
Amritsar	123.1	164	223.5	138.9	121.1	153.5	161.4	180.7	180.9
Barnala				42.8	43.2	42.3	42.5	51.6	55.7
Bathinda	47	53.8	91.7	76.9	86.2	95.7	107.8	103.1	118.9
Faridkot	75.1	25.5	55.2	46.5	49.2	58	54.8	69.1	78.4
Fatehgarh Sahib	40.5	58.1	61.3	56.2	51	60.6	60.8	64	60.8
Firozpur	46.2	66.5	78.2	140	134.1	122.3	123.8	165.6	173.4
Gurdaspur	138.2	147	205.1	180.7	178.3	181.7	180.4	190.7	206.1
Hoshiarpur	112.9	112.1	174.2	139.4	141.7	152.4	162.8	162.9	167.8
Jalandhar	129.2	125.9	154.5	150.1	139.4	150.8	139.1	148.5	164.5
Kapurthala	51.8	82.9	97.6	72.9	71.1	76.9	77.6	86	88.7
Ludhiana	94.6	105.9	112.8	171.3	179.8	203.4	215.2	223.7	217.3
Mansa	15.5	22.4	29.9	33.9	33.6	41.2	44.9	49.6	47.5
Moga		37.8	71.3	93.7	107.1	108.7	107.5	130.4	119.2
Patiala	98.9	107.9	176.3	107	114.1	124.3	136	148.2	160.6
Rupnagar (Ropar)	25.4	40.9	54.3	39.5	42.3	45.5	45.7	49.4	61.6
Sangrur	112.1	123.4	180.8	93.7	101.2	107.1	103.6	126.3	129.3
SAS Nagar (Mohali)				30.1	27.2	32.9	33	41.8	46.6
SBS Nagar (Nawanshahr)		59.7	73.2	50.1	46.1	48.9	54.1	55	59.2
Muktsar		44.6	77.7	90.7	84.5	86.7	90.1	112.3	108.1
Tarn Taran				71.5	63.5	86.4	87.4	105	98.9

SOURCE: Annual Administrative Reports (1992-93 to 2012-13), Animal Husbandry Department, Punjab.



V.2. Service Delivery System - AIs

TABLE V.2.2: District-wise AI Performed by Government Agencies – Buffaloes

Districts	Number of AI Performed ('000)								
	1992-93	1997-98	2003-04	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PUNJAB	400.6	529.0	1,093.9	1,157.0	1,261.4	1,464.9	1,547.2	1,742.1	1,870.0
Amritsar	18.7	11.2	77.9	60.6	54.5	76.8	81.7	90.5	89.5
Barnala				41.7	46.4	50	50.9	65.7	70.2
Bathinda	20.7	26.8	67.1	58.8	68.2	77.7	86.7	96.8	95.7
Faridkot	26.1	11.4	36.6	30	34.3	40.6	42.7	52	55.5
Fatehgarh Sahib	20.1	31	44.4	39.8	41	51.7	53.8	57.4	55.9
Firozpur	7.6	16.2	26.2	62	69.9	81.8	77.2	97.9	131.5
Gurdaspur	24.6	27.8	61.4	80.5	91.1	94.4	104.3	114.2	128.4
Hoshiarpur	37.2	35.6	85.2	70.3	74.3	82	86.9	87.2	102.2
Jalandhar	45.3	43.5	69	75.4	75.6	83.6	78.5	89.9	99.4
Kapurthala	11.6	18.9	38.8	43.1	46.2	50.8	52.5	61.3	68.9
Ludhiana	33.8	52.9	63.4	117.6	134.6	157	169.4	193.2	196.7
Mansa	6.8	12.1	21.1	34.9	38.5	52.4	61.5	67.1	63.6
Moga		18.6	46.2	62	80.9	90.3	95.2	107.2	88.9
Patiala	55.2	63.7	162.6	93.5	102.3	113	120.8	131.6	158.9
Rupnagar (Ropar)	16.6	29.5	46.8	42.4	47.5	54.2	54.1	55.3	65.9
Sangrur	76.4	88.3	152.4	89.3	104.8	118.7	121.4	157.4	162.2
SAS Nagar (Mohali)				35.5	40.8	54.9	60.9	51.3	63.5
SBS Nagar (Nawanshahr)		29.4	58.9	37.3	37.9	38.6	43.5	42.4	50.7
Muktsar		11.9	35.5	42.1	40.4	44.8	48.2	57.6	58.6
Tarn Taran				39.6	31.3	51.1	56.2	65	63.7

SOURCE: Annual Administrative Reports (1992-93 to 2012-13), Animal Husbandry Department, Punjab.



V.2. Service Delivery System - AIs

TABLE V.2.3: District-wise AI Performed by Government Agencies – Bovine

Districts	Number of AI Performed ('000)								
	1992-93	1997-98	2003-04	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PUNJAB	1,511.1	1,908.1	3,012.3	2,983.4	3,076.9	3,444.7	3,576.3	4,007.1	4,213.7
Amritsar	141.8	175.2	301.4	199.5	175.6	230.3	243.1	271.2	270.4
Barnala				84.5	89.6	92.3	93.4	117.3	125.9
Bathinda	67.7	80.6	158.8	135.7	154.4	173.4	194.5	199.9	214.6
Faridkot	101.2	36.9	91.8	76.5	83.5	98.6	97.5	121.1	133.9
Fatehgarh Sahib	60.6	89.1	105.7	96	92	112.3	114.6	121.4	116.7
Firozpur	53.8	82.7	104.4	202	204	204.1	201	263.5	304.9
Gurdaspur	162.8	174.8	266.5	261.2	269.4	276.1	284.7	304.9	334.5
Hoshiarpur	150.1	147.7	259.4	209.7	216	234.4	249.7	250.1	270
Jalandhar	174.5	169.4	223.5	225.5	215	234.4	217.6	238.4	263.9
Kapurthala	63.4	101.8	136.4	116	117.3	127.7	130.1	147.3	157.6
Ludhiana	128.4	158.8	176.2	288.9	314.4	360.4	384.6	416.9	414
Mansa	22.3	34.5	51	68.8	72.1	93.6	106.4	116.7	111.1
Moga		56.4	117.5	155.7	188	199	202.7	237.6	208.1
Patiala	154.1	171.6	338.9	200.5	216.4	237.3	256.8	279.8	319.5
Rupnagar (Ropar)	42	70.4	101.1	81.9	89.8	99.7	99.8	104.7	127.5
Sangrur	188.5	211.7	333.2	183	206	225.8	225	283.7	291.5
SAS Nagar (Mohali)				65.6	68	87.8	93.9	93.1	110.1
SBS Nagar (Nawanshahr)		89.1	132.1	87.4	84	87.5	97.6	97.4	109.9
Muktsar		56.5	113.2	132.8	124.9	131.5	138.3	169.9	166.7
Tarn Taran				111.1	94.8	137.5	143.6	170	162.6

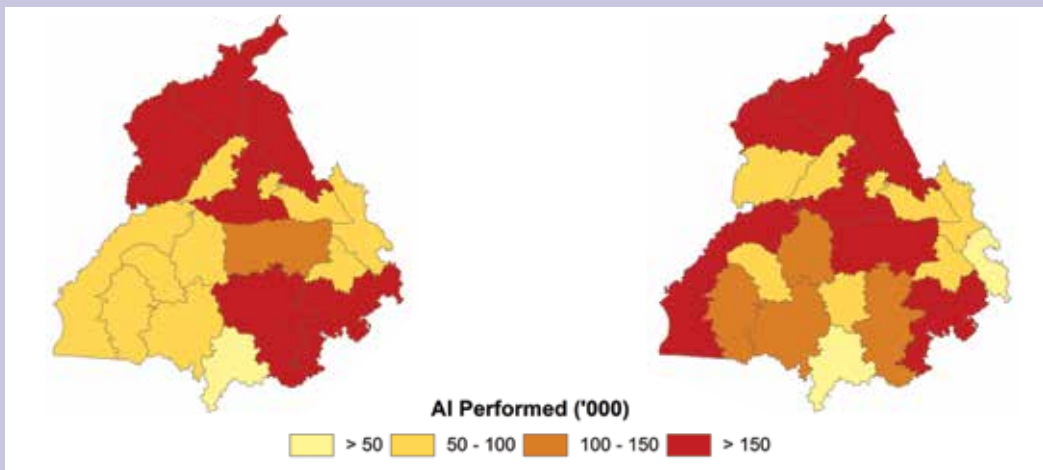
SOURCE: Annual Administrative Reports (1992-93 to 2012-13), Animal Husbandry Department, Punjab.



AI Performed by Government Agencies (Cattle)

2003-04

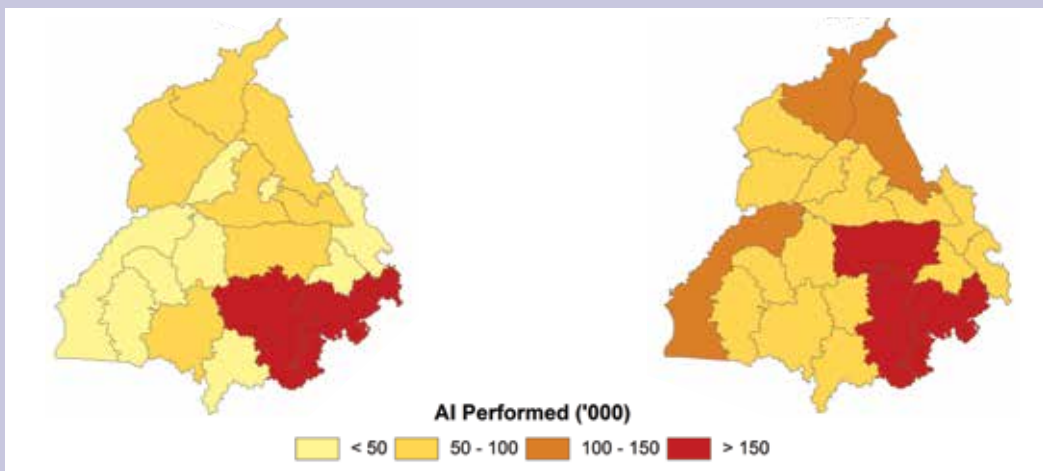
2012-13



AI Performed by Government Agencies (Buffalo)

2003-04

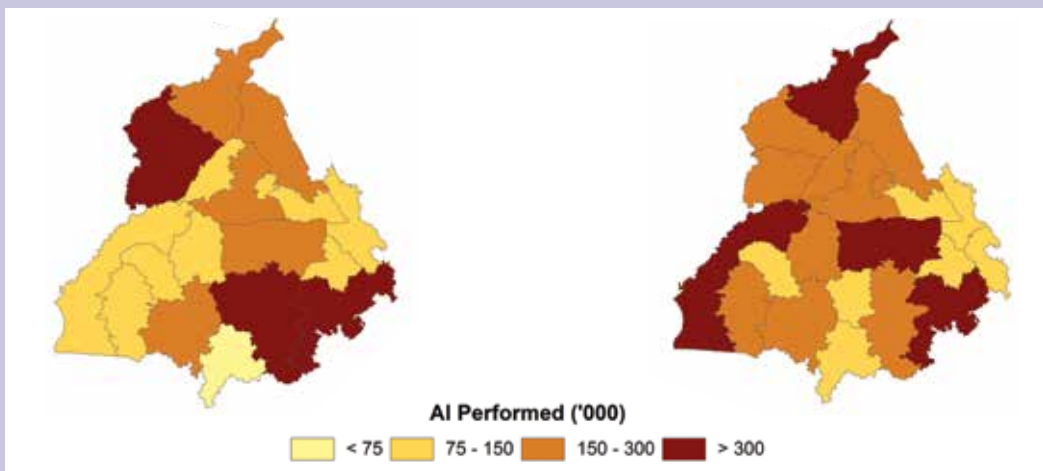
2012-13



AI Performed by Government Agencies (Bovine)

2003-04

2012-13





V.2. Service Delivery System - AIs

TABLE V.2.4: Milk Union-wise AI Performed by Cooperatives – Cattle

Unions	Number of AI Performed ('000)						
	2003-04	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PUNJAB	177	287	347	402	348	441	468
Amritsar	32	35	40	42	44	52	50
Bathinda	3	9	10	12	13	19	23
Faridkot	0	7	13	12	0	19	32
Firozpur	11	15	24	29	23	24	25
Gurdaspur	3	6	10	10	0	25	27
Hoshiarpur	16	19	20	20	9	30	15
Jalandhar	22	27	31	68	41	45	50
Ludhiana	40	62	70	77	75	75	84
Patiala	8	29	36	40	45	45	52
Rupnagar (Ropar)	39	70	82	78	83	87	86
Sangrur	4	7	9	11	14	20	25

SOURCE: NDDB.

TABLE V.2.5: Milk Union-wise AI Performed by Cooperatives – Buffaloes

Unions	Number of AI Performed ('000)						
	2003-04	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PUNJAB	77	119	164	206	194	253	268
Amritsar	8	9	11	10	14	13	8
Bathinda	1	6	7	8	10	12	17
Faridkot	0	3	6	5	0	19	28
Firozpur	3	6	11	15	18	15	15
Gurdaspur	2	3	1	1	0	10	8
Hoshiarpur	5	9	11	11	7	16	32
Jalandhar	7	14	17	40	23	28	22
Ludhiana	28	27	33	41	38	53	46
Patiala	5	17	25	31	33	26	34
Rupnagar (Ropar)	16	20	34	35	42	50	56
Sangrur	3	5	6	7	10	11	3

SOURCE: NDDB.

TABLE V.2.6: Milk Union-wise AI Performed by Cooperatives – Bovine

Unions	Number of AI Performed ('000)						
	2003-04	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PUNJAB	254	407	512	608	542	694	737
Amritsar	40	44	51	52	57	65	58
Bathinda	5	15	18	20	23	31	39
Faridkot	0	11	20	18	0	38	60
Firozpur	14	21	35	44	41	39	40
Gurdaspur	5	9	11	11	0	35	35
Hoshiarpur	20	28	32	32	16	46	47
Jalandhar	29	41	48	109	64	72	72
Ludhiana	68	90	103	119	113	128	130
Patiala	13	46	61	71	78	71	86
Rupnagar (Ropar)	54	90	116	113	124	137	142
Sangrur	7	12	15	19	25	32	28

SOURCE: NDDB.



V.3. Service Delivery System - Animal Health

TABLE V.3.1: District-wise Vaccination Performed for Foot-and-Mouth Disease

Districts	Foot-and-Mouth Disease Vaccination ('000)								
	1992-93	1997-98	2003-04	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PUNJAB	1,816	3,065	4,049	8,171	7,674	7,463	12,574	6,986	13,446
Amritsar	257	313	230	766	391	409	790	387	882
Barnala				237	227	241	437	226	450
Bathinda	149	153	391	523	415	415	824	378	760
Faridkot	142	85	139	145	202	147	311	167	325
Fatehgarh Sahib	56	127	97	200	200	310	385	210	405
Firozpur	97	210	486	1,778	629	627	1,291	682	1,254
Gurdaspur	197	296	158	732	472	368	897	400	857
Hoshiarpur	123	178	259	140	650	490	685	345	720
Jalandhar	149	155	301	185	343	626	519	501	681
Kapurthala	51	101	149	126	285	54	315	375	340
Ludhiana	107	324	279	289	631	436	853	679	1,260
Mansa	85	108	48	310	300	313	568	250	496
Moga		119	166	152	354	170	665	342	632
Patiala	176	212	205	600	440	440	933	385	937
Rupnagar (Ropar)	89	237	149	111	300	273	353	199	400
Sangrur	139	242	717	918	666	595	1,178	550	1,106
SAS Nagar (Mohali)				61	182	159	237	195	390
SBS Nagar (Nawanshahr)		97	165	100	300	292	326	172	344
Muktsar		106	110	120	342	725	390	211	470
Tarn Taran				678	346	374	619	330	736

SOURCE: Annual Administrative Reports (1992-93 to 2012-13), Animal Husbandry Department, Punjab.



V.3. Service Delivery System - Animal Health

TABLE V.3.2: District-wise Vaccination Preformed for Haemorrhagic Septicaemia

Districts	Haemorrhagic Septicaemia Vaccination ('000)								
	1992-93	1997-98	2003-04	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PUNJAB	5,810	9,686	7,154	6,600	5,856	6,015	6,061	6,038	6,257
Amritsar	509	1,025	793	425	375	390	355	394	392
Barnala				200	185	187	184	187	200
Bathinda	272	407	260	320	300	305	320	320	320
Faridkot	503	268	158	170	141	140	145	155	160
Fatehgarh Sahib	200	381	218	200	174	153	161	160	155
Firozpur	487	960	603	450	497	563	587	510	598
Gurdaspur	607	645	604	475	420	420	420	420	415
Hoshiarpur	287	399	400	400	350	352	360	350	341
Jalandhar	467	700	500	410	300	292	312	314	315
Kapurthala	176	306	190	211	195	195	195	195	195
Ludhiana	483	796	595	644	582	588	560	569	586
Mansa	180	233	230	247	219	224	231	230	262
Moga		514	310	302	296	208	340	291	330
Patiala	673	923	536	500	390	355	378	374	380
Rupnagar (Ropar)	290	537	413	194	192	195	195	195	198
Sangrur	675	875	858	511	447	489	493	493	498
SAS Nagar (Mohali)				179	140	152	165	173	175
SBS Nagar (Nawanshahr)		376	236	192	172	172	172	172	172
Muktsar		340	250	247	195	336	200	229	245
Tarn Taran				324	287	301	288	306	320

SOURCE: Annual Administrative Reports (1992-93 to 2012-13), Animal Husbandry Department, Punjab.



V.3. Service Delivery System - Animal Health

TABLE V.3.3: District-wise Vaccination Preformed for Black Quarter

Districts	Black Quarter Vaccination ('000)						
	1992-93	1997-98	2003-04	2007-08	2008-09	2009-10	2010-11
PUNJAB	121	297	129	73	60	66	63
Amritsar	-	6	17	5	2	0.3	1
Barnala				0	3	0	3
Bathinda	-	21	-	0	3	5	3
Faridkot	14	10	0.4	3	2	5	5
Fatehgarh Sahib	0.2	20	0.1	3	0	0	0
Firozpur	22	53	18	3	3	18	3
Gurdaspur	30	25	17	0.2	3	0.1	0
Hoshiarpur	10	11	8	5	8	5	4
Jalandhar	10	20	-	0	0	0	0.5
Kapurthala	11	29	-	5	0	5	0
Ludhiana	1	9	7	7	2	0	7
Mansa	8	8	4	0	0	3	3
Moga		17	15	2	15	0	15
Patiala	-	14	5	5	0	0	3
Rupnagar (Ropar)	2	19	9	0	3	0	3
Sangrur	13	16	4	7	2	5	4
SAS Nagar (Mohali)				4	3	0	1
SBS Nagar (Nawanshahr)		5	5	5	5	5	3
Muktsar		15	20	-	10	15	3
Tarn Taran				5	0	0	5

SOURCE: Annual Administrative Reports (1992-93 to 2012-13), Animal Husbandry Department, Punjab.

NOTE: Data for 2011-12 and 2012-13 not published/reported.



V.3. Service Delivery System - Animal Health

TABLE V.3.4: District-wise Bovine Vaccination

Districts	Bovine Vaccination ('000)								
	1992-93	1997-98	2003-04	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PUNJAB	7,747	13,048	11,332	14,844	13,590	13,544	18,698	13,024	19,703
Amritsar	766	1,344	1,040	1,196	768	799.3	1,146	781	1,274
Barnala				437	415	428	624	413	650
Bathinda	421	581	651	843	718	725	1,147	698	1,080
Faridkot	659	363	297	318	345	292	461	322	485
Fatehgarh Sahib	256.2	528	315	403	374	463	546	370	560
Firozpur	606	1,223	1,107	2,231	1,129	1,208	1,881	1,192	1,852
Gurdaspur	834	966	779	1,207	895	788.1	1,317	820	1,272
Hoshiarpur	420	588	667	545	1,008	847	1,049	695	1,061
Jalandhar	626	875	801	595	643	918	831	815	996
Kapurthala	238	436	339	342	480	254	510	570	535
Ludhiana	591	1,129	881	940	1,215	1,024	1,420	1,248	1,846
Mansa	273	349	282	557	519	540	802	480	758
Moga		650	491	456	665	378	1,020	633	962
Patiala	849	1,149	746	1,105	830	795	1,314	759	1,317
Rupnagar (Ropar)	381	793	571	305	495	468	551	394	598
Sangrur	827	1,133	1,579	1,436	1,115	1,089	1,675	1,043	1,604
SAS Nagar (Mohali)				244	325	311	403	368	565
SBS Nagar (Nawanshahr)		478	406	297	477	469	501	344	516
Muktsar		461	380	367	547	1,076	593	440	715
Tarn Taran				1,007	633	675	912	636	1,056

SOURCE: Annual Administrative Reports (1992-93 to 2012-13), Animal Husbandry Department, Punjab.

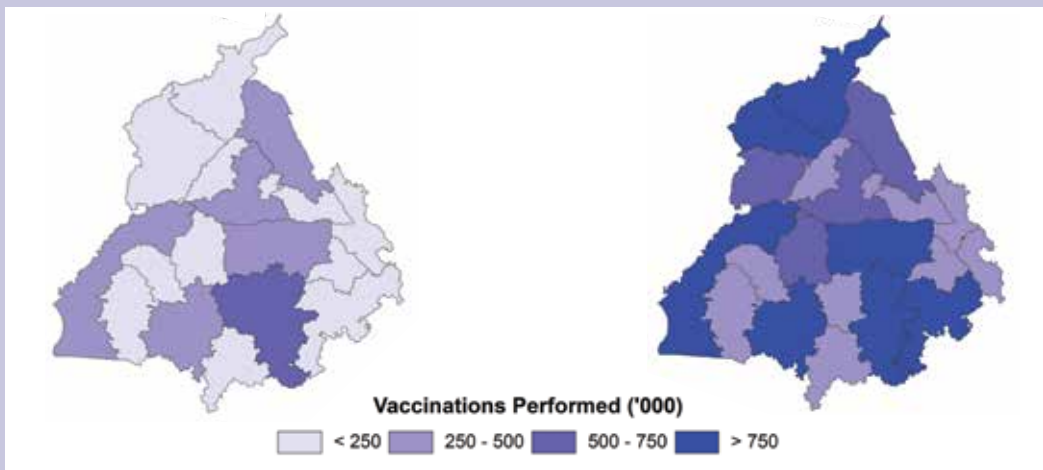
NOTE: Bovine vaccination includes vaccination for FMD, HS and BQ.



Vaccinations Performed for Foot and Mouth Disease

2003-04

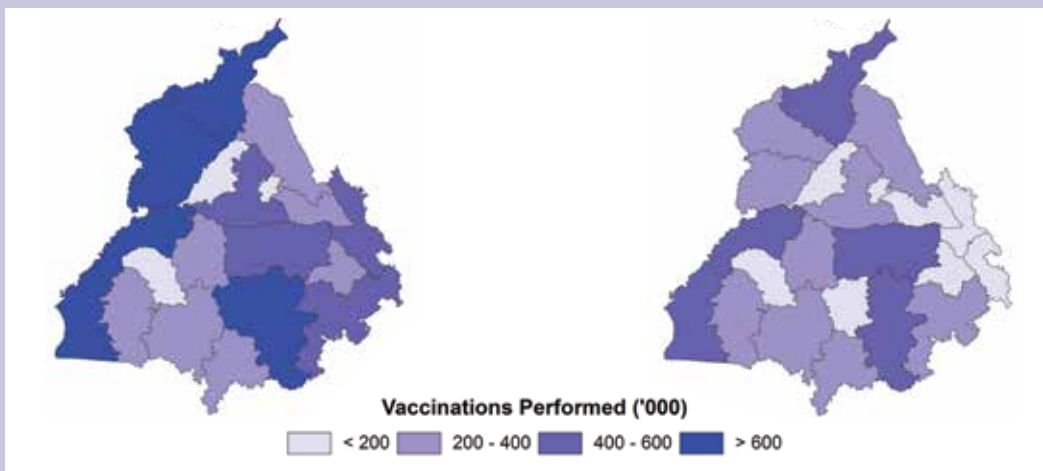
2012-13



Vaccinations Performed for Haemorrhagic Septicaemia

2003-04

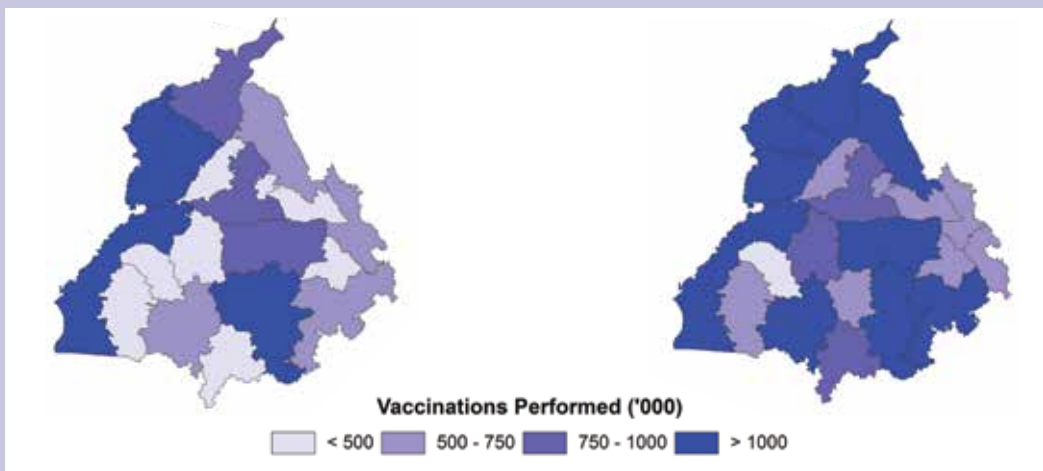
2012-13



Bovine Vaccinations Performed

2003-04

2012-13





V.3. Service Delivery System - Animal Health

TABLE V.3.5: District-wise Bovine Treated

Districts	Bovine Treated ('000)								
	1992-93	1997-98	2003-04	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PUNJAB	2,206	2,954	4,292	4,186	4,256	4,056	4,072	4,921	5,369
Amritsar	157	183	455	235	241	251	225	301	318
Barnala				150	142	155	141	160	168
Bathinda	114	222	297	279	268	276	347	307	337
Faridkot	186	88	92	97	103	105	109	115	128
Fatehgarh Sahib	86	96	170	142	113	131	113	171	176
Firozpur	124	245	219	199	297	219	230	340	345
Gurdaspur	119	178	377	321	322	309	278	360	438
Hoshiarpur	187	99	332	353	341	339	333	379	403
Jalandhar	176	162	321	270	257	177	241	197	326
Kapurthala	62	85	142	135	155	169	167	180	207
Ludhiana	181	252	402	452	453	325	349	568	572
Mansa	84	151	190	171	171	177	176	185	199
Moga		105	173	178	186	141	188	204	206
Patiala	231	287	208	257	227	233	247	286	312
Rupnagar	103	181	225	136	146	137	140	156	160
SAS Nagar (Mohali)				102	123	124	120	136	126
Sangrur	395	412	460	322	337	333	307	371	382
SBS Nagar (Nawanshahr)		91	109	127	128	133	145	161	203
Muktsar		117	118	121	121	191	114	183	167
Tarn Taran				139	123	132	103	163	194

SOURCE: Annual Administrative Reports (1992-93 to 2012-13), Animal Husbandry Department, Punjab.



V.3. Service Delivery System - Animal Health

TABLE V.3.6: District-wise Bovine Castration

Districts	Bovine Castration (in number)								
	1992-93	1997-98	2003-04	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
PUNJAB	17,867	9,009	27,590	19,391	17,225	32,130	14,570	20,530	16,111
Amritsar	1,020	628	1,163	114	192	137	54	38	80
Barnala				2,120	1,982	2,070	1,783	1,958	1,854
Bathinda	1,330	841	1,760	1,250	887	1,040	841	1,087	1,038
Faridkot	2,234	510	611	1,037	1,025	620	540	519	414
Fatehgarh Sahib	727	302	1,054	789	516	531	489	416	402
Firozpur	433	374	1,806	329	446	311	248	217	159
Gurdaspur	480	349	2,605	2,218	2,053	1,943	1,487	1,662	1,149
Hoshiarpur	1,414	405	2,302	3,445	2,419	2,036	2,087	1,982	2,019
Jalandhar	495	24	3,397	582	420	311	0	3,547	1,597
Kapurthala	177	-	1,020	250	515	899	904	1,294	1,213
Ludhiana	1,355	764	1,214	2,486	748	808	701	703	487
Mansa	835	814	819	379	296	258	138	153	103
Moga		311	1,311	822	1,000	1,255	522	718	1,207
Patiala	1,143	521	1,579	623	455	888	1,013	963	594
Ropar	1,062	497	1,470	608	445	371	370	415	297
Sangrur	5,162	2,315	3,518	2,773	2,309	17,175	2,335	2,316	2,154
SAS Nagar (Mohali)				200	184	166	141	166	203
SBS Nagar (Nawanshahr)		17	304	552	499	423	285	1,738	209
Muktsar		337	1,657	1,146	736	835	616	616	605
Tarn Taran				19	98	53	16	22	27

SOURCE: Annual Administrative Reports (1992-93 to 2012-13), Animal Husbandry Department, Punjab.

PART VI : FEED RESOURCES

The state of Punjab is well endowed with availability of feed and fodder resources. While the country is reported to have deficit in dry matter, crude protein and total digestive nutrients, the same has been improving over the years in Punjab. The estimated surplus of these feed resources in the state was about 10, 4.7 and 28.5 million tonnes respectively in 2011.

In Punjab, area under fodder crops has declined from 671 thousand hectare in 2000-01 to 548 thousand hectare in 2010-11, a fall of 2.04 per cent per annum. Despite this decline, there has been an increase in total nutrients and fodder availability, which could be because of use of quality fodder seed and improved agronomic practices.

The state has 2 cooperative cattle feed plants with a combined daily capacity of 300 thousand tonnes, produces 84 thousand tonnes of compound feed. There are five private cattle feed plants with a daily capacity of 215 thousand tonnes. There are many farmers who prepare their own feed according to their requirement.







VI.1. Feed Resources - Fodder

TABLE VI.1.1: Area under Fodder Crops and Gross Sown Area

Districts	Area Under Fodder Crops ('000 ha)						Gross Sown Area ('000 ha)					
	2000-01	2003-04	2007-08	2008-09	2009-10	2010-11	2000-01	2003-04	2007-08	2008-09	2009-10	2010-11
PUNJAB	671	631	539	573	534	540	7,941	7,907	7,870	7,912	7,875	7,883
Amritsar	84	71	32	30	31	31	821	800	424	422	418	424
Barnala			7	15	12	14			244	249	249	261
Bathinda	40	32	30	37	30	31	562	549	555	556	554	556
Faridkot	6	16	14	13	12	13	238	248	255	252	250	254
Fatehgarh Sahib	15	16	14	13	14	13	194	193	193	194	194	187
Firozpur	56	72	36	51	43	50	903	907	875	876	879	890
Gurdaspur	39	30	31	31	33	31	493	498	504	506	507	503
Hoshiarpur	50	26	37	36	35	35	366	359	356	365	359	357
Jalandhar	49	47	41	44	36	36	414	418	422	422	418	407
Kapurthala	33	28	19	19	16	17	271	271	274	275	273	270
Ludhiana	63	66	52	49	49	48	604	605	595	595	597	596
Mansa	22	23	21	28	20	20	367	361	366	369	366	367
Moga	32	40	13	15	19	21	392	393	379	383	383	383
Patiala	45	37	35	34	31	31	595	589	535	536	516	519
Rupnagar (Ropar)	28	35	15	14	13	14	210	216	140	143	141	146
Sangrur	56	50	42	40	40	39	901	872	617	621	621	620
SAS Nagar (Mohali)			25	25	25	24			119	120	120	127
SBS Nagar (Nawanshahr)	24	14	20	19	19	18	178	184	179	184	185	183
Muktsar	29	28	29	26	26	25	431	443	445	449	444	436
Tarn Taran			26	32	31	28			396	397	401	396

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





VI.2. Feed Resources - Availability vs. Requirement

TABLE VI.2.1: District-wise Dry Matter (DM) Availability, Requirement and Balance

Districts	Available/ Required/ Balance	Dry Matter Availability, Requirement and Balance ('000 MT)						
		1997	2003	2007	2008	2009	2010	2011
Amritsar	Available	1,229.4	2,899.0	1,681.1	1,652.4	1,652.4	1,606.9	1,663.4
	Required	4,237.4	3,512.1	1,644.9	1,417.4	1,223.1	1,056.9	914.7
	Balance	-3,008.0	-613.1	36.2	234.9	429.3	550.0	748.7
Barnala	Available			883.2	980.8	980.8		
	Required			686.0	686.0	686.1	686.1	686.2
	Balance			197.2	294.8	294.8		
Bathinda	Available	783.9	1,857.3	1,976.2	2,157.6	2,157.6	2,062.3	2,153.0
	Required	1,278.9	1,477.4	1,307.6	1,281.5	1,258.4	1,238.3	1,221.0
	Balance	-495.0	379.9	668.6	876.1	899.1	824.0	931.9
Faridkot	Available	3,404.2	982.1	1,092.0	1,249.6	1,249.6	1,146.0	1,217.5
	Required	816.7	680.0	616.2	608.5	601.8	595.9	590.7
	Balance	2,587.5	302.1	475.8	641.0	647.8	550.1	626.7
Fatehgarh Sahib	Available	1,845.0	901.2	896.7	957.4	957.4	1,015.5	971.7
	Required	924.4	847.0	821.0	819.5	819.7	821.7	825.5
	Balance	920.6	54.2	75.7	138.0	137.7	193.8	146.1
Firozpur	Available	1,266.9	3,409.9	3,868.1	4,216.1	4,216.1	3,412.7	3,601.7
	Required	2,961.8	2,099.1	2,079.8	2,093.6	2,113.5	2,139.7	2,172.7
	Balance	-1,694.9	1,310.8	1,788.3	2,122.5	2,102.6	1,273.0	1,429.0
Gurdaspur	Available	1,627.4	1,897.6	2,061.1	2,122.2	2,122.2	2,074.9	2,148.8
	Required	2,339.5	2,092.4	1,729.1	1,665.8	1,608.5	1,557.0	1,511.0
	Balance	-712.1	-194.8	332.0	456.4	513.7	518.0	637.8
Hoshiarpur	Available	999.3	1,311.9	1,532.6	1,667.2	1,667.2	1,754.8	1,847.8
	Required	1,591.6	1,577.7	1,289.9	1,247.6	1,209.1	1,174.2	1,142.6
	Balance	-592.3	-265.8	242.7	419.6	458.1	580.6	705.2
Jalandhar	Available	2,600.8	1,722.4	1,662.3	1,779.3	1,779.3	1,838.2	1,834.7
	Required	2,329.0	1,879.4	1,276.9	1,189.6	1,109.7	1,036.5	969.4
	Balance	271.8	-157.0	385.4	589.7	669.6	801.7	865.4
Kapurthala	Available	949.8	1,133.0	1,141.9	1,187.9	1,187.9	1,198.3	1,223.4
	Required	945.0	896.9	735.0	709.4	685.5	663.5	643.0
	Balance	4.8	236.1	406.8	478.5	502.4	534.9	580.4



Districts	Available/ Required/ Balance	Dry Matter Availability, Requirement and Balance ('000 MT)						
		1997	2003	2007	2008	2009	2010	2011
Ludhiana	Available	1,080.0	2,806.2	2,857.6	2,891.1	2,891.1	3,051.6	3,024.3
	Required	3,448.1	2,973.5	2,660.3	2,620.2	2,585.9	2,558.1	2,537.3
	Balance	-2,368.1	-167.3	197.2	271.0	305.2	493.5	487.0
Mansa	Available	847.3	1,275.4	1,341.0	1,442.7	1,442.7	1,409.9	1,504.2
	Required	1,129.9	1,176.9	960.6	928.1	898.7	872.3	848.7
	Balance	-282.6	98.5	380.3	514.6	543.9	537.6	655.5
Moga	Available	576.4	1,655.6	1,972.0	2,229.3	2,229.3	1,993.1	2,014.4
	Required	1,026.9	1,260.8	1,216.3	1,213.5	1,213.7	1,217.5	1,225.2
	Balance	-450.5	394.8	755.6	1,015.9	1,015.6	775.7	789.2
Patiala	Available	3,812.6	2,531.2	2,664.1	2,704.5	2,704.5	2,630.9	2,523.6
	Required	2,327.0	2,304.9	1,667.5	1,571.3	1,483.6	1,403.7	1,331.2
	Balance	1,485.6	226.3	996.6	1,133.2	1,220.9	1,227.2	1,192.5
Rupnagar (Ropar)	Available		707.6	633.8	673.6	673.6	695.4	719.6
	Required		1,244.0	736.6	667.5	606.1	551.4	502.5
	Balance		-536.4	-102.8	6.1	67.5	144.0	217.1
Sangrur	Available		3,977.8	4,179.5	3,246.6	3,246.6	3,239.1	3,289.6
	Required		3,396.8	2,181.0	2,016.5	1,868.4	1,735.0	1,614.9
	Balance		581.0	1,998.5	1,230.1	1,378.2	1,504.1	1,674.7
SAS Nagar (Mohali)	Available			259.9	274.9	274.9		
	Required			704.5	704.5	704.5	704.5	704.4
	Balance			-444.6	-429.6	-429.6		
SBS Nagar (Nawanshahr)	Available	762.7	683.8	839.8	838.7	838.7	850.2	882.3
	Required	998.5	735.3	626.1	610.2	596.5	585.0	576.0
	Balance	-235.8	-51.5	213.7	228.5	242.2	265.2	306.3
Muktsar	Available	2,581.2	1,466.6	1,607.4	1,868.1	1,868.1	1,763.8	1,811.8
	Required	560.9	1,101.6	855.1	821.2	791.0	764.1	740.2
	Balance	2,020.3	365.0	752.3	1,046.9	1,077.1	999.7	1,071.6
Tarn Taran	Available			860.2	1,058.6	1,058.6		
	Required			1,418.0	1,418.0	1,418.1	1,418.2	1,418.2
	Balance			-557.8	-359.5	-359.5		

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



VI.2. Feed Resources - Availability vs. Requirement

TABLE VI.2.2: District-wise Crude Protein (CP) Availability, Requirement and Balance

Districts	Available/ Required/ Balance	Crude Protein Availability, Requirement and Balance ('000 MT)						
		1997	2003	2007	2008	2009	2010	2011
Amritsar	Available	218.4	626.4	338.4	333.7	333.7	325.1	340.1
	Required	417.8	358.7	167.6	144.4	124.5	107.6	93.1
	Balance	-199.4	267.7	170.8	189.3	209.1	217.5	247.0
Barnala	Available			202.0	227.7	227.7		
	Required			68.3	68.3	68.3	68.3	68.3
	Balance			133.8	159.4	159.4		
Bathinda	Available	178.1	457.5	570.9	607.5	607.5	566.9	583.5
	Required	127.6	150.6	132.5	129.7	127.1	124.8	122.8
	Balance	50.4	306.9	438.4	477.8	480.4	442.1	460.6
Faridkot	Available	797.3	206.0	251.5	277.1	277.1	248.6	264.8
	Required	80.6	70.1	62.2	61.3	60.4	59.6	58.9
	Balance	716.7	135.9	189.3	215.8	216.7	189.0	205.9
Fatehgarh Sahib	Available	362.3	182.7	179.2	192.9	192.9	207.4	200.2
	Required	93.7	86.5	81.8	81.5	81.3	81.2	81.3
	Balance	268.6	96.3	97.3	111.4	111.6	126.1	118.9
Firozpur	Available	189.0	705.1	863.1	911.7	911.7	790.2	833.9
	Required	296.5	209.7	209.3	211.0	213.3	216.2	219.9
	Balance	-107.5	495.4	653.7	700.7	698.4	573.9	614.0
Gurdaspur	Available	295.2	371.1	407.2	419.0	419.0	412.4	423.3
	Required	233.4	215.6	186.1	180.2	175.0	170.4	166.4
	Balance	61.9	155.5	221.1	238.8	244.0	242.0	256.9
Hoshiarpur	Available	196.4	203.0	213.3	234.7	234.7	255.4	278.3
	Required	159.6	160.3	130.9	126.5	122.5	118.8	115.4
	Balance	36.8	42.7	82.5	108.2	112.2	136.6	162.9
Jalandhar	Available	532.8	332.6	318.7	341.5	341.5	357.1	360.5
	Required	234.9	196.5	130.9	121.6	113.0	105.2	98.0
	Balance	297.9	136.2	187.8	219.9	228.4	251.9	262.4
Kapurthala	Available	283.4	259.5	223.7	234.5	234.5	234.8	242.3
	Required	94.3	92.7	74.9	72.1	69.4	66.9	64.6
	Balance	189.1	166.9	148.8	162.4	165.1	167.9	177.7



Districts	Available/ Required/ Balance	Crude Protein Availability, Requirement and Balance ('000 MT)						
		1997	2003	2007	2008	2009	2010	2011
Ludhiana	Available	259.4	564.6	578.9	584.9	584.9	619.2	619.6
	Required	351.2	300.2	266.7	262.4	258.7	255.5	253.0
	Balance	-91.7	264.3	312.1	322.5	326.3	363.8	366.6
Mansa	Available	298.5	299.1	366.6	383.4	383.4	364.1	394.4
	Required	110.2	119.2	95.2	91.6	88.3	85.3	82.6
	Balance	188.2	179.8	271.4	291.9	295.1	278.8	311.8
Moga	Available	114.4	338.8	386.2	448.0	448.0	410.5	420.3
	Required	100.8	127.1	123.0	122.9	123.1	123.7	124.7
	Balance	13.6	211.8	263.3	325.1	324.9	286.8	295.6
Patiala	Available	798.8	522.1	544.1	552.4	552.4	534.6	519.3
	Required	232.5	233.5	169.6	160.0	151.2	143.3	136.1
	Balance	566.3	288.6	374.5	392.4	401.2	391.4	383.2
Rupnagar (Ropar)	Available		128.5	101.3	102.9	102.9	116.2	114.9
	Required		123.8	73.7	66.8	60.6	55.1	50.2
	Balance		4.7	27.6	36.2	42.3	61.1	64.8
Sangrur	Available		845.2	895.1	677.0	677.0	674.5	691.5
	Required		346.1	219.1	202.4	187.3	173.8	161.6
	Balance		499.1	676.0	474.6	489.6	500.7	529.9
SAS Nagar (Mohali)	Available			52.2	56.1	56.1		
	Required			69.7	69.7	69.7	69.7	69.7
	Balance			-17.5	-13.6	-13.6		
SBS Nagar (Nawanshahr)	Available	128.7	119.7	142.1	141.8	141.8	149.6	157.5
	Required	98.5	74.6	63.4	61.7	60.3	59.0	58.0
	Balance	30.2	45.0	78.7	80.1	81.6	90.6	99.5
Muktsar	Available	503.3	345.0	460.2	491.6	491.6	454.7	450.9
	Required	56.2	114.5	88.6	85.0	81.7	78.8	76.2
	Balance	447.1	230.6	371.6	406.6	409.9	375.9	374.8
Tarn Taran	Available			72.7	229.6	229.6		
	Required			142.9	142.9	142.9	143.0	143.0
	Balance			-70.2	86.7	86.7		

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



VI.2. Feed Resources - Availability vs. Requirement

TABLE VI.2.3: District-wise Total Digestive Nutrient (TDN) Availability, Requirement and Balance

Districts	Available/ Required/ Balance	Total Digestive Nutrient Availability, Requirement and Balance ('000 MT)						
		1997	2003	2007	2008	2009	2010	2011
Amritsar	Available	1,218.0	4,087.7	2,220.7	2,189.9	2,189.9	2,131.1	2,226.8
	Required	2,616.1	2,139.9	1,004.2	866.0	748.0	647.2	561.0
	Balance	-1,398.1	1,947.8	1,216.5	1,323.9	1,441.8	1,483.9	1,665.9
Barnala	Available			1,286.8	1,448.6	1,448.6		
	Required			420.7	420.7	420.8	420.8	420.9
	Balance			866.1	1,027.8	1,027.8		
Bathinda	Available	1,165.0	2,356.6	2,404.8	2,691.9	2,691.9	2,538.5	2,727.4
	Required	793.1	902.4	803.3	788.2	775.0	763.6	753.9
	Balance	371.9	1,454.2	1,601.4	1,903.7	1,916.9	1,774.9	1,973.6
Faridkot	Available	4,406.6	1,309.1	1,408.2	1,650.6	1,650.6	1,509.8	1,636.8
	Required	512.1	417.7	378.0	373.6	370.0	366.8	364.2
	Balance	3,894.4	891.5	1,030.2	1,277.0	1,280.7	1,143.0	1,272.6
Fatehgarh Sahib	Available	2,398.9	1,204.7	1,181.3	1,267.8	1,267.8	1,365.1	1,316.2
	Required	565.4	514.8	505.9	506.7	508.7	512.1	516.7
	Balance	1,833.6	690.0	675.4	761.2	759.1	853.0	799.5
Firozpur	Available	1,275.5	4,106.4	4,517.6	5,118.6	5,118.6	4,426.4	4,760.7
	Required	1,837.8	1,300.3	1,289.2	1,298.9	1,312.7	1,330.5	1,352.8
	Balance	-562.3	2,806.1	3,228.4	3,819.6	3,805.9	3,095.9	3,407.9
Gurdaspur	Available	1,965.8	2,463.4	2,665.7	2,742.8	2,742.8	2,706.2	2,782.8
	Required	1,445.8	1,284.8	1,079.3	1,042.3	1,009.2	979.8	953.9
	Balance	519.9	1,178.6	1,586.4	1,700.5	1,733.6	1,726.4	1,828.9
Hoshiarpur	Available	1,293.0	1,368.8	1,417.1	1,564.3	1,564.3	1,697.7	1,840.2
	Required	996.6	973.0	795.9	771.1	749.0	729.2	711.5
	Balance	296.4	395.8	621.2	793.2	815.3	968.6	1,128.6
Jalandhar	Available	3,479.8	2,206.0	2,097.3	2,249.1	2,249.1	2,355.0	2,371.0
	Required	1,433.2	1,143.9	777.5	725.5	677.9	634.4	594.5
	Balance	2,046.7	1,062.1	1,319.8	1,523.6	1,571.2	1,720.6	1,776.4
Kapurthala	Available	1,365.2	1,419.3	1,472.5	1,542.0	1,542.0	1,550.3	1,598.2
	Required	590.3	544.1	449.3	434.6	421.0	408.5	397.0
	Balance	774.9	875.2	1,023.2	1,107.5	1,121.0	1,141.9	1,201.2



Districts	Available/ Required/ Balance	Total Digestive Nutrient Availability, Requirement and Balance ('000 MT)						
		1997	2003	2007	2008	2009	2010	2011
Ludhiana	Available	1,596.3	3,723.4	3,795.6	3,840.2	3,840.2	4,066.0	4,065.4
	Required	2,107.2	1,807.9	1,617.1	1,594.7	1,576.4	1,562.4	1,553.1
	Balance	-510.9	1,915.5	2,178.6	2,245.4	2,263.7	2,503.6	2,512.3
Mansa	Available	1,174.5	1,648.9	1,671.7	1,847.9	1,847.9	1,794.0	1,945.4
	Required	704.0	719.2	589.4	570.5	553.8	539.0	526.0
	Balance	470.5	929.7	1,082.3	1,277.4	1,294.1	1,255.1	1,419.3
Moga	Available	760.9	2,215.3	2,489.7	2,878.4	2,878.4	2,674.3	2,742.2
	Required	644.7	776.2	747.2	745.4	745.8	748.5	754.0
	Balance	116.1	1,439.1	1,742.4	2,133.0	2,132.6	1,925.8	1,988.2
Patiala	Available	5,097.1	3,423.4	3,572.9	3,626.1	3,626.1	3,516.5	3,402.6
	Required	1,430.5	1,400.4	1,013.5	956.0	903.9	856.7	814.2
	Balance	3,666.5	2,023.0	2,559.4	2,670.1	2,722.2	2,659.7	2,588.4
Rupnagar (Ropar)	Available		852.7	673.4	685.7	685.7	768.7	762.5
	Required		752.0	446.7	405.7	369.4	337.0	308.2
	Balance		100.7	226.7	280.0	316.4	431.7	454.3
Sangrur	Available		5,473.7	5,699.1	4,364.1	4,364.1	4,339.2	4,473.6
	Required		2,070.5	1,335.3	1,238.3	1,151.2	1,073.0	1,002.7
	Balance		3,403.2	4,363.8	3,125.8	3,212.8	3,266.2	3,470.9
SAS Nagar (Mohali)	Available			337.0	361.8	361.8		
	Required			424.5	424.5	424.4	424.4	424.4
	Balance			-87.5	-62.7	-62.7		
SBS Nagar (Nawanshahr)	Available	860.4	800.9	940.7	940.7	940.7	989.3	1,040.3
	Required	619.3	446.4	380.3	371.4	363.8	357.8	353.4
	Balance	241.0	354.5	560.4	569.3	576.8	631.4	686.9
Muktsar	Available	3,313.0	1,894.2	1,940.5	2,358.8	2,358.8	2,271.8	2,357.3
	Required	356.0	675.5	528.2	508.5	491.2	476.0	462.6
	Balance	2,957.0	1,218.7	1,412.3	1,850.3	1,867.6	1,795.8	1,894.6
Tarn Taran	Available			472.6	1,469.8	1,469.8		
	Required			860.9	860.9	861.0	861.0	861.1
	Balance			-388.3	608.8	608.8		

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



VI.2. Feed Resources - Availability vs. Requirement

TABLE VI.2.4: Availability, Requirement and Surplus/Deficit of Feed Nutrients

(’000 MT)

Year	Dry Matter			Crude Protein			Total Digestible Nutrients		
	Availability	Requirement	Deficit/ Surplus	Availability	Requirement	Deficit/ Surplus	Availability	Requirement	Deficit/ Surplus
1997	24,367	26,916	-2,549	5,156	2,688	2,468	31,370	16,652	14,718
2003	31,218	29,258	1,960	6,506	2,980	3,526	40,554	17,870	22,684
2007	34,011	25,212	8,799	7,167	2,556	4,611	42,265	15,446	26,819
2008	35,199	24,290	10,909	7,448	2,462	4,986	44,839	14,904	29,935
2009	35,199	23,482	11,717	7,448	2,379	5,069	44,839	14,433	30,406
2010	32,138	22,780	9,358	6,731	2,306	4,425	40,808	14,029	26,779
2011	32,826	22,175	10,651	6,905	2,244	4,661	42,157	13,686	28,471

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







VI.3. Feed Resources - Consumption

TABLE VI.3.1: Feed and Fodder Consumption*(kg/animal/per day)*

Year	Green Fodder	Dry Fodder	Concentrate
1992-93	18.37	5.81	0.66
1997-98	19.03	5.47	0.60
2003-04	17.45	4.46	0.52
2006-07	25.44	5.27	0.58
2008-09	25.39	5.12	1.89
2010-11	26.08	5.73	1.92
2011-12	27.03	5.09	2.06
2012-13	26.45	5.46	1.90

Source: Integrated Sample Survey Reports (1992-93 to 2012-13), Animal Husbandry Department, Punjab.





PART VII : AGRICULTURE

This section documents information on the resources that are available for dairy development. It provides district-wise trends in area and production of various crops, structure of land holding, land use pattern and sources of irrigation.

Historically, Punjab has been a surplus state in food grain production. For decades, it has been a model state for agricultural development, which supported industrial growth and generated one of the highest per capita income in the country. More than 90 per cent of the net sown area is under irrigation. There is depletion of ground water table and 110 blocks are categorised as “over exploited”. Of the five agro climatic zones in Punjab, groundnut water depletion is intense in central plain zone as compared to sub-mountain undulating and undulating plain zones in northern regions.

With preference to wheat-rice cropping pattern, more than 80 per cent of gross sown area is allotted to these crops; whereas area under pulses, oilseeds, cotton, sugarcane, permanent pastures and grazing lands is shrinking. This water intensive cropping pattern has increased soil salinity/alkalinity, water logging as well as imbalances in soil micro-nutrients. A “The Punjab Preservation of Sub-soil Water Act” has been promulgated in 2009.





VII.1. Agro-Climatic Zones

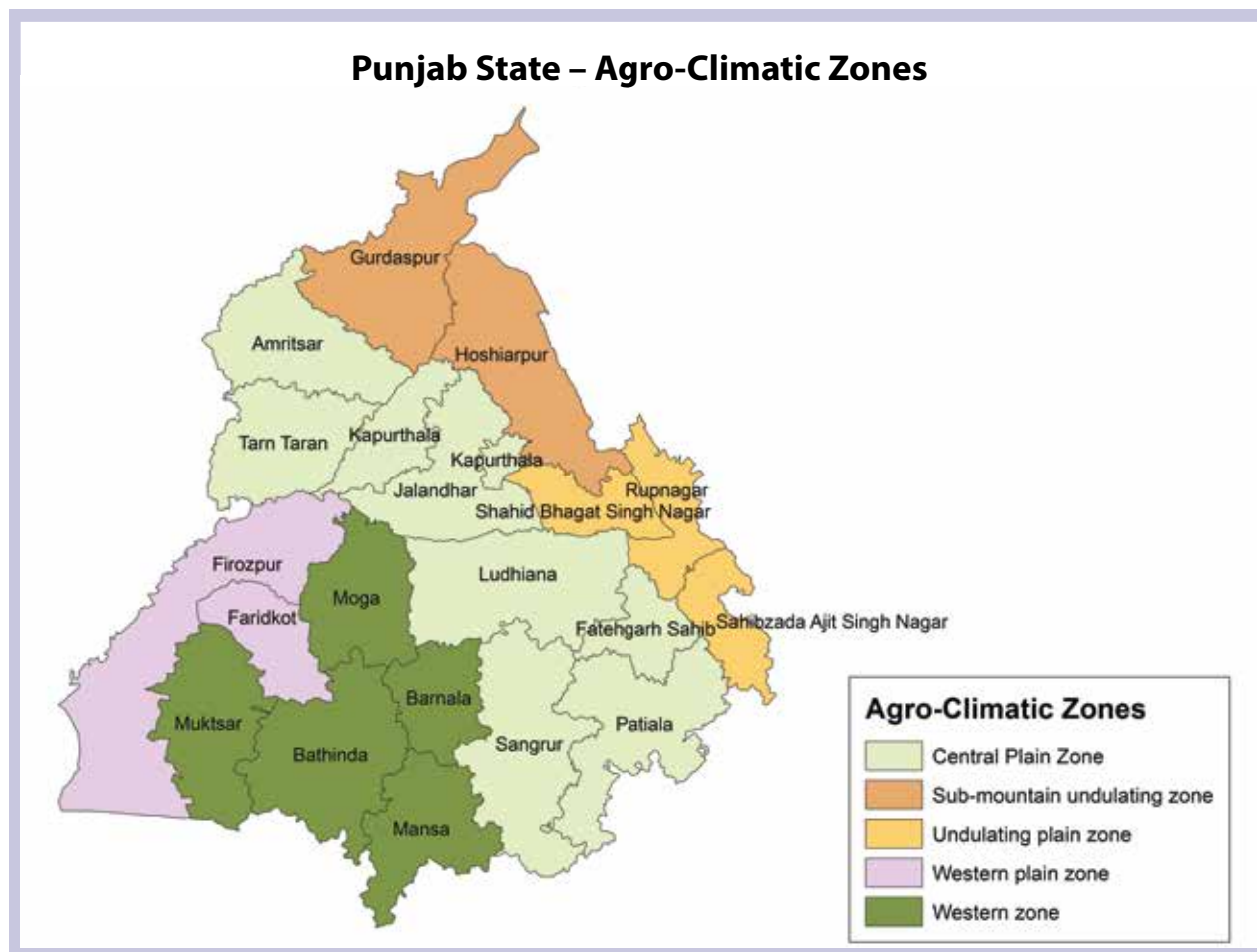


TABLE VII.1.1: Details of Agro-climatic Zones

Sr	Agro-climatic Zones	Districts Covered	Major Crops Grown	Average Rainfall (mm)	Cropping Intensity (%)
1	Sub-mountain undulating zone	Gurdaspur and Hoshiarpur	Wheat, paddy, sugarcane	1,000	177
2	Undulating plain zone	Rupnagar (Ropar) & SBS Nagar (Nawanshahr)	Wheat, paddy, sugarcane	1,000	187
3	Central plain zone	Amritsar, Tarn Taran, Kapurthala, Jalandhar, Ludhiana, Fatehgarh Sahib, Sangrur and Patiala	Wheat, paddy	630-700	189
4	Western plain zone	Firozpur and Faridkot	Wheat, paddy, cotton	630-700	190
5	Western zone	Moga, Bathinda, Mansa, Muktsar, Sangrur & Barnala	Wheat, paddy, cotton	630-700	193

SOURCE: Compiled from <http://punjabrevenue.nic.in/for%20website/agro-climatic%20zone.htm> and Directorate of Economics and Statistics, Ministry of Agriculture, Govt. of India.



VII.2. Land Use Pattern

TABLE VII.2.1: District-wise Land Use Pattern

(‘000 ha)

Districts	Reported Area		Forest Area		Fallow Land		Permanent Pasture and Grazing Land		Net Sown Area	
	2000-01	2010-11	2000-01	2010-11	2000-01	2010-11	2000-01	2010-11	2000-01	2010-11
PUNJAB	5,032.7	5,032.7	280.2	293.8	43.6	36.6	4	3.7	4,250	4,157.8
Amritsar	505.0	263.6	12.8	9.6	0.4	4.2	—	—	446.2	217.1
Barnala		141.0		1.7		0		0.1		124.3
Bathinda	336.7	336.7	7.5	5.9	0	0	—	—	298.9	296.5
Faridkot	146.9	146.9	2	2	0.8	0	—	—	132.5	127.5
Fatehgarh Sahib	114.8	114.9	1.1	1.1	0	0	0*	0*	102.7	101.9
Firozpur	525.7	542.9	11.8	11.8	15.8	0	—	—	464.1	473.5
Gurdaspur	350.7	350.7	36.8	36.1	0	0.8	—	0*	291.9	286.2
Hoshiarpur	339.3	339.3	108.7	108.4	0.2	0.3	0.5	0.5	215.3	199.8
Jalandhar	266.2	266.2	4	5.6	0*	0	0.7	—	238.1	236.4
Kapurthala	167.9	166.5	1.7	1.5	0.4	0	0*	—	134.8	133.6
Ludhiana	368.3	351.1	10	10	5.6	0	—	—	304.2	300.7
Mansa	213.9	213.9	2.7	2.7	1.3	6.6	—	—	203.8	189.9
Moga	223.4	223.4	2	2.6	2.6	0	—	—	197.4	197.5
Patiala	371.5	322.2	15.4	12.4	3.5	3.9	0*	0*	303.4	263
Rupnagar (Ropar)	209.5	139.1	51.8	36.6	4.2	1.3	2.8	1.6	125.9	79.1
Sangrur	502.4	361.5	7	5.2	0.3	0	0*	0.2	456.2	312.6
SAS Nagar (Mohali)		120.9		17.6		3.8		1.3		77.7
SBS Nagar (Nawanshahr)	126.6	126.6	1.2	16.2	0.7	1.7	—	—	100.6	96.6
Muksar	263.9	263.9	3.8	1.8	7.9	14	—	—	234	225.8
Tarn Taran		241.4		5.2		0		—		218

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

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

*Negligible.





VII.3. Area and Production

TABLE VII.3.1: District-wise Area and Production of Cereals and Pulses

Districts	Cereals						Pulses					
	Area ('000 ha)			Production ('000 MT)			Area ('000 ha)			Production ('000 MT)		
	2004-10*	2011-12	2012-13	2004-10*	2011-12	2012-13	2004-10*	2011-12	2012-13	2004-10*	2011-12	2012-13
PUNJAB	6,343	6,487	6,502	26,190	29,076	28,490	29.9	18.1	14.8	24.8	15.8	13.8
Amritsar	485	376	372	1,759	1,434	1,416	2.0	0.4	0.5	1.4	0.3	0.4
Barnala	216	221	221	1,022	1,078	1,060	0.9	0.6	0.4	1.0	0.7	0.4
Bathinda	344	355	363	1,451	1,676	1,681	1.3	0.7	0.6	1.1	0.5	0.5
Faridkot	207	218	219	865	1,021	997	1.0	0.5	0.4	0.8	0.5	0.3
Fatehgarh Sahib	171	171	170	766	813	819	0.2	0	0	0.2	0	0
Firozpur	641	654	664	2,665	2,870	2,953	3.6	2.6	2.2	3.3	2.7	2.9
Gurdaspur	440	442	439	1,571	1,772	1,647	2.6	2.5	1.9	1.3	1.1	1
Hoshiarpur	275	287	280	944	1,204	1,129	1.4	1.4	0.7	0.8	1.2	0.5
Jalandhar	333	344	342	1,329	1,486	1,425	1.4	0.6	0.7	1.3	0.6	0.7
Kapurthala	225	232	229	910	994	964	0.2	0	0	0.2	0	0
Ludhiana	513	517	516	2,354	2,485	2,418	3.5	1.8	1.8	3.0	1.6	1.5
Mansa	240	246	251	1,009	1,137	1,084	0.7	0.4	0.4	0.6	0.4	0.3
Moga	345	350	352	1,545	1,720	1,665	1.6	0.7	0.5	1.4	0.6	0.5
Patiala	494	473	469	2,135	2,211	2,050	1.9	1.4	0.6	2.0	1.8	0.8
Rupnagar (Ropar)	137	123	124	484	504	503	1.0	0.1	0.1	0.6	0.1	0.1
Sangrur	662	563	563	2,996	2,774	2,780	3.5	1.3	1.1	3.2	1.2	1.2
SAS Nagar (Mohali)	86	90	90	322	392	364	1.1	0.8	0.7	1.0	0.6	0.4
SBS Nagar (Nawanshahr)	249	146	149	573	668	667	0.2	0.1	0	0.2	0.1	0
Muksar	286	320	328	1,223	1,441	1,471	1.1	0.5	0.5	1.1	0.7	0.6
Tarn Taran	358	359	361	1,331	1,396	1,397	2.7	1.7	1.7	2.1	1.1	1.7

*Average from 2004-05 to 2009-10.

Fazilka and Pathankot figures are included in Firozpur and Gurdaspur respectively.

SOURCE: Ministry of Agriculture, Govt. of Punjab.





VII.3. Area and Production

TABLE VII.3.2: District-wise Area and Production of Food Grains and Oilseeds

Districts	Food Grains						Oilseeds					
	Area ('000 ha)			Production ('000 MT)			Area ('000 ha)			Production ('000 MT)		
	2004-10*	2011-12	2012-13	2004-10*	2011-12	2012-13	2004-10*	2011-12	2012-13	2004-10*	2011-12	2012-13
PUNJAB	6,373	6,505	6,517	26,215	29,092	28,504	70.2	49.9	51.4	84.0	67.3	69.4
Amritsar	487	376	373	1,760	1,434	1,416	4.1	2.5	2.2	3.4	2.7	1.4
Barnala	217	222	221	1,023	1,079	1,060	0.7		1	1.0		1
Bathinda	345	356	364	1,452	1,677	1,682	4.9	2	2	5.7	3	2
Faridkot	207	219	219	865	1,022	997	0.6		0.1	0.6		0.1
Fatehgarh Sahib	172	171	170	766	813	819	2.3	1.1	2	3.7	1.8	4.2
Firozpur	645	657	666	2,668	2,873	2,956	9.7	6.3	7.6	10.4	8.6	9.3
Gurdaspur	443	445	441	1,572	1,773	1,648	4.5	3.8	3.9	4.0	4.1	3.2
Hoshiarpur	277	288	281	944	1,205	1,130	10.7	9.6	6.7	13.0	11.9	10.4
Jalandhar	334	345	343	1,330	1,487	1,426	7.8	5.7	4.8	11.6	7.7	7.8
Kapurthala	225	232	229	910	994	964	3.4	2.5	2.3	5.1	3.8	3.2
Ludhiana	517	519	518	2,357	2,487	2,420	3.2	2.3	2.2	5.1	4.7	3.1
Mansa	240	246	251	1,009	1,137	1,084	3.2	2.1	1.0	3.4	3.1	2.0
Moga	346	351	353	1,546	1,721	1,666	1.0		1.0	1.0		1.0
Patiala	495	474	470	2,137	2,213	2,051	2.4	0.6	2.0	3.3	1.2	3.6
Rupnagar (Ropar)	138	123	124	485	504	503	2.2	2.1	2.1	2.2	2.0	2.0
Sangrur	666	564	564	3,000	2,775	2,781	2.1		2.1	2.3		3.2
SAS Nagar (Mohali)	87	91	91	322	393	364	1.3	2.2	2.8	1.8	3.3	5.0
SBS Nagar (Nawanshahr)	249	146	149	573	668	667	3.2	4.0	3.0	4.4	6.2	5.0
Muksar	287	321	329	1,224	1,442	1,472	2.0	1.1	1.0	2.1	1.1	1.0
Tarn Taran	360	361	363	1,333	1,397	1,399	2.9	1.0	1.6	1.9	1.1	0.9

*Average from 2004-05 to 2009-10.

Fazilka and Pathankot figures are included in Firozpur and Gurdaspur respectively.

SOURCE: Ministry of Agriculture, Govt. of Punjab.





VII.3. Area and Production

TABLE VII.3.3: District-wise Area and Production of Sugarcane and Cotton

Districts	Sugarcane						Cotton					
	Area ('000 ha)			Production ('000 MT)			Area ('000 ha)			Production ('000 bales)		
	2004-10*	2011-12	2012-13	2004-10*	2011-12	2012-13	2004-10*	2011-12	2012-13	2004-10*	2011-12	2012-13
PUNJAB	87	80	83	5,247	5,653	5,919	554	515	481	2,305	1,621	1,627
Amritsar	5	3	4	317	203	283	1			2		
Barnala			1			70	12	11	9	63	44	32
Bathinda							155	155	151	675	573	581
Faridkot	1			32			24	17	15	96	52	46
Fatehgarh Sahib	3	2	3	182	151	258						
Firozpur	2	1	2	100	73	162	135	124	113	531	339	294
Gurdaspur	23	25	25	1,453	1,864	1,818						
Hoshiarpur	21	20	19	1,158	1,293	1,321						
Jalandhar	11	9	10	618	599	651						
Kapurthala	4	3	3	232	221	194						
Ludhiana	2	2	2	122	161	135	2	1	1	7	3	2
Mansa							91	93	90	375	338	317
Moga	0.2			10			6	3	2	27	5	9
Patiala	2	3	2	154	264	184	1	1	1	2	3	3
Rupnagar (Ropar)	4	2	3	231	149	227						
Sangrur	2	2	2	149	163	161	19	11	11	66	33	44
SAS Nagar (Mohali)	2	1	1	79	65	57						
SBS Nagar (Nawanshahr)	7	6	5	394	407	327						
Muktsar	0.3			17			114	98	88	488	228	299
Tarn Taran	1	1	1	43	40	71	2	1		8	3	

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

SOURCE: Ministry of Agriculture, Govt. of Punjab.



VII.4. Land Holding

TABLE VII.4.1: Operational Holdings in Punjab

Size of Holding (ha)	Total Holdings		Average Size of Holding (ha)
	Number ('000)	Area ('000 ha)	
Marginal	164	101	0.62
Small	195	269	1.38
Semi-medium	325	855	2.63
Medium	298	1,713	5.75
Large	70	1,029	14.70
All Classes	1,053	3,967	3.77

SOURCE: Agricultural Census Database, 2010-11, Ministry of Agriculture, Govt of India.

TABLE VII.4.2: Net Irrigated Area under Different Sources of Irrigation

Particulars	1997-98	2001-02	2003-04	2005-06	2007-08	2008-09	2010-11
Gross Sown Area ('000 ha)	7,831	7,941	7,907	7,868	7,870	7,912	7,883
Net Sown Area ('000 ha)	4,238	4,254	4,240	4,192	4,187	4,169	4,158
Net Irrigated Area ('000 ha)	4,004	4,056	4,097	4,019	4,112	4,079	4,070
Sources (net irrigated area) ('000 ha)							
Canals	1,296	9,69	1,041	981	1,142	1,112	1,116
Tanks	0	0	0	0	0	0	0
Wells and Tube Wells	2,705	3,084	3,047	2,912	2,967	2,963	2,954
Other Sources	3	3	9	126	4	4	0

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



VII.5. Rainfall

TABLE VII.5.1: District- wise Average Annual Rainfall

Districts	Average Rainfall (mm)				
	2009	2010	2011	2012	2013
Amritsar	276.4	478.8	546.3	469.1	685.8
Barnala		391.7	303.2	211.6	275.6
Bhatinda	252.2	357.3	493.7	215.9	592.5
Faridkot	323	252.2	411.8	177.8	796.9
Fatehgarh	161.7	304.9	614.5	64.9	695.3
Firozpur	119.3	133	164.2	281.5	65.5
Gurdaspur	599.2	918.1	968.9	1,178.7	1,499.1
Hoshiarpur	602.1	693.3	741.6	442.5	586
Jalandhar	615.4	513.2	571.7	399.3	593.8
Kapurthala	756.5	440.5	697.3	597.9	696.7
Ludhiana	559.8	563.9	700.8	308.3	554.5
Mansa		136.5	186.7	93.9	263.2
Moga	328.8	407.9	605.9	140.1	606.4
Patiala	516.5	798	679.9	371.6	504
Rupnagar (Ropar)	685.6	1,020.9	885.1	782.9	957.8
Sangrur	324.5	515.8	430.4	214.4	325.4
SAS Nagar (Mohali)		1,086	370.4	415.9	646.3
SBS Nagar (Nawanshahr)	547.5	758.9	1,081	406.6	835.7
Muktsar	176.9	262.4	367.1	74.6	584.3
TaranTaran					

SOURCE: Hydromet Division, India Meteorological Department, Ministry of Earth Sciences. Govt. of India, www.imd.gov.in/selection/hydro/distrainfall/webtrain/punjab.



VII.6. Ground Water Status

TABLE VII.6.1: Distribution of Blocks According to Ground Water Status

Districts	Number of Blocks					
	Semi Critical		Critical		Over Exploited	
	2004	2009	2004	2009	2004	2009
PUNJAB	4	2	5	3	103	110
Amritsar					16	8
Barnala						3
Bathinda				2	4	3
Faridkot					2	2
Fatehgarh Sahib					5	5
Firozpur			1		7	8
Gurdaspur	1	1	2	1	7	8
Hoshiarpur	2	1			2	4
Jalandhar					10	10
Kapurthala					5	5
Ludhiana			1		10	11
Mansa					5	5
Moga					5	5
Patiala	1				8	8
Rupnagar (Ropar)			1		2	3
Sangrur					12	9
SAS Nagar (Mohali)						2
SBS Nagar (Nawanshahr)					3	3
Muksar	NA	NA	NA	NA	NA	NA
Tarn Taran						8

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

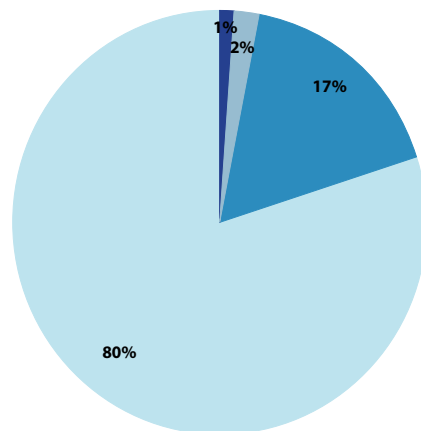
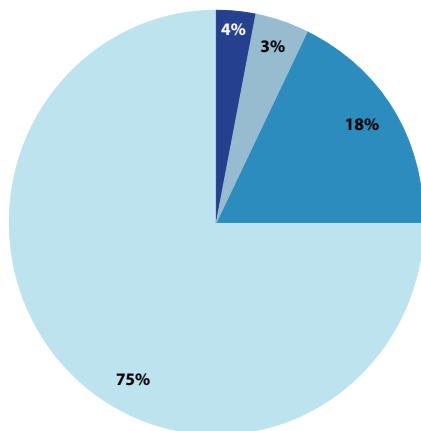
NOTE: Total Assessed blocks was 137 in 2004 and 138 in 2009.



Status of Ground Water (% of Blocks)

2004

2009

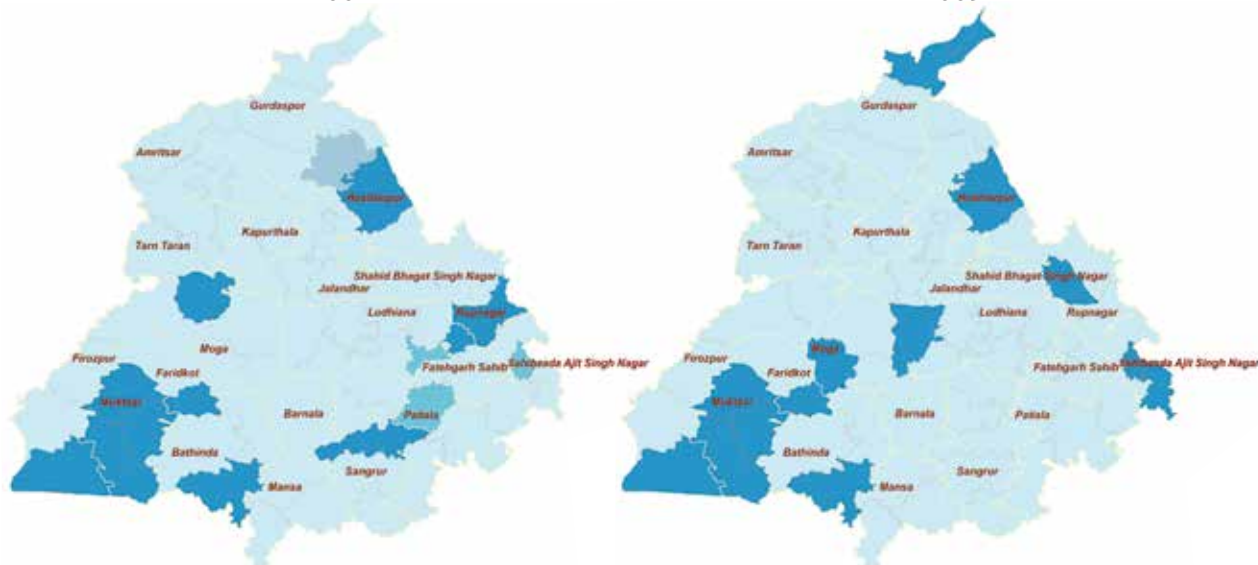


Safe Over exploited Critical Semi critical

Blocks-wise Groundwater Status

2004

2009



Safe Semi-critical Critical Over-exploited





GLOSSARY

AI	: Artificial Insemination is the process of deliberate introduction of sperm into the female reproductive tract for impregnation.
Bovine	: large ruminants like cattle, buffaloes, yak and mithun.
Breedable	: female animals that have attained the age of puberty.
Breeding Tract	: 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	: approximate amount of protein in the feed.
DM	: dry biomass available from feed and fodder.
Dry Animal	: adult animals calved at least once but not in-milk at present.
Food Grains	: cereals and pulses.
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	: animals native to a particular area.
In-milk Animals	: animals which are lactating.
Irrigation Intensity	: $(\text{Gross irrigated area}/\text{Net irrigated area}) * 100$.
Lactation Length	: number of days the animal secretes milk.
Lactation Yield	: total milk production over period of 300/305 days.
Literacy Rate	: percentage of literates in the age group above six years.
Livestock	: domesticated mammals.
Male to Female Ratio	: number of males to females.
Milch Animals	: 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 possessing less than one hectare of operational holding.
Small Holdings	: greater than one hectare and less than two hectare of operational holding.
Semi Medium	: greater than two and less than four hectare of operational holding.
Medium Holdings	: are more than four and less than ten hectare of operational holding.
Large Holdings	: are those larger than ten hectare of operational holding.
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	: ratio of females to 1,000 males in a population.
Small Ruminants	: sum of sheep and goats.
TDN	: 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.



National Dairy Development Board

Anand 388 001

GUJARAT

Phone : (02692) 260148 / 260149 / 260160

Fax : (02692) 260157 / 260159