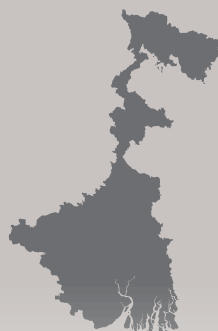




National Dairy
Development
Board

DAIRYING IN



WEST BENGAL

A STATISTICAL PROFILE 2017



District Map of West Bengal





FOREWORD

In this publication “Dairying in West Bengal - A Statistical Profile 2017”, the major highlights are: trend in human demographics, livestock population and production; inputs for enhancement of productivity such as breeding, health and nutrition. This publication includes statistical tables and thematic maps on selected parameters along with time series data of districts wherever available.

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 various development interventions. We hope that a wide range of readers, students, researchers, veterinarians, planners, scientists, administrators, policy makers and professionals in government and non-governmental organisations, will find this publication useful. This publication 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 putting together data in a systematic and comprehensible manner, some errors cannot be ruled out.

This publication “Dairying in West Bengal - A Statistical Profile 2017” is amongst a series of similar publications for different states being brought out by National Dairy Development Board (NDDB).

Dilip Rath

Chairman, NDDB

April 2017

Anand, Gujarat



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PART I : GENERAL STATISTICS

West Bengal is the thirteenth largest state in terms of area but fourth largest in terms of population in India. Though the state's population has grown at a slower pace (14 per cent) than the country (18 per cent) as a whole during the last decade, yet West Bengal stands amongst the most densely populated states in the country. This imposes severe burdens on infrastructure and land availability. The two districts adjoining Kolkata - Howrah and North 24 Parganas, have a high population density of 3,306 & 2,445 persons per sq. km., respectively.

Urban population is growing at a faster rate than rural population; the rate of urbanization being highest in the districts of Malda, South 24 Parganas and Murshidabad. The number of towns (municipal and non-municipal) has gone up from 376 during the year 2001 to 913 during 2011. Meanwhile, the number of villages has come down marginally from 37,945 in 2001 to 37,478 in 2011.

West Bengal is one of the largest economy in the country and contributed about 6.75 per cent of country's GDP in 2013-14 at current price. Agriculture and allied sector contributed 21.7 per cent to the GDP of the state.

Education is a crucial indicator to measure the progress of any society. West Bengal has witnessed a phenomenal change in its literacy profile over the last couple of decades.





I.1. West Bengal at a Glance

TABLE I.1.1: General Statistics: West Bengal vs. India

Particulars	Unit	Year	West Bengal	India
State Geography & Rural Infrastructure				
Geographical area	'000 sq km	2011	88.8	3,287.3
Districts	Nos	"	19	640
Talukas	"	"	341	5,924
Villages	'000	"	40.2	640.9
Households	Million	"	20.4	249.5
Rural Households				
2001	'000	2001	11,162	137,414
2011	"	2011	13,717	168,565
Rural House Hold with Electricity				
2001	%	2001	20	44
2011	"	2011	40	55
Rural House Hold with Tap water supply				
2001	%	2001	7	24
2011	"	2011	11	31
Human Population				
Population	Millions	2011	29.1	1,210.1
Urban (% to total)	%	"	31.9	31.2
Rural (% to total)	"	"	68.1	68.8
Density of population	Persons/ sq.km	"	947	382
Scheduled castes (% to total)	%	"	23.5	16.6
Scheduled tribes (% to total)	"	"	5.8	8.6
Sex ratio	Ratio	"	947	943
Literacy rate (excluding population of 0 to 6 age group)				
Male	%	2011	82.7	80.9
Female	%	"	71.2	64.6
Urban	%	"	85.5	84.1
Rural	%	"	73.0	67.8
Per capita income (at current prices)	₹	2013-14	70,059	74,380
Livestock population				
	Million	2012	30.3	512.0
Bovine population	"	"	17.1	299.9
Indigenous Cattle	"	"	13.7	151.2
Crossbred Cattle	"	"	2.8	39.7
Buffalo	"	"	0.6	108.7
Small ruminants	"	"	12.6	200.2
Poultry	"	"	52.8	729.2
Livestock population				
	Million	2007	37.4	529.7
Bovine population	"	"	19.9	304.8
Indigenous Cattle	"	"	16.5	166.0
Crossbred Cattle	"	"	2.6	33.1
Buffalo	"	"	0.8	105.3
Small ruminants	"	"	16.6	212.1
Poultry	"	"	86.2	648.9



I.1. West Bengal at a Glance

TABLE I.1.1: General Statistics: West Bengal vs. India

Particulars	Unit	Year	West Bengal	India
Number of major cattle breeds	Nos	2015	1	40
Number of major buffalo breeds	"	"	-	13
Milk Production				
Total Milk production	000MT	2015-16	5,038	155,490
Crossbred	"	"	1,610	41,931
Indigenous	"	"	3,058	31,714
Buffalo	"	"	240	76,459
Goats	"	"	130	5,378
Per capita milk availability	Grams/day	"	145	337
Egg production	Millions	"	6,011	82,929
Meat production	000 MT	"	686	7,020
Marine & inland fish production	"	2014-15	1,678	10,164
Wool production	000 Kg	2015-16	748	43,581
Veterinary Infrastructure & Services				
Veterinary institutes	Nos	2015-16	3,382	62,422
Semen Production Center	"	"		54
AI centers	"	"	5,687	84,128
AI done	000	2014-15	4,079	63,204
Vaccinations Done				
H.S. vaccination	"	"	255	
B.Q. vaccinations	"	"	236	
FMD vaccinations	"	"	4,266	
Treatment (Total)	"	2013-14	167	
Agricultural Resources				
Forest cover	%	2013-14	13.5	23.3
Pasture and Grazing land	000 Ha	"	2	10,258
Pasture & Grazing Land (% to total reporting area)	%	"	0.02	3.3
Area under fodder crops	000 Ha	"	3	9,831
Gross irrigated area (% to Gross Cropped Area)	%	"	58.9	47.7
Cropping intensity	"	"	184	142
Irrigation intensity	"	"	183	141
Production of major crops				
Cereals	'000 MT	2014-15	16,295	234,871
Pulses	"	"	237	17,152
Oilseeds	"	"	901	27,511
Jute	'000 bales (180 kg Each)	"	8,341	10,618
Sugarcane	'000 MT	"	2,106	362,333
Ground water status (2011 vs 2009)				
Safe	% of blocks	2011 & (2009)	80 (86)	69 (73)
Semi Critical	"	"	20 (14)	11 (9)
Critical	"	"	0 (0)	3 (3)



I.1. West Bengal at a Glance

TABLE I.1.1: General Statistics: West Bengal vs. India

Particulars	Unit	Year	West Bengal	India
Over exploited	"	"	0 (0)	16 (14)
Salinity Affected	"	"	0 (0)	1 (1)

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

- 18th and 19th Livestock Census, Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture and Farmers Welfare, Govt. of India.
- Minutes of the Meeting of Technical Committee on Direction for improvement of Animal Husbandry Statistics held during 16th to 17th June, 2016, Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture and Farmers Welfare, Govt. of India.
- Dynamic Ground Water Resources of India as on 2009 and 2011, Central Ground Water Board, Ministry of Water Resources, River Development and Ganga Rejuvenation, Govt. of India.
- Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare, Govt. of India.
- Ministry of Statistics and Programme Implementation, Govt. of India.

TABLE I.1.2: Formation of Districts in West Bengal

New District	Year of formation	Carved out of
Paschim Medinipur	2002	Medinipur
Purba Medinipur		
Alipurduar	2014	Jalpaiguri
Kalimpong	2017	Darjeeling
Jhargram	2017	Paschim Medinipur

SOURCE: District Administration Websites of Govt. of West Bengal.





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
WEST BENGAL	29,616.0	28,132.9	57,748.9	11,850.0	10,577.3	22,427.3	41,466.0	38,710.2	80,176.2
Bankura	1,515.5	1,442.0	2,957.4	120.6	114.7	235.2	1,636.0	1,556.7	3,192.7
Bardhaman	2,239.2	2,109.3	4,348.5	1,349.2	1,197.9	2,547.0	3,588.4	3,307.1	6,895.5
Birbhum	1,414.1	1,342.9	2,757.0	132.5	125.9	258.4	1,546.6	1,468.8	3,015.4
Dakshin Dinajpur	669.8	636.5	1,306.3	100.5	96.3	196.9	770.3	732.8	1,503.2
Darjeeling	556.6	532.1	1,088.7	274.0	246.4	520.4	830.6	778.5	1,609.2
Howrah	1,083.4	1,037.7	2,121.1	1,158.5	993.5	2,152.0	2,241.9	2,031.2	4,273.1
Hooghly	1,699.8	1,654.4	3,354.2	889.8	798.0	1,687.7	2,589.6	2,452.4	5,042.0
Jalpaiguri	1,437.2	1,357.1	2,794.3	314.0	292.9	606.9	1,751.1	1,650.0	3,401.2
Cooch Behar	1,157.2	1,096.3	2,253.5	114.9	110.8	225.6	1,272.1	1,207.1	2,479.2
Kolkata	0.0	0.0	0.0	2,500.0	2,072.8	4,572.9	2,500.0	2,072.8	4,572.9
Malda	1,565.7	1,483.9	3,049.5	123.8	117.2	240.9	1,689.4	1,601.1	3,290.5
Medinipur	4,407.9	4,219.0	8,626.9	508.5	475.5	983.9	4,916.4	4,694.4	9,610.8
Murshidabad	2,633.2	2,500.6	5,133.8	371.8	360.9	732.7	3,005.0	2,861.6	5,866.6
Nadia	1,867.7	1,757.6	3,625.3	499.2	480.3	979.5	2,366.9	2,238.0	4,604.8
North 24 Parganas	2,102.2	1,981.1	4,083.3	2,536.5	2,314.4	4,850.9	4,638.8	4,295.5	8,934.3
Purulia	1,165.1	1,116.0	2,281.1	133.0	122.4	255.4	1,298.1	1,238.4	2,536.5
South 24 Parganas	2,997.3	2,823.2	5,820.5	567.7	518.5	1,086.2	3,565.0	3,341.7	6,906.7
Uttar Dinajpur	1,104.2	1,043.1	2,147.4	155.5	138.9	294.4	1,259.7	1,182.1	2,441.8

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





I.2. Social Statistics: Human Population

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

Districts	Rural ('000)			Urban ('000)			Total ('000)		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
WEST BENGAL	31,844.9	30,338.2	62,183.1	14,964.1	14,128.9	29,093.0	46,809.0	44,467.1	91,276.1
Bankura	1,685.8	1,611.1	3,296.9	152.3	147.5	299.8	1,838.1	1,758.6	3,596.7
Bardhaman	2,373.8	2,265.5	4,639.3	1,593.1	1,485.2	3,078.3	3,966.9	3,750.7	7,717.6
Birbhum	1,562.0	1,491.0	3,053.0	228.9	220.5	449.4	1,790.9	1,711.5	3,502.4
Dakshin Dinajpur	737.8	702.2	1,440.0	119.4	116.9	236.3	857.2	819.1	1,676.3
Darjeeling	567.0	551.9	1,118.9	370.3	357.7	728.0	937.3	909.6	1,846.8
Howrah	909.5	866.4	1,775.9	1,591.3	1,482.8	3,074.1	2,500.8	2,349.2	4,850.0
Hooghly	1,722.9	1,667.7	3,390.6	1,091.7	1,036.8	2,128.5	2,814.7	2,704.5	5,519.1
Jalpaiguri	1,437.3	1,375.2	2,812.5	545.8	514.6	1,060.4	1,983.1	1,889.8	3,872.8
Cooch Behar	1,304.9	1,224.7	2,529.7	146.6	142.8	289.4	1,451.5	1,367.5	2,819.1
Kolkata	0.0	0.0	0.0	2,356.8	2,139.9	4,496.7	2,356.8	2,139.9	4,496.7
Malda	1,768.3	1,678.8	3,447.2	283.2	258.5	541.7	2,051.5	1,937.3	3,988.8
Murshidabad	2,917.8	2,785.3	5,703.1	709.7	691.0	1,400.7	3,627.6	3,476.2	7,103.8
Nadia	1,921.1	1,807.6	3,728.7	732.7	706.2	1,438.9	2,653.8	2,513.8	5,167.6
North 24 Parganas	2,196.6	2,081.1	4,277.6	2,922.8	2,809.3	5,732.2	5,119.4	4,890.4	10,009.8
Paschim Medinipur	2,641.7	2,549.1	5,190.8	366.2	356.5	722.7	3,007.9	2,905.6	5,913.5
Purba Medinipur	2,322.6	2,180.6	4,503.2	307.3	285.4	592.7	2,629.8	2,466.0	5,095.9
Purulia	1,304.2	1,252.6	2,556.8	192.8	180.5	373.3	1,497.0	1,433.1	2,930.1
South 24 Parganas	3,109.2	2,965.0	6,074.2	1,064.6	1,023.2	2,087.8	4,173.8	3,988.2	8,162.0
Uttar Dinajpur	1,362.5	1,282.4	2,644.9	188.6	173.6	362.2	1,551.1	1,456.1	3,007.1

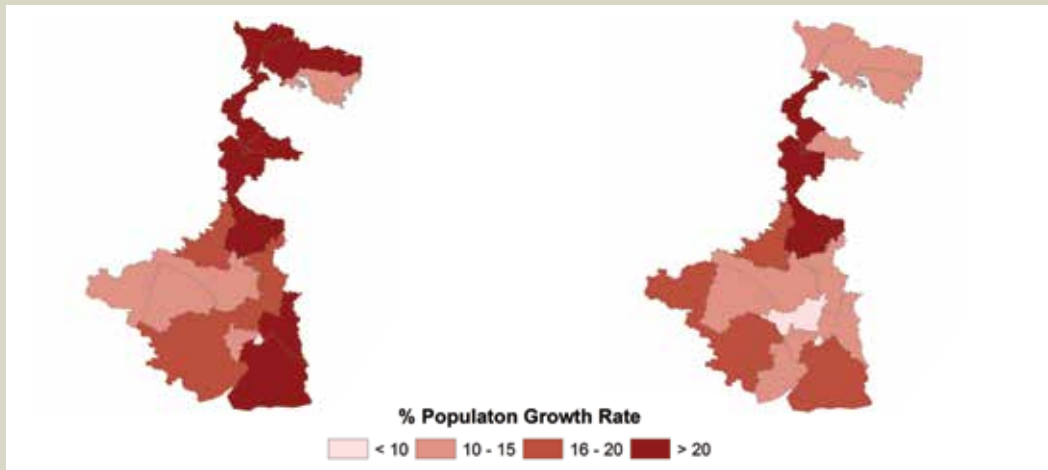
SOURCE: Census 2011, Office of the Registrar General and Census Commissioner, Govt. of India, New Delhi.



Decadal Growth Rate of Population

1991-2001

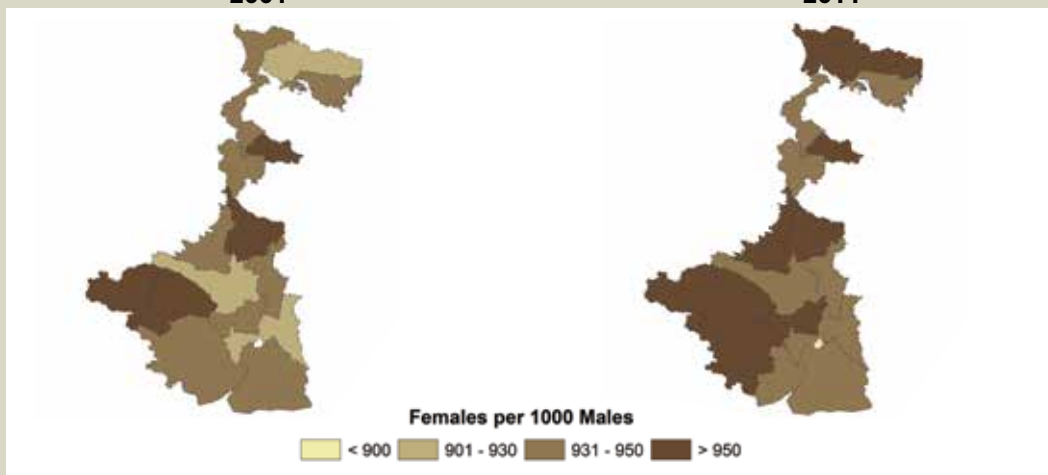
2001-2011



Sex Ratio (all age groups)

2001

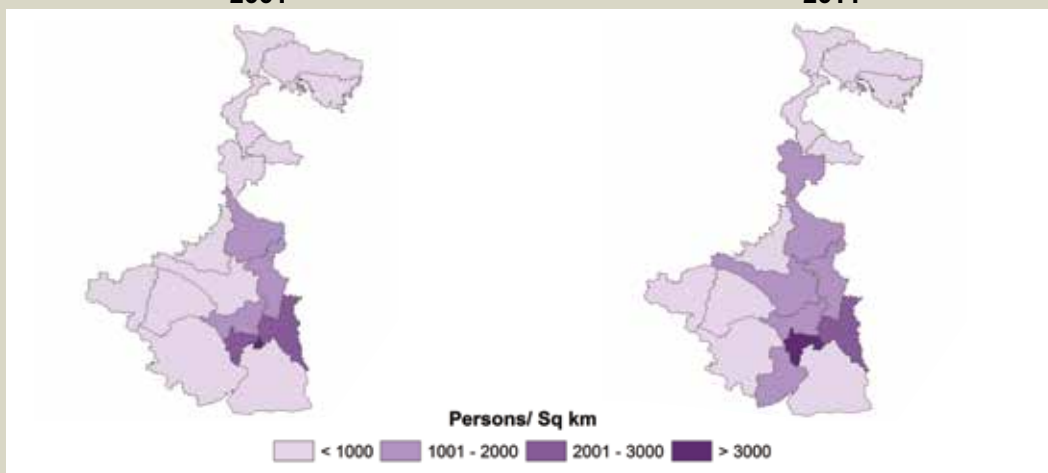
2011



Population Density

2001

2011





I.2. Social Statistics: Human Population

TABLE I.2.3: 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
WEST BENGAL	11,162	13,717	2,263	5,529	784	1,568
Bankura	558	691	134	284	23	52
Bardhaman	862	1,064	225	520	91	173
Birbhum	541	711	128	260	36	77
Dakshin Dinajpur	279	339	36	121	6	23
Darjeeling	212	234	89	163	58	55
Howrah	400	388	125	241	52	47
Hooghly	665	777	299	520	48	122
Jalpaiguri	554	620	130	204	94	109
Cooch Behar	475	605	35	129	17	52
Kolkata	0	0	0	0	0	0
Malda	580	730	83	218	25	79
Murshidabad	992	1,283	136	375	34	72
Nadia	736	880	149	342	30	97
North 24 Parganas	802	988	167	431	61	126
Paschim Medinipur	1,606	1,110	256	543	123	138
Purba Medinipur		979		439		
Purulia	407	496	55	141	12	34
South 24 Parganas	1,080	1,291	182	452	66	199
Uttar Dinajpur	411	529	33	148	8	22

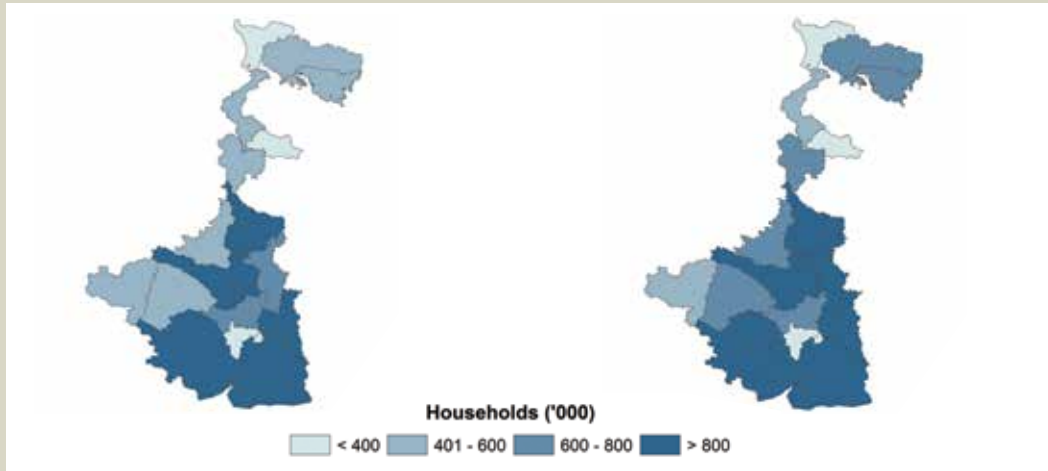
SOURCE: Census 2001 and 2011, Office of the Registrar General and Census Commissioner, Govt. of India, New Delhi.



Rural Households

2001

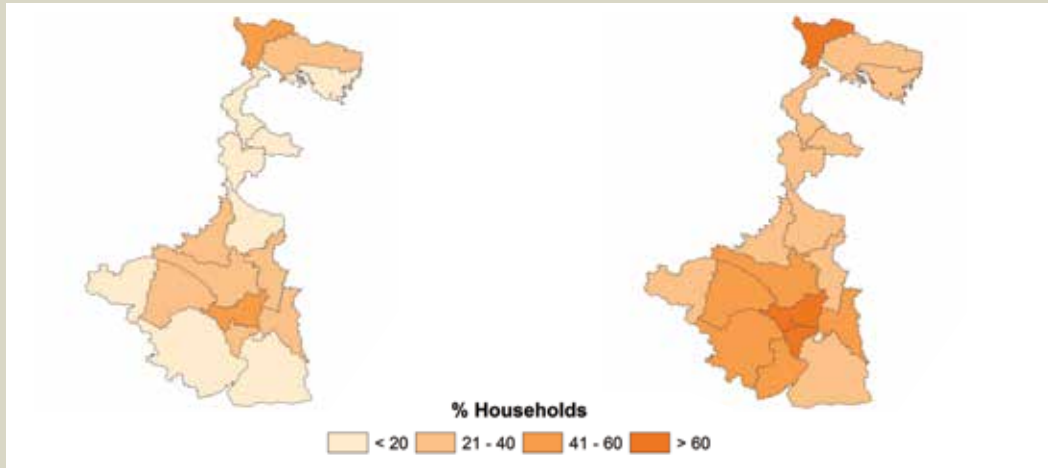
2011



Rural Households with Electricity

2001

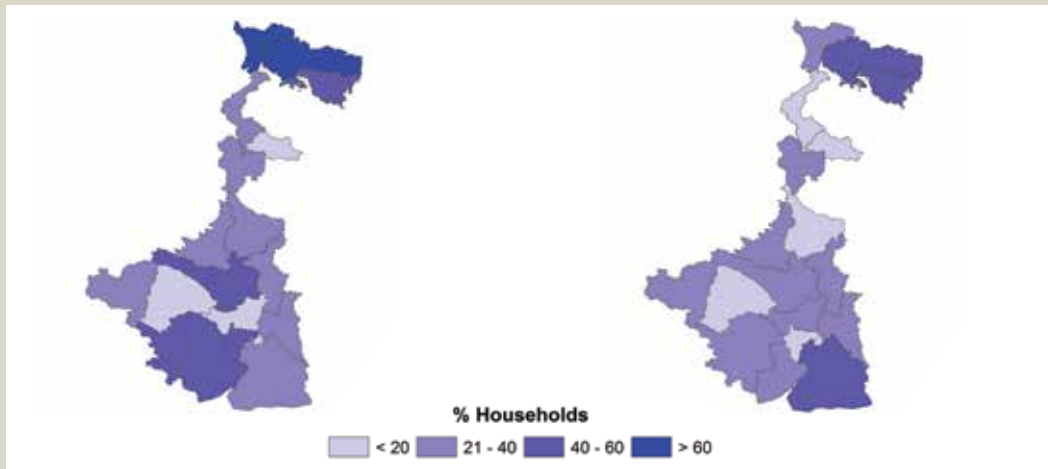
2011



Rural Households with Tap Water

2001

2011





I.2. Social Statistics: Human Population

TABLE I.2.4: District-wise SC and ST Population - 2001 and 2011

Districts	SC Population ('000)		ST Population ('000)	
	2001	2011	2001	2011
WEST BENGAL	18,452.6	21,463.3	4,406.8	5,297.0
Bankura	997.4	1,174.4	330.8	368.7
Bardhaman	1,860.8	2,115.7	441.8	489.4
Birbhum	889.9	1,033.1	203.1	242.5
Dakshin Dinajpur	432.7	482.8	242.3	275.4
Darjeeling	258.9	317.3	204.2	397.4
Howrah	658.7	719.0	19.2	15.1
Hooghly	1,188.9	1,344.0	212.1	229.2
Jalpaiguri	1,248.6	1,458.3	641.7	731.7
Cooch Behar	1,242.4	1,414.3	14.2	18.1
Kolkata	274.8	241.9	9.8	10.7
Malda	554.2	835.4	227.0	314.0
Murshidabad	703.8	897.5	76.0	91.0
Nadia	1,366.0	1,546.9	113.9	140.7
North 24 Parganas	1,840.4	2,169.1	198.9	264.6
Paschim Medinipur	1,576.3	1,128.3	798.7	880.0
Purba Medinipur		745.4		28.0
Purulia	464.0	567.8	463.5	540.7
South 24 Parganas	2,218.4	2,464.0	84.8	97.0
Uttar Dinajpur	676.6	808.0	124.9	162.8

SC: Scheduled Caste, ST: Scheduled Tribe

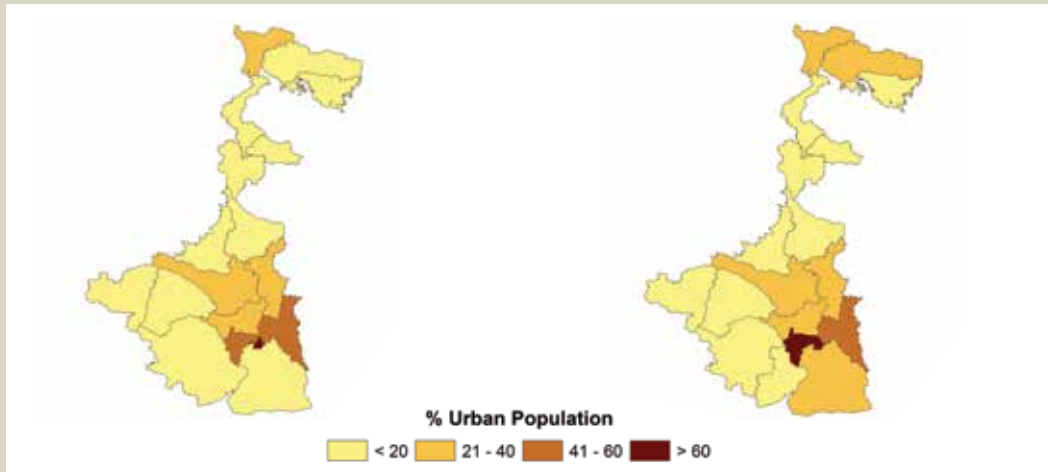
SOURCE: Census 2001 and 2011, Office of the Registrar General and Census Commissioner, Govt. of India, New Delhi.



Urbanisation (%)

2001

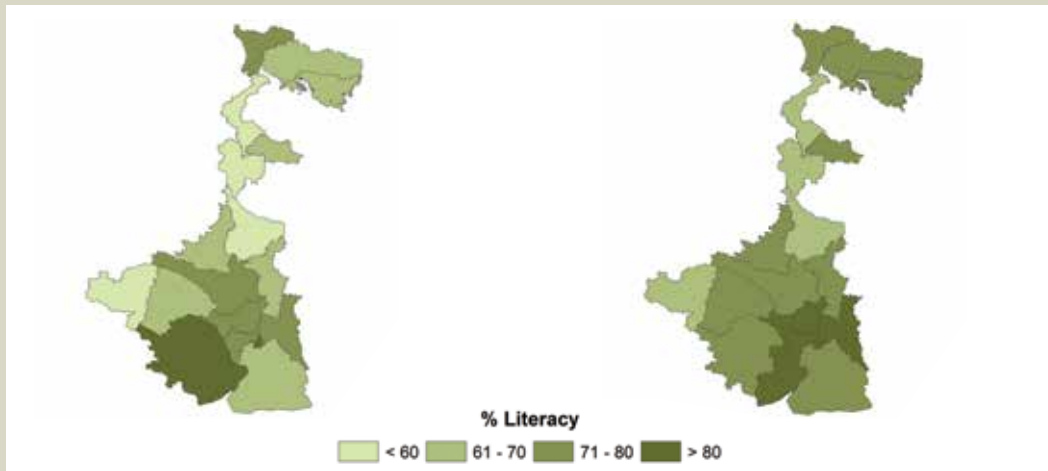
2011



Literacy Rate

2001

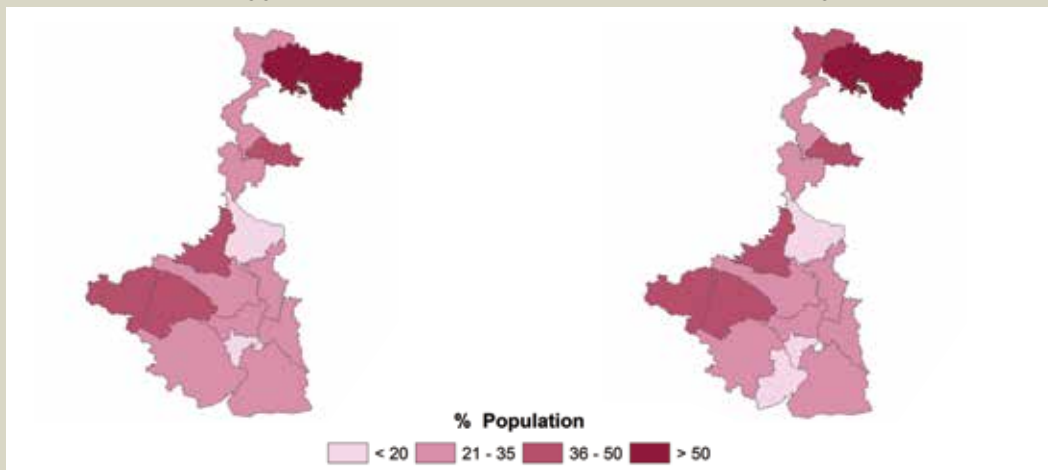
2011



Scheduled Caste and Scheduled Tribe Population (%)

2001

2011





I.3. State Economy

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

Sector	At Current Prices (₹ crore)										
	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
State Domestic Product	190,029	209,726	238,629	273,557	310,530	362,517	421,231	480,376	547,701	641,695	728,974
1. Agriculture	38,530	42,832	45,519	53,979	57,898	73,295	82,584	90,481	106,095	126,897	144,129
2. Forestry & Logging	2,344	2,402	2,575	3,169	3,637	4,210	4,392	6,332	6,567	9,052	12,739
3. Fishing	6,605	7,303	8,371	9,289	10,285	11,834	12,874	14,481	16,707	20,968	21,710
4. Agriculture & Allied (1+2+3)	47,480	52,537	56,465	66,437	71,819	89,339	99,850	111,294	129,369	156,916	178,578
As % of NSDP	25	25	24	24	23	25	24	23	24	24	24
A Sub-total of Primary	49,832	54,945	59,044	68,704	74,286	91,708	101,779	117,360	135,813	163,853	186,377
As % of NSDP	26	26	25	25	24	25	24	24	25	26	26
B Sub-total of Secondary	34,367	36,839	43,675	49,509	52,357	57,746	67,949	71,034	74,379	83,623	92,053
As % of NSDP	18	18	18	18	17	16	16	15	14	13	13
C Services	105,830	117,942	135,911	155,343	183,887	213,062	251,504	291,981	337,509	394,220	450,544
As % of NSDP	56	56	57	57	59	59	60	61	62	61	62
State Per Capita Income (₹)	22,649	24,720	27,823	31,567	35,487	41,039	47,245	53,383	60,318	70,059	78,903

Sector	At 2004-05 Prices (₹ crore)										
	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
State Domestic Product	190,029	201,994	217,849	234,798	244,262	263,230	279,191	289,432	310,338	332,425	356,845
1. Agriculture	38,530	39,189	39,503	41,883	40,202	43,549	42,288	42,330	43,688	44,314	44,978
2. Forestry & Logging	2,344	2,381	2,466	2,594	2,606	2,643	2,569	2,660	2,769	3,402	4,346
3. Fishing	6,605	6,925	7,363	7,783	7,871	7,798	7,600	7,647	7,731	8,104	8,381
4. Agriculture & Allied (1+2+3)	47,480	48,495	49,333	52,260	50,678	53,991	52,458	52,637	54,188	55,820	57,705
As % of NSDP	25	24	23	22	21	21	19	18	17	17	16
Sub-total of Primary	49,832	50,815	51,769	54,389	52,832	56,093	54,639	54,462	56,026	57,786	59,907
As % of NSDP	26	25	24	23	22	21	20	19	18	17	17
Sub-total of Secondary	34,367	35,482	38,775	41,913	39,162	43,274	46,898	43,508	48,132	51,293	53,945
As % of NSDP	18	18	18	18	16	16	17	15	16	15	15
Services	105,830	115,697	127,305	138,495	152,269	163,863	177,654	191,462	206,180	223,346	242,992
As % of NSDP	56	57	58	59	62	62	64	66	66	67	68
State Per Capita Income (₹)	22,649	23,808	25,400	27,094	27,914	29,799	31,314	32,164	34,177	36,293	38,624

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

NOTE: The estimates are as on 31.07.2015





I.3. State Economy

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

Item	At Current Prices									
	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Value of Output (₹ billion)										
Agriculture and Allied	622	669	731	846	911	1,113	1,218	1,393	1,630	1,948
Agriculture	387	430	463	535	562	688	758	845	1,016	1,230
Livestock	120	122	134	159	175	217	236	289	323	362
Milk	57	59	63	71	82	100	105	136	147	161
Meat	45	47	50	65	67	81	88	111	131	152
Egg	5	5	5	5	7	10	12	14	16	18
Dung	10	7	11	12	13	17	20	21	22	23
Others^	3	4	5	6	6	9	11	7	7	8
Share of Value of Output to Agriculture and Allied (%)										
Agriculture	62	64	63	63	62	62	62	61	62	63
Livestock	19	18	18	19	19	19	19	21	20	19
Share of Value of Output to Livestock Output (%)										
Milk	48	48	47	45	47	46	44	47	46	44
Meat	38	39	37	41	38	37	37	38	41	42
Egg	4	4	4	3	4	5	5	5	5	5
Dung	8	6	8	8	7	8	8	7	7	6
Others^	3	3	4	4	3	4	5	2	2	2

Item	At Constant Prices (2004-05 and 2011-12)									
	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12*	2012-13*	2013-14*
Value of Output (₹ billion)										
Agriculture and Allied	622	628	646	690	669	722	714	1,393	1,437	1,447
Agriculture	387	385	391	415	410	441	431	845	875	872
Livestock	120	122	126	137	133	138	143	289	301	304
Milk	57	58	59	61	62	64	67	136	142	143
Meat	45	46	47	56	50	52	54	111	117	118
Egg	5	5	5	5	5	5	6	14	15	15
Dung	10	10	10	10	11	11	11	21	21	21
Others^	3	3	5	5	5	6	5	7	6	7
Share of Value of Output to Agriculture and Allied (%)										
Agriculture	62	61	61	60	61	61	60	61	61	60
Livestock	19	19	20	20	20	19	20	21	21	21
Share of Value of Output to Livestock Output (%)										
Milk	48	48	47	45	47	46	47	47	47	47
Meat	38	38	37	41	38	38	38	38	39	39
Egg	4	4	4	4	4	4	4	5	5	5
Dung	8	8	8	7	8	8	8	7	7	7
Others^	3	2	4	4	4	4	3	2	2	2

*at 2011-12 prices.

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

SOURCE: State wise estimates of value of output from agriculture and allied activities with base year 2004-2005 and 2011-12, Ministry of Statistics and Programme Implementation, Govt. of India.



I.3. State Economy

TABLE I.3.3: Approved Project Cost for Dairying under Rashtriya Krishi Vikas Yojana (RKVY) in West Bengal

Parameter	Approved Project cost for Dairying (₹ crore)									Grand Total
	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	
Installation of BMC and AMCU	4.00		2.25							6.25
Dairy development		3.78								3.78
Infrastructure support to Milk Collection unit		0.06								0.06
Establishment of a Milk Testing laboratory										0.00
Modernization of Manufacturing unit at Bhagirathi Feeder Dairy			1.20							1.20
Training center development			2.00							2.00
Others		1.00	1.15							2.15
Revival and operation of State Dairy, Burdwan by Mother Dairy, Calcutta							5.74			11.47
Augmentation of the marketing network										8.00
Grand Total	4.00	4.84	6.60	0.00	0.00	0.00	5.74	30.24	0.00	51.42

SOURCE: Rashtriya Krishi Vikas Yojana, Department of Agriculture and Cooperation, Ministry of Agriculture and Farmers Welfare, Govt. of India.





I.3. State Economy

TABLE I.3.4: Approved Project Cost for Animal Husbandry under Rashtriya Krishi Vikas Yojana (RKVY) in West Bengal

Segment	Approved Project cost for Animal Husbandry (₹ crore)									Grand Total
	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	
Modernization of Cattle feed plant	3.41	1.00	1.10			4.31				9.82
Fodder Seed production & distribution and pasture land development	0.50	0.02	0.98		0.44					1.94
Sheep and Goat development	0.50	4.58	1.20	1.77	2.70				0.72	25.76
Animal health and Disease control programme	1.00	3.30	2.79	0.50						14.58
Piggery farming & development		0.27	2.99		0.85				0.82	8.93
Cattle farming & development	5.50	3.31	1.60							10.41
Poultry farming & development		9.10	6.65	8.69	7.51	12.64	10.00		0.80	66.17
Capacity Building and modernization of training institutes	1.00	0.32	1.59							2.91
Establishment of BSL-III Lab at IAH&VB campus		3.00								3.00
Livestock insurance support to farmers			1.00	2.00	10.00					13.00
Organization of Fertility Camp			0.67	0.67						1.33
Go-Sampad Bikash Avijan				18.75	57.00	9.16	32.28			140.31
Bullock rearing scheme					3.25					3.25
Establishment of bull mother farm and procurement of animals	0.50					3.50	6.57			10.57
Others	1.50	1.00	5.72	0.44	0.77	2.40				11.83
Grand Total	13.91	25.90	26.28	32.81	82.52	32.01	48.85	118.75	2.34	383.37

SOURCE: Rashtriya Krishi Vikas Yojana, Department of Agriculture and Cooperation, Ministry of Agriculture and Farmers Welfare, Govt. of India.



PART II : LIVESTOCK CENSUS

As per the 19th Livestock Census 2012, West Bengal had a total bovine population of 17.1 million, down by 14 per cent than previous census of 2007. With a share of 80 per cent of total bovine, Indigenous cattle are predominant in the State followed by crossbred cattle at 17 per cent.

About one-third of in-milk indigenous cattle are found in the districts of Paschim Medinipur, Bankura and Bardhaman. About half of the total in-milk crossbred population are concentrated in four districts namely Paschim Medinipur, Murshidabad, Nadia and Bardhaman districts.





II.1. Animal Population

TABLE II.1.1: Summary of Livestock Census (1997 to 2012) - West Bengal

Population	Livestock Census			
	1997	2003	2007	2012
Total Bovine	19,064,830	19,999,451	19,952,035	17,111,618
Total Cattle	17,831,729	18,913,219	19,188,269	16,514,239
Total Exotic/ Crossbred cows	936,359	1,118,969	2,642,144	2,796,419
Total Females	774,868	896,901	2,083,526	2,256,228
Under 1 year	162,369	181,772	450,419	496,268
1 to 2.5 year	149,973	164,023	463,670	490,104
In-milk	296,753	353,120	740,816	731,138
Dry	114,447	136,035	314,172	370,391
Milch	411,200	489,155	1,054,988	1,101,529
Not even calved once	51,326	61,951	97,135	156,219
Others			17,314	12,108
Total Males	161,491	222,068	558,618	540,191
Total Indigenous cows	16,895,370	17,794,250	16,546,125	13,717,820
Total Females	9,133,740	9,849,403	10,113,893	8,932,417
Under 1 year	1,662,283	1,699,628	1,836,436	1,865,718
1 to 3 years	2,068,650	2,218,264	2,564,159	2,013,971
In-milk	2,740,176	3,052,648	2,859,968	2,555,590
Dry	2,058,850	2,240,115	2,144,153	1,730,380
Milch	4,799,026	5,292,763	5,004,121	4,285,970
Not even calved once	603,781	638,748	580,916	706,165
Others			128,261	60,593
Total Males	7,761,630	7,944,847	6,432,232	4,785,403
Total Buffaloes	1,233,101	1,086,232	763,766	597,379
Total Females	579,483	392,914	266,576	254,320
Under 1 year	53,652	64,403	42,659	45,718
1 to 3 years	50,290	57,960	37,843	36,979
In-milk	141,231	169,895	133,338	116,926
Dry	66,244	76,815	40,854	39,065
Milch	207,475	246,710	174,192	155,991
Not even calved once	20,255	23,841	8,964	14,616
Others	247,811		2,918	1,016
Total Males	653,618	693,318	497,190	343,059

SOURCE: 16th, 17th, 18th and 19th Livestock Census, Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture and Farmers Welfare, 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)			
	1997	2003	2007	2012	1997	2003	2007	2012	1997	2003	2007	2012
WEST BENGAL	16,895.4	17,794.3	16,546.1	13,717.8	936.4	1,119.0	2,42.1	2,796.4	1,233.1	1,086.2	763.8	597.4
Bankura	1,307.9	1,300.6	1,445.7	1,217.9	27.4	33.9	105.8	147.0	169.8	141.8	98.7	66.7
Bardhaman	1,584.4	1,649.3	1,487.1	1,161.6	67.8	79.7	243.7	272.3	168.9	129.5	120.4	98.2
Birbhum	1,008.0	1,019.9	1,052.4	870.9	16.4	25.0	81.0	83.6	68.2	60.8	67.6	58.1
Dakshin Dinajpur	461.1	451.3	557.8	482.8	6.2	9.3	16.3	20.1	31.8	26.5	20.0	7.0
Darjeeling	141.6	134.1	203.5	118.1	97.8	77.0	85.0	107.6	13.4	12.5	6.4	2.9
Howrah	441.3	439.3	292.7	402.2	20.6	27.5	46.6	39.3	23.7	13.7	10.6	4.2
Hooghly	922.7	941.0	729.5	734.3	125.2	131.4	231.3	221.9	50.7	33.8	31.3	23.9
Jalpaiguri	775.9	895.3	921.6	847.2	29.0	35.6	94.4	103.6	19.3	14.8	11.5	8.8
Cooch Behar	988.5	899.9	981.5	810.1	22.2	29.3	69.4	66.1	15.6	11.6	4.4	3.8
Kolkata	11.2	10.5	2.4	2.0	5.2	3.8	1.9	2.6	5.2	2.7	2.9	1.4
Malda	623.1	607.8	665.2	655.2	16.6	53.9	66.4	99.9	71.5	58.1	50.8	39.0
Murshidabad	947.3	1,070.3	829.3	552.3	69.9	107.1	501.9	399.0	125.6	195.5	75.3	54.9
Nadia	808.5	847.9	522.3	424.0	194.6	193.2	348.8	325.0	85.9	66.1	24.1	17.8
North 24 Parganas	1,090.1	1,204.9	635.3	416.5	147.8	150.9	312.9	233.4	66.7	40.1	38.1	33.2
Paschim Medinipur	3,122.2	1,931.7	2,151.4	1,895.8	54.0	62.3	236.5	406.7	70.1	53.4	67.2	72.1
Purba Medinipur		1,461.2	1,312.8	893.5		28.8	93.5	133.8		3.8	0.8	7.7
Purulia	850.8	889.1	927.8	822.6	6.7	8.0	16.4	13.5	181.4	157.3	100.6	75.1
South 24 Parganas	1,160.7	1,289.0	1,052.0	725.7	22.1	29.8	51.3	61.6	33.5	26.9	11.9	5.8
Uttar Dinajpur	650.3	750.9	775.9	685.2	6.9	32.5	39.0	59.5	31.7	37.2	21.4	16.9

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



II.1. Animal Population

TABLE II.1.3: District-wise Female Population

Districts	Indigenous Cattle ('000)				Crossbred Cattle ('000)				Buffalo ('000)			
	1997	2003	2007	2012	1997	2003	2007	2012	1997	2003	2007	2012
WEST BENGAL	9,133.7	9,849.4	10,113.9	8,932.4	774.9	896.9	2,083.5	2,256.2	579.5	392.9	266.6	254.3
Bankura	701.4	706.4	814.1	742.1	22.3	27.1	79.6	117.0	60.7	42.4	24.6	19.8
Bardhaman	983.4	1,052.2	1,19.6	865.5	53.0	60.1	195.2	222.7	91.4	53.7	52.5	57.1
Birbhum	478.9	529.7	507.7	481.5	11.2	17.2	59.8	65.6	18.6	13.4	15.5	14.9
Dakshin Dinajpur	198.3	220.0	306.4	299.4	5.0	6.9	13.4	17.2	7.9	4.4	0.2	0.2
Darjeeling	79.2	70.9	127.0	75.0	72.1	54.8	64.6	77.9	8.4	6.9	4.4	1.9
Howrah	320.6	310.0	245.4	373.2	16.7	22.2	39.6	33.9	22.7	12.7	10.4	3.9
Hooghly	606.6	633.1	537.9	379.6	107.8	111.7	185.4	188.6	39.7	23.4	21.9	15.6
Jalpaiguri	423.1	463.3	520.1	533.0	24.0	28.8	72.7	84.3	11.2	6.8	7.5	5.8
Cooch Behar	514.6	482.2	535.0	494.4	18.0	23.2	56.0	53.2	8.8	5.2	1.8	1.4
Kolkata	10.1	9.5	1.8	1.7	4.7	3.5	1.8	2.3	4.8	2.4	2.6	1.3
Malda	287.0	358.9	391.8	419.3	14.5	44.8	54.8	81.7	27.1	14.3	11.3	14.3
Murshidabad	495.4	540.8	482.6	352.6	56.1	82.1	383.2	318.1	58.8	70.2	24.9	24.6
Nadia	424.1	444.9	349.2	300.8	166.6	162.3	277.0	258.8	45.5	29.4	5.7	5.6
North 24 Parganas	720.6	777.9	426.6	294.7	130.4	124.3	261.8	185.2	58.6	33.1	35.5	31.3
Paschim Medinipur	1,677.3	1,040.3	1,290.9	1,260.4	42.6	49.0	182.0	325.8	33.0	20.0	17.4	23.3
Purba Medinipur		797.7	1,033.6	733.2		22.6	74.2	113.7		1.4	0.5	3.1
Purulia	350.5	373.2	363.7	345.0	4.9	5.2	11.2	9.9	48.4	27.4	17.4	18.1
South 24 Parganas	584.0	627.6	732.9	545.3	18.9	23.8	38.7	50.3	20.6	13.7	7.1	4.3
Uttar Dinajpur	278.8	411.0	427.5	435.7	5.9	27.3	32.6	50.0	13.2	12.3	5.4	7.8

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



II.1. Animal Population

TABLE II.1.4: District-wise Breedable Population

Districts	Indigenous Cattle ('000)				Crossbred Cattle ('000)				Buffalo ('000)			
	1997	2003	2007	2012	1997	2003	2007	2012	1997	2003	2007	2012
WEST BENGAL	6,437.1	7,040.6	6,995.4	6,059.7	537.5	633.1	1,401.3	1,514.9	500.7	299.5	205.0	190.1
Bankura	507.7	507.2	571.4	508.8	15.3	19.0	52.2	75.7	51.3	32.3	17.6	13.7
Bardhaman	694.6	744.9	703.0	598.8	37.9	44.0	134.8	152.7	80.1	42.6	39.9	42.6
Birbhum	327.3	378.6	340.0	321.6	6.5	12.2	39.3	44.5	15.2	10.3	10.3	9.4
Dakshin Dinajpur	144.2	167.9	202.6	200.5	3.3	4.6	8.4	11.3	7.6	3.7	0.2	0.2
Darjeeling	52.2	50.0	89.1	51.3	49.1	38.5	45.6	55.3	6.4	4.6	3.5	1.5
Howrah	218.9	219.1	166.8	253.1	11.6	15.7	27.7	22.8	20.2	10.2	8.9	3.4
Hooghly	419.2	443.7	376.1	259.6	73.8	78.4	128.5	127.0	33.9	17.8	18.9	13.2
Jalpaiguri	303.4	340.1	364.0	356.4	17.0	20.3	50.5	56.6	9.3	4.9	5.3	4.0
Cooch Behar	402.2	357.7	369.6	334.6	12.8	16.8	37.9	34.6	7.8	4.0	1.3	1.0
Kolkata	8.2	7.8	1.3	1.3	3.7	2.7	1.4	1.8	4.2	1.9	2.4	1.1
Malda	208.1	246.7	266.3	283.9	9.8	29.3	34.9	54.7	23.2	10.1	7.6	10.0
Murshidabad	345.1	383.8	318.7	234.8	37.8	57.4	253.2	214.3	50.5	51.9	16.9	17.3
Nadia	330.9	336.4	235.0	197.6	125.1	120.6	186.5	174.1	41.4	22.8	4.1	3.9
North 24 Parganas	437.3	511.0	290.7	196.1	83.5	84.0	180.4	127.5	53.4	27.3	32.8	28.7
Paschim Medinipur	1,175.5	761.4	917.9	853.4	29.2	34.4	120.5	216.9	27.5	15.0	12.9	16.4
Purba Medinipur		580.0	719.1	498.3		16.0	46.6	72.3		1.1	0.3	2.2
Purulia	256.4	270.2	263.4	240.4	3.7	3.9	7.7	6.9	40.2	20.5	12.6	12.4
South 24 Parganas	409.7	454.2	508.1	374.6	13.0	17.5	24.3	32.6	17.8	10.4	5.7	3.6
Uttar Dinajpur	196.1	280.0	292.1	294.6	4.2	17.8	21.0	33.1	10.6	7.9	3.8	5.5

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





II.1. Animal Population

TABLE II.1.5: District-wise In-milk Population

Districts	Indigenous Cattle ('000)				Crossbred Cattle ('000)				Buffalo ('000)			
	1997	2003	2007	2012	1997	2003	2007	2012	1997	2003	2007	2012
WEST BENGAL	2,740.2	3,052.6	2,860.0	2,555.6	296.8	353.1	740.8	731.1	141.2	169.9	133.3	116.9
Bankura	192.7	189.0	231.9	218.9	7.6	10.1	25.2	34.7	14.3	17.5	8.7	7.0
Bardhaman	302.4	310.9	342.9	274.2	21.1	24.3	73.4	73.0	25.3	24.7	26.5	25.7
Birbhum	136.2	156.9	140.9	139.4	2.3	6.6	19.9	21.1	4.1	5.7	5.2	5.0
Dakshin Dinajpur	56.7	83.7	76.1	77.9	1.3	2.4	3.5	5.2	2.5	2.3	0.1	0.1
Darjeeling	28.8	25.1	40.9	21.3	25.8	20.9	27.1	30.1	2.2	2.4	2.5	1.0
Howrah	96.6	96.8	75.4	158.9	6.6	9.2	15.1	12.0	7.1	6.5	6.8	3.0
Hooghly	202.3	214.5	177.3	119.0	41.6	41.1	72.8	68.3	12.2	11.5	15.1	10.1
Jalpaiguri	133.2	149.1	166.6	152.4	9.8	10.8	29.1	26.5	2.8	2.7	3.3	1.9
Cooch Behar	170.8	149.3	144.1	133.8	7.2	9.3	20.8	16.1	1.6	1.8	0.8	0.5
Kolkata	5.2	4.9	0.9	0.7	2.8	1.9	1.1	1.2	1.7	1.3	2.0	0.9
Malda	81.9	112.4	114.1	115.4	4.8	13.6	17.7	25.7	6.7	5.1	4.3	5.1
Murshidabad	154.6	161.7	153.3	103.3	21.4	32.5	137.2	105.7	15.6	28.9	9.7	9.2
Nadia	174.5	160.3	106.3	91.5	70.0	74.0	91.4	90.3	1.4	12.6	2.5	2.3
North 24 Parganas	221.8	239.3	137.3	81.4	47.0	48.2	100.2	64.8	19.0	17.9	27.8	25.2
Paschim Medinipur	420.2	320.7	331.8	320.1	15.9	18.2	56.8	92.7	7.3	8.4	6.4	7.3
Purba Medinipur		251.0	248.0	192.0		8.3	23.3	30.2		0.6	0.2	1.4
Purulia	95.2	98.6	99.6	95.6	2.0	2.1	4.2	3.6	9.5	10.5	6.5	5.8
South 24 Parganas	191.4	200.7	155.0	135.1	7.3	10.2	11.2	13.7	5.5	5.9	2.7	2.4
Uttar Dinajpur	75.5	127.7	117.8	124.7	2.1	9.3	10.9	16.1	2.7	3.5	2.2	3.1

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



II.1. Animal Population

TABLE II.1.6: District-wise Milch Population

Districts	Indigenous Cattle ('000)				Crossbred Cattle ('000)				Buffalo ('000)			
	1997	2003	2007	2012	1997	2003	2007	2012	1997	2003	2007	2012
WEST BENGAL	4,799.0	5,292.8	5,004.1	4,286.0	411.2	489.2	1,055.0	1,101.5	207.5	246.7	174.2	156.0
Bankura	374.2	367.0	415.9	365.2	11.3	14.2	38.0	53.7	21.4	26.1	13.8	10.6
Bardhaman	552.0	567.5	520.4	431.2	29.8	34.2	102.2	108.4	36.0	36.2	34.2	34.7
Birbhum	231.3	282.3	235.9	227.4	3.2	9.0	28.8	31.9	6.2	8.6	7.7	7.2
Dakshin Dinajpur	102.4	127.5	143.5	139.0	2.4	3.5	5.6	8.0	3.6	3.4	0.2	0.2
Darjeeling	40.7	39.0	65.6	35.6	33.1	28.6	37.4	43.3	2.6	3.5	3.1	1.3
Howrah	162.5	163.1	122.1	212.4	8.8	12.4	21.1	16.9	8.8	8.5	7.9	3.2
Hooghly	321.4	334.8	275.5	187.7	53.7	58.9	99.1	95.8	15.3	15.4	17.4	12.5
Jalpaiguri	229.1	256.7	274.8	260.0	13.5	15.5	40.0	41.7	4.0	3.9	4.6	3.1
Cooch Behar	310.4	271.4	257.5	235.3	9.5	12.7	28.4	24.9	2.8	2.8	1.0	0.7
Kolkata	7.5	7.0	1.1	1.0	3.2	2.3	1.3	1.6	2.0	1.7	2.2	1.1
Malda	155.8	190.6	196.2	201.3	7.5	22.1	25.7	39.3	10.2	8.5	6.1	7.6
Murshidabad	248.9	276.1	233.7	164.6	30.2	44.4	192.1	158.7	22.8	42.4	13.8	13.4
Nadia	274.4	265.9	169.3	140.1	103.4	97.6	137.3	131.2	8.5	19.3	3.3	3.2
North 24 Parganas	336.3	396.1	213.4	134.7	63.4	65.2	138.5	92.9	24.8	24.2	30.8	27.1
Paschim Medinipur	824.6	575.3	646.7	572.2	22.4	26.1	87.6	152.4	11.3	12.0	10.3	11.8
Purba Medinipur		435.4	485.5	339.7		12.2	33.1	49.1		0.9	0.2	1.8
Purulia	181.3	187.7	200.6	175.0	2.8	3.0	6.2	5.2	15.6	15.6	10.4	9.0
South 24 Parganas	299.2	337.1	337.7	254.7	9.5	13.3	16.8	22.1	7.2	8.3	4.3	3.1
Uttar Dinajpur	147.0	212.2	208.7	208.7	3.3	13.9	15.9	24.3	4.2	5.4	3.0	4.4

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



II.1. Animal Population

TABLE II.1.7: District-wise Male Population

Districts	Indigenous Cattle ('000)				Crossbred Cattle ('000)				Buffalo ('000)			
	1997	2003	2007	2012	1997	2003	2007	2012	1997	2003	2007	2012
WEST BENGAL	7,761.6	7,944.8	6,432.2	4,785.4	161.5	222.1	558.6	540.2	653.6	693.3	497.2	343.1
Bankura	606.5	594.3	631.6	475.8	5.0	6.8	26.2	30.1	109.1	99.4	74.1	46.9
Bardhaman	601.0	597.1	467.5	296.1	14.9	19.6	48.5	49.6	77.4	75.8	67.8	41.1
Birbhum	529.0	490.3	544.7	389.4	5.2	7.7	21.2	18.0	49.6	47.5	52.1	43.2
Dakshin Dinajpur	262.8	231.3	251.3	183.4	1.2	2.4	2.9	2.8	23.9	22.1	19.8	6.8
Darjeeling	62.4	63.2	76.4	43.1	25.7	22.2	20.4	29.8	5.0	5.6	2.0	1.0
Howrah	120.7	129.3	47.3	29.0	3.9	5.3	7.1	5.4	1.0	1.0	0.3	0.2
Hooghly	316.1	308.0	191.6	354.6	17.4	19.8	45.9	33.2	11.0	10.4	9.4	8.4
Jalpaiguri	352.8	432.0	401.5	314.2	5.0	6.8	21.7	19.3	8.2	8.1	3.9	3.1
Cooch Behar	473.9	417.7	446.4	315.7	4.2	6.1	13.5	12.9	6.8	6.4	2.6	2.4
Kolkata	1.2	1.0	0.6	0.3	0.5	0.2	0.1	0.3	0.4	0.3	0.2	0.1
Malda	336.2	248.9	273.4	235.8	2.1	9.1	11.6	18.2	44.3	43.8	39.6	24.7
Murshidabad	451.9	529.5	346.6	199.7	13.7	25.0	118.7	80.8	66.8	125.4	50.4	30.3
Nadia	384.4	403.0	173.0	123.2	28.0	30.9	71.7	66.2	40.4	36.7	18.3	12.2
North 24 Parganas	369.5	427.0	208.8	121.9	17.4	26.6	51.2	48.2	8.1	7.0	2.6	1.8
Paschim Medinipur	1,444.9	891.4	860.5	635.4	11.3	13.3	54.5	80.9	37.1	33.4	49.7	48.8
Purba Medinipur		663.5	279.2	160.3		6.1	19.3	20.1		2.4	0.3	4.6
Purulia	500.3	516.0	564.1	477.7	1.8	2.8	5.2	3.6	133.0	129.9	83.2	57.0
South 24 Parganas	576.7	661.3	319.1	180.4	3.2	6.0	12.6	11.3	12.9	13.2	4.8	1.5
Uttar Dinajpur	371.5	340.0	348.5	249.4	1.0	5.3	6.4	9.5	18.5	24.9	15.9	9.0

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



II.2. Sex Ratio in Dairy Animals

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

Districts	Indigenous Cattle (%)				Crossbred Cattle (%)				Buffalo (%)			
	1997	2003	2007	2012	1997	2003	2007	2012	1997	2003	2007	2012
WEST BENGAL	46	45	39	35	17	20	21	19	53	64	65	57
Bankura	46	46	44	39	18	20	25	20	64	70	75	70
Bardhaman	38	36	31	25	22	25	20	18	46	59	56	42
Birbhum	52	48	52	45	32	31	26	22	73	78	77	74
Dakshin Dinajpur	57	51	45	38	19	26	18	14	75	84	99	97
Darjeeling	44	47	38	36	26	29	24	28	37	45	32	35
Howrah	27	29	16	7	19	19	15	14	4	8	2	6
Hooghly	34	33	26	48	14	15	20	15	22	31	30	35
Jalpaiguri	45	48	44	37	17	19	23	19	42	54	34	35
Cooch Behar	48	46	45	39	19	21	19	20	44	55	60	64
Kolkata	11	10	25	17	9	6	6	10	7	12	8	6
Malda	54	41	41	36	13	17	18	18	62	75	78	63
Murshidabad	48	49	42	36	20	23	24	20	53	64	67	55
Nadia	48	48	33	29	14	16	21	20	47	55	76	69
North 24 Parganas	34	35	33	29	12	18	16	21	12	18	7	6
Paschim Medinipur	46	46	40	34	21	21	23	20	53	63	74	68
Purba Medinipur		45	21	18		21	21	15		62	39	60
Purulia	59	58	61	58	26	35	32	27	73	83	83	76
South 24 Parganas	50	51	30	25	15	20	25	18	39	49	41	26
Uttar Dinajpur	57	45	45	36	14	16	16	16	58	67	75	54

SOURCE: 16th, 17th, 18th and 19th Livestock Census, Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture and Farmers Welfare, 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 (%)			
	1997	2003	2007	2012	1997	2003	2007	2012	1997	2003	2007	2012
WEST BENGAL	57	58	57	60	72	72	70	66	68	69	77	75
Bankura	51	52	56	60	68	71	66	65	67	67	63	66
Bardhaman	55	55	66	64	71	71	72	67	70	68	77	74
Birbhum	59	56	60	61	70	73	69	66	65	66	68	69
Dakshin Dinajpur	55	66	53	56	56	68	62	65	68	68	73	62
Darjeeling	71	64	62	60	78	73	72	69	82	69	79	76
Howrah	59	59	62	75	75	74	72	71	80	77	85	92
Hooghly	63	64	64	63	77	70	73	71	79	75	87	81
Jalpaiguri	58	58	61	59	72	70	73	63	69	69	72	63
Cooch Behar	55	55	56	57	76	74	73	65	60	64	74	67
Kolkata	70	70	82	68	87	82	83	78	85	77	90	85
Malda	53	59	58	57	63	62	69	65	65	60	71	68
Murshidabad	62	59	66	63	71	73	71	67	68	68	70	69
Nadia	64	60	63	65	68	76	67	69	17	66	77	74
North 24 Parganas	66	60	64	60	74	74	72	70	77	74	90	93
Paschim Medinipur	51	56	51	56	71	70	65	61	65	70	63	62
Purba Medinipur		58	51	57		68	70	61		68	79	76
Purulia	53	53	50	55	70	69	69	70	61	67	63	64
South 24 Parganas	64	60	46	53	77	77	67	62	76	72	64	76
Uttar Dinajpur	51	60	56	60	63	67	69	66	64	65	72	70

SOURCE: 16th, 17th, 18th and 19th Livestock Census, Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture and Farmers Welfare, 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)			
	1997	2003	2007	2012	1997	2003	2007	2012
WEST BENGAL	417	469	422	342	215	225	225	193
Bankura	365	409	391	337	219	215	240	208
Bardhaman	450	533	503	392	259	265	264	218
Birbhum	475	556	530	429	240	243	264	223
Dakshin Dinajpur	406	451	485	447	225	220	268	230
Darjeeling	194	253	197	147	80	71	94	73
Howrah	532	596	368	404	331	328	239	304
Hooghly	631	734	567	494	349	351	315	311
Jalpaiguri	233	308	285	263	132	152	165	154
Cooch Behar	555	635	508	406	303	278	312	260
Kolkata	387	440	259	79	117	92	39	32
Malda	804	397	502	479	191	193	210	213
Murshidabad	506	586	666	407	215	258	264	189
Nadia	632	711	481	376	277	282	228	195
North 24 Parganas	589	706	464	332	319	341	241	167
Paschim Medinipur	345	392	431	402	231	219	262	253
Purba Medinipur		454	407	294		317	299	220
Purulia	344	404	352	299	166	168	167	146
South 24 Parganas	260	324	228	152	122	135	112	80
Uttar Dinajpur	412	492	503	434	219	261	266	243

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



II.5. Cattle and Buffalo Breeds

TABLE II.5.1: Cattle and Buffalo Breeds of West Bengal - 2012

Category	Breed	Parameter	Total Male	Milch	Total Female	Total Animal
Cattle	Gir	Pure	13,704	11,486	29,288	42,992
		Graded	397,104	349,589	903,704	1,300,808
	Sahiwal	Pure	19,698	22,101	53,116	72,814
		Graded	317,292	284,333	678,742	996,034
	Siri	Pure	78	153	222	300
		Graded	2,036	1,680	3,143	5,179
Buffalo	Murrah	Pure	57,279	58,617	88,979	146,258
		Graded	18,762	8,955	15,758	34,520

SOURCE: Livestock Population Breedwise, Based on Breed Survey, 2013, Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture and Farmers Welfare, Govt. of India.







II.5. Cattle and Buffalo Breeds

TABLE II.5.2: District and Breed-wise Population of Crossbred Cattle in West Bengal - 2012

Districts	HF Crossbred ('000)			Jersey Crossbred ('000)		
	Male	Female	Total	Male	Female	Total
WEST BENGAL	54.1	217.5	271.6	480.6	2,016.0	2,496.6
Bankura	0.5	0.2	0.7	29.6	116.7	146.3
Bardhaman	7.4	31.5	39.0	42.0	190.2	232.2
Birbhum	0.4	0.2	0.6	17.5	65.0	82.5
Dakshin Dinajpur	0.0	0.1	0.1	2.7	16.2	18.9
Darjeeling	3.2	8.3	11.5	26.5	69.1	95.6
Howrah	0.2	0.5	0.6	5.1	33.2	38.4
Hooghly	6.3	30.4	36.7	26.9	158.1	185.0
Jalpaiguri	2.1	9.4	11.5	17.2	74.9	92.1
Cooch Behar	2.3	7.6	9.8	10.6	45.6	56.2
Kolkata	0.1	1.2	1.3	0.2	1.1	1.3
Malda	2.1	7.8	9.9	15.2	68.4	83.7
Murshidabad	10.0	42.6	52.6	70.8	275.3	346.1
Nadia	8.1	28.9	37.0	55.2	218.5	273.7
North 24 Parganas	3.4	16.3	19.7	44.8	168.9	213.7
Paschim Medinipur	4.5	22.6	27.2	76.3	302.5	378.9
Purba Medinipur	1.6	6.9	8.5	18.3	106.4	124.7
Purulia	0.8	0.8	1.6	2.2	8.4	10.6
South 24 Parganas	0.5	1.1	1.7	10.6	48.3	58.9
Uttar Dinajpur	0.5	1.0	1.5	9.0	49.0	58.0

SOURCE: Livestock Population Breedwise, Based on Breed Survey, 2013, Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture and Farmers Welfare, Govt. of India.



II.5. Cattle and Buffalo Breeds

TABLE II.5.3: District and Breed-wise Population of Gir Cattle in West Bengal - 2012

Districts	Gir Pure ('000)			Gir Graded ('000)		
	Male	Female	Total	Male	Female	Total
WEST BENGAL	13.7	29.3	43.0	397.1	903.7	1,300.8
Bankura	0.0	0.0	0.0	71.9	112.2	184.1
Bardhaman	2.8	10.2	13.0	76.6	228.3	304.8
Birbhum	1.7	1.4	3.1	53.7	95.3	149.0
Dakshin Dinajpur	0.0	0.0	0.0	0.9	4.1	5.0
Darjeeling	0.0	0.0	0.0	0.1	0.3	0.4
Howrah	0.1	0.4	0.6	6.2	50.6	56.7
Hooghly	0.0	0.0	0.0	0.1	0.3	0.4
Jalpaiguri	0.0	0.0	0.0	0.0	0.0	0.0
Cooch Behar	0.0	0.0	0.0	25.6	37.7	63.4
Kolkata	0.0	0.0	0.0	0.3	0.7	1.0
Malda	0.0	0.0	0.0	0.0	0.0	0.0
Murshidabad	0.0	0.1	0.1	1.8	3.7	5.5
Nadia	0.2	0.3	0.5	0.1	0.1	0.1
North 24 Parganas	0.1	0.1	0.2	15.1	45.4	60.5
Paschim Medinipur	2.1	7.5	9.5	73.9	162.9	236.8
Purba Medinipur	0.0	0.1	0.1	21.4	80.8	102.1
Purulia	2.4	1.9	4.3	25.4	32.0	57.4
South 24 Parganas	4.3	7.3	11.6	24.1	49.4	73.5
Uttar Dinajpur	0.0	0.0	0.0	0.0	0.0	0.0

SOURCE: Livestock Population Breedwise, Based on Breed Survey, 2013, Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture and Farmers Welfare, Govt. of India.



II.5. Cattle and Buffalo Breeds

TABLE II.5.4: District and Breed-wise Population of Sahiwal Cattle in West Bengal - 2012

Districts	Sahiwal Pure ('000)			Sahiwal Graded ('000)		
	Male	Female	Total	Male	Female	Total
WEST BENGAL	19.7	53.1	72.8	317.3	678.7	996.0
Bankura	0.0	0.0	0.0	0.2	0.0	0.2
Bardhaman	0.1	0.4	0.4	1.0	4.8	5.8
Birbhum	0.0	0.0	0.0	0.0	0.1	0.1
Dakshin Dinajpur	1.1	2.0	3.1	12.3	19.6	31.9
Darjeeling	0.0	0.0	0.0	6.1	13.1	19.2
Howrah	0.0	0.0	0.0	0.0	0.0	0.0
Hooghly	2.4	7.4	9.8	26.3	106.3	132.6
Jalpaiguri	0.0	0.0	0.0	44.8	107.1	151.9
Cooch Behar	0.1	0.4	0.5	34.7	53.4	88.1
Kolkata	0.0	0.0	0.0	0.0	0.0	0.0
Malda	0.5	1.2	1.7	24.5	33.3	57.8
Murshidabad	5.1	10.8	15.9	74.1	125.6	199.6
Nadia	8.5	24.8	33.2	51.3	125.4	176.7
North 24 Parganas	0.0	0.0	0.0	0.0	0.0	0.0
Paschim Medinipur	0.0	0.0	0.0	0.7	2.9	3.6
Purba Medinipur	0.0	0.0	0.0	0.1	0.8	0.9
Purulia	0.7	0.7	1.4	0.6	0.6	1.2
South 24 Parganas	0.0	0.0	0.0	0.0	0.1	0.1
Uttar Dinajpur	1.3	5.5	6.8	40.5	85.7	126.2

SOURCE: Livestock Population Breedwise, Based on Breed Survey, 2013, Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture and Farmers Welfare, Govt. of India.



II.5. Cattle and Buffalo Breeds

TABLE II.5.5: District and Breed-wise Population of Siri Cattle in West Bengal - 2012

Districts	Siri Pure ('000)			Siri Graded ('000)		
	Male	Female	Total	Male	Female	Total
WEST BENGAL	0.1	0.2	0.3	2.0	3.1	5.2
Bankura	0	0	0	0	0	0
Bardhaman	0	0.1	0.2	0	0	0
Birbhum	0	0	0	0.2	0.2	0.4
Dakshin Dinajpur	0	0	0	0	0	0
Darjeeling	0	0	0	1.8	2.8	4.6
Howrah	0	0	0	0	0	0
Hooghly	0	0	0	0	0	0
Jalpaiguri	0	0	0	0	0	0
Cooch Behar	0	0	0	0	0	0
Kolkata	0	0	0	0	0	0
Malda	0	0	0	0	0	0
Murshidabad	0	0	0	0	0.1	0.1
Nadia	0	0	0	0	0	0
North 24 Parganas	0	0	0	0	0	0
Paschim Medinipur	0	0	0	0	0	0
Purba Medinipur	0	0	0	0	0	0
Purulia	0.1	0.0	0.1	0.0	0.0	0.1
South 24 Parganas	0	0	0	0	0	0
Uttar Dinajpur	0	0	0	0	0	0

SOURCE: Livestock Population Breedwise, Based on Breed Survey, 2013, Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture and Farmers Welfare, Govt. of India.



II.5. Cattle and Buffalo Breeds

TABLE II.5.6: District and Breed-wise Population of Murrah Buffalo in West Bengal - 2012

Districts	Murrah Pure ('000)			Murrah Graded ('000)		
	Male	Female	Total	Male	Female	Total
WEST BENGAL	57.3	89.0	146.3	18.8	15.8	34.5
Bankura	0.0	0.0	0.0	10.9	3.4	14.3
Bardhaman	15.8	34.3	50.2	2.2	5.5	7.6
Birbhum	10.5	4.6	15.2	0.1	0.4	0.5
Dakshin Dinajpur	1.0	0.0	1.0	0.0	0.1	0.1
Darjeeling	0.5	0.6	1.1	0.0	0.0	0.1
Howrah	0.1	2.8	2.9	0.0	0.0	0.0
Hooghly	0.6	6.2	6.9	0.2	1.7	1.9
Jalpaiguri	0.7	2.1	2.8	0.0	0.0	0.0
Cooch Behar	0.8	0.8	1.5	0.3	0.3	0.6
Kolkata	0.1	1.3	1.3	0.0	0.0	0.0
Malda	4.0	1.5	5.5	0.3	0.7	1.0
Murshidabad	3.8	4.1	7.9	3.3	1.0	4.2
Nadia	8.8	4.1	12.9	0.1	0.1	0.3
North 24 Parganas	0.6	18.9	19.4	0.0	0.0	0.0
Paschim Medinipur	4.4	2.2	6.5	1.1	2.0	3.0
Purba Medinipur	0.3	0.1	0.4	0.0	0.0	0.0
Purulia	2.9	1.9	4.7	0.1	0.1	0.2
South 24 Parganas	0.7	2.1	2.8	0.0	0.0	0.0
Uttar Dinajpur	1.8	1.3	3.2	0.1	0.4	0.5

SOURCE: Livestock Population Breedwise, Based on Breed Survey, 2013, Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture and Farmers Welfare, Govt. of India.



PART III : CATTLE AND BUFFALO BREEDS

The cattle population in the state is mainly dominated by non-descript animals. Only one native breed, "Siri" cattle exists in Darjeeling district. The total population for the graded "Siri" cattle was 5,479 during 2012 as per the Breed Survey 2013 of the Government of India.

Though Gir and Sahiwal are not the native breeds of West Bengal, but through the implementation of the new Breeding Policy during March 2007, are only used for upgradation of non-descript cattle in the state. The Breed Survey also substantiates that the state has the second highest population of Gir and Sahiwal, the highest being Gujarat for Gir and Uttar Pradesh for Sahiwal.





III.1. Distribution of Native Breeds in West Bengal

TABLE III.1.1: Distribution of Cattle Breeds in West Bengal

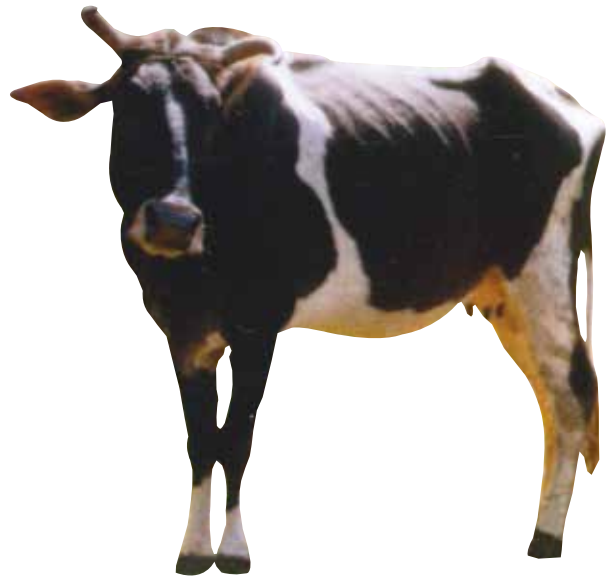
Breed	Breeding Tract	Utility	Distribution
Siri	Darjeeling district of West Bengal and East, West, South and North districts of Sikkim	Draught	Darjeeling

SOURCE: Animal Genetic Resources of India (AGRI-IS), National Bureau of Animal Genetic Resources, ICAR and Livestock Population Breedwise, Based on Breed Survey, 2013, Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture and Farmers Welfare, Govt. of India.





Distribution of Indigenous Cattle Breeds

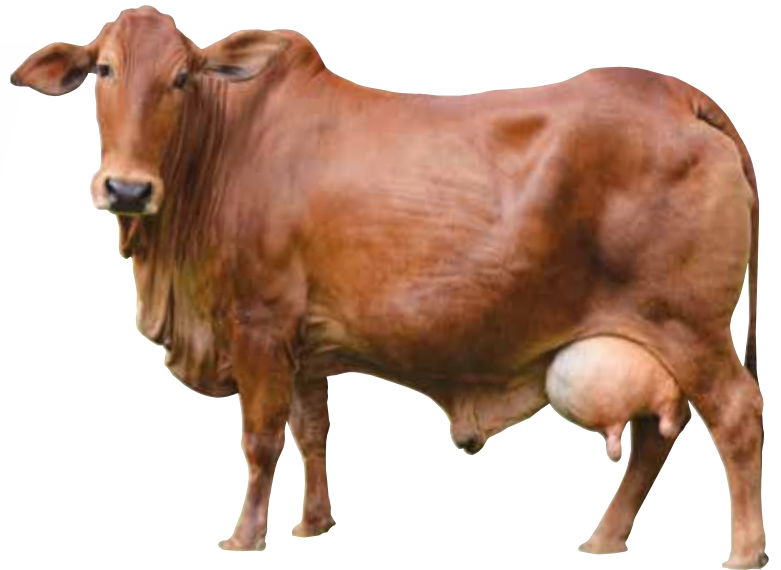


 Siri





Distribution of Indigenous Cattle Breeds



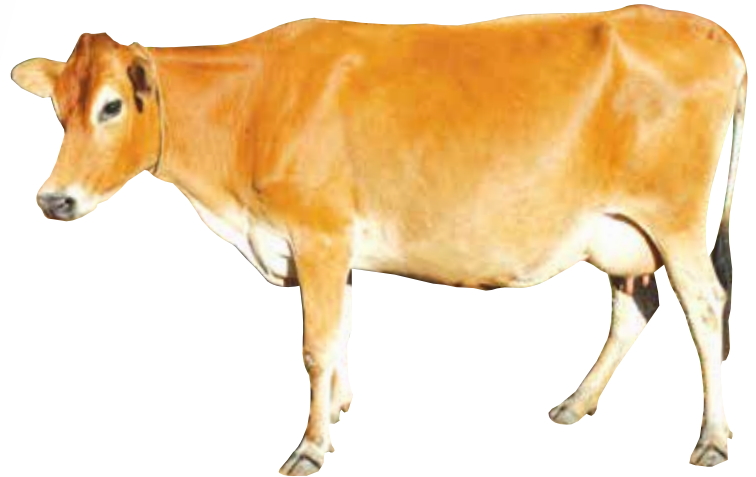
 **Sahiwal**



 **Gir**



Distribution of Jersey Crossbred



 Jersey Crossbred

Distribution of Holstein Friesian Crossbred



 Holstein Friesian Crossbred



Distribution of Buffalo Breed



 **Murrah**







III.2. Performance of Major Breeds

TABLE III.2.1: Performance of Native Cattle Breed

Parameters	Cattle
	Siri
Breed Population as on 2012	Pure - 300 Graded - 5,479
Colour	Animals are either black with white patches or brown with white patches. In some cases they are totally black or brown.
Average Adult Body Weight (Kg)	Male - 454 Female - 363
Lactation Yield (Kg)	426
Lactation Length (days)	229
Calving Interval (days)	420 - 540
Age at First Calving (days)	1,410 - 1,680
Average Milk Fat (%)	2.8 - 5.5

SOURCE: Animal Genetic Resources of India (AGRI-IS), National Bureau of Animal Genetic Resources, ICAR and Estimated Livestock Population Breed Wise, Based on Breed Survey 2013, Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture & Farmers Welfare, Govt. of India.



PART IV : MILK PRODUCTION

Dairying is an important and integral part of the rural economy of West Bengal. Milk production in the state was estimated at 13,804 TKgPD (5.04 Million MT) in 2015-16 which is about 3.2 per cent of total milk production of the country. Milk production in the state has grown at a CAGR of 2.42 per cent during the last 5 years. Paschim Medinipur is the highest milk producing district in the state followed by Bardhaman. It is evident that almost half of the total milk production of West Bengal is concentrated in six districts, namely, Paschim Medinipur, Bardhaman, Murshidabad, Bankura, Nadia and Hooghly.

Out of the total annual milk production of about 5.04 million tonnes in West Bengal during 2015-16, about 35 per cent is retained by the milk producers for home consumption.





IV.1. Production Performance: Milk Production

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

Year	In-milk Bovine ('000)	Milk Yield (kg per day)	Bovine Milk Production ('000 MT)
2002-03	3,769	2.532	3,483
2003-04	3,848	2.541	3,569
2004-05	3,940	2.551	3,669
2005-06	4,029	2.564	3,771
2006-07	3,949	2.689	3,876
2007-08	3,976	2.742	3,979
2008-09	4,005	2.781	4,065
2009-10	4,132	2.762	4,166
2010-11	4,257	2.787	4,331
2011-12	4,396	2.820	4,525
2012-13	4,547	2.837	4,709
2013-14	4,200	3.102	4,755
2014-15	4,291	3.071	4,810
2015-16	3,569	3.768	4,909

SOURCE: Basic Animal Husbandry Statistics (1992-92 to 2014-15), Department of Animal Husbandry, Dairying and Fisheries, Govt. of India and Department of Animal Resources Development, Govt. of West Bengal.



IV.1. Production Performance: Milk Production

TABLE IV.1.2: Year and District-wise Bovine Milk Production

Districts	Bovine Milk Production ('000 MT)													
	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
WEST BENGAL	3,484	3,569	3,670	3,770	3,877	3,969	4,065	4,166	4,332	4,515	4,710	4,754	4,809	4,908
Bankura	152	158	161	165	182	187	188	191	195	201	205	202	259	352
Bardhaman	454	453	464	468	469	489	512	534	562	594	628	642	590	547
Birbhum	87	87	90	91	109	109	110	111	112	114	116	114	167	220
Cooch Behar	116	120	122	125	121	123	124	127	130	134	137	136	142	188
Dakshin Dinajpur	50	52	54	57	70	71	72	74	76	80	82	82	85	105
Darjeeling	136	142	147	152	127	131	135	138	143	147	151	150	157	92
Hooghly	351	368	385	402	402	416	428	443	461	482	502	507	381	316
Howrah	128	129	131	132	113	113	113	114	115	117	118	117	223	224
Jalpaiguri	102	103	105	107	120	123	126	131	136	141	148	149	187	235
Kolkata	24	22	22	22	3	3	3	4	4	4	4	2	8	5
Malda	137	139	141	145	185	187	190	190	193	197	200	196	235	209
Murshidabad	246	260	275	290	455	473	490	510	537	563	593	604	475	381
Nadia	454	457	465	479	293	303	312	324	365	410	461	502	399	318
North 24 Parganas	427	442	462	478	399	408	418	430	444	459	474	474	364	293
Paschim Medinipur	188	188	192	196	299	301	304	307	314	318	325	320	520	606
Purba Medinipur	176	187	189	194	222	225	229	232	238	244	250	246	268	297
Purulia	41	42	41	42	47	47	47	45	45	47	47	45	50	132
South 24 Parganas	158	159	161	164	168	170	171	172	176	178	182	178	158	198
Uttar Dinajpur	60	60	60	61	89	88	88	86	87	87	89	86	142	189

SOURCE: Department of Animal Resources Development, Govt. of West Bengal.





IV.1. Production Performance: Milk Production

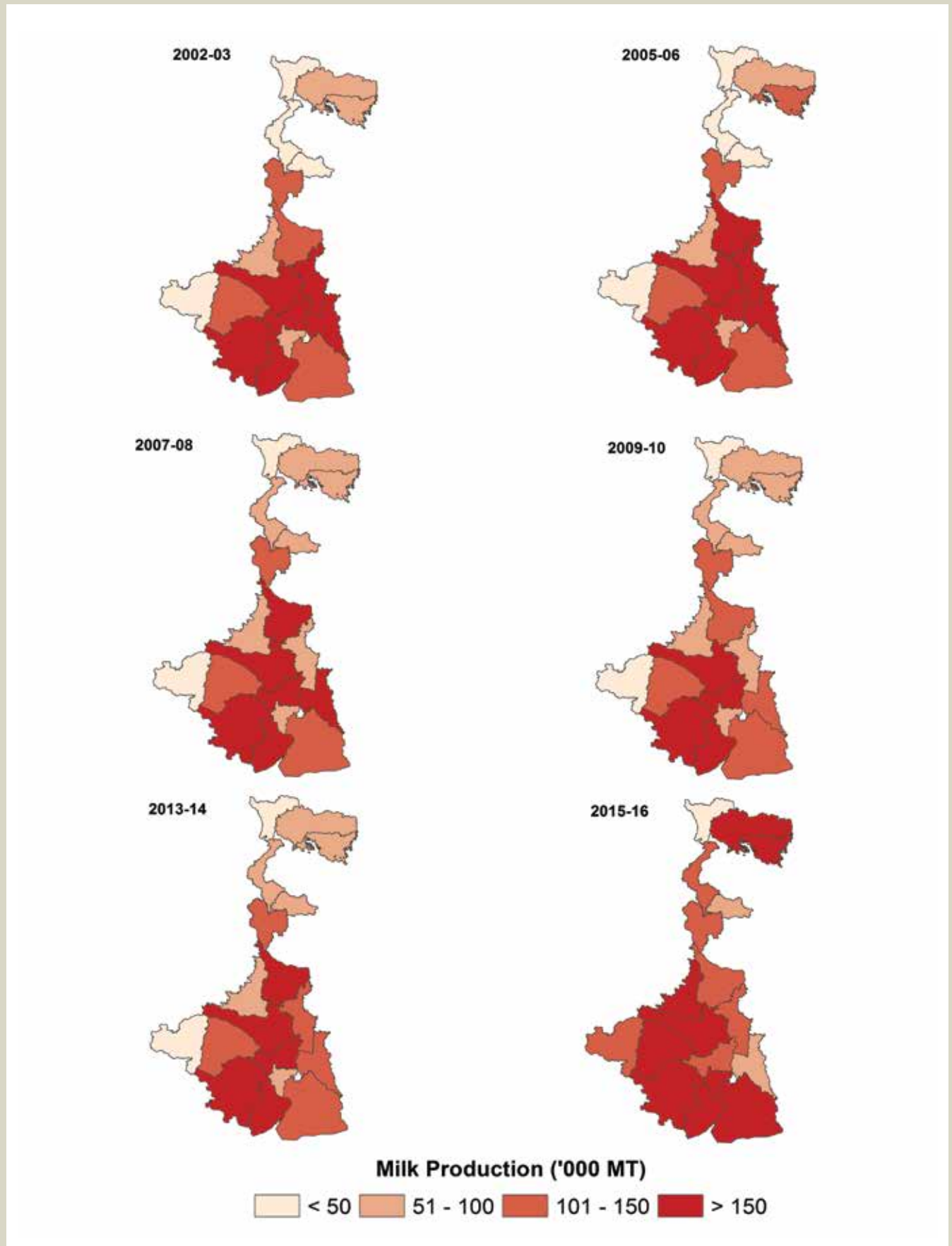
TABLE IV.1.3: Year and District-wise Indigenous Cattle Milk Production

Districts	Indigenous Cattle Milk Production ('000 MT)													
	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
WEST BENGAL	2,222	2,262	2,321	2,377	2,191	2,238	2,282	2,117	2,187	2,276	2,358	2,360	2,376	3,058
Bankura	114	118	121	124	131	134	135	126	129	133	136	134	159	261
Bardhaman	322	320	329	332	284	297	310	298	313	333	352	359	313	331
Birbhum	75	75	77	78	76	76	77	65	66	67	68	67	99	163
Cooch Behar	97	100	101	103	79	80	81	87	89	92	94	93	95	153
Dakshin Dinajpur	41	43	45	47	62	63	64	65	67	70	72	72	70	94
Darjeeling	33	34	34	35	39	40	41	45	47	48	49	48	43	24
Hooghly	198	206	214	223	192	198	203	197	205	216	225	227	148	147
Howrah	92	93	94	95	72	73	73	65	66	67	68	67	181	192
Jalpaiguri	72	72	73	75	81	83	85	74	77	80	84	84	105	175
Kolkata	10	9	9	9	1	1	1	1	1	1	1	0	2	1
Malda	103	104	107	109	125	127	128	131	133	136	138	135	142	141
Murshidabad	145	153	162	170	155	161	166	136	143	151	159	162	126	127
Nadia	175	173	175	180	88	91	93	83	93	105	118	128	114	112
North 24 Parganas	233	239	249	257	167	171	175	134	138	144	149	148	110	99
Paschim Medinipur	151	150	153	156	222	224	226	202	206	210	214	210	258	386
Purba Medinipur	161	170	172	176	191	193	196	180	184	189	194	191	172	228
Purulia	29	29	29	30	33	34	34	33	33	34	34	33	36	112
South 24 Parganas	125	126	128	130	131	133	134	137	140	142	145	142	115	162
Uttar Dinajpur	47	47	47	48	60	60	60	58	59	59	60	58	89	149

SOURCE: Department of Animal Resources Development, Govt. of West Bengal.



District-wise Indigenous Cattle Milk Production





IV.1. Production Performance: Milk Production

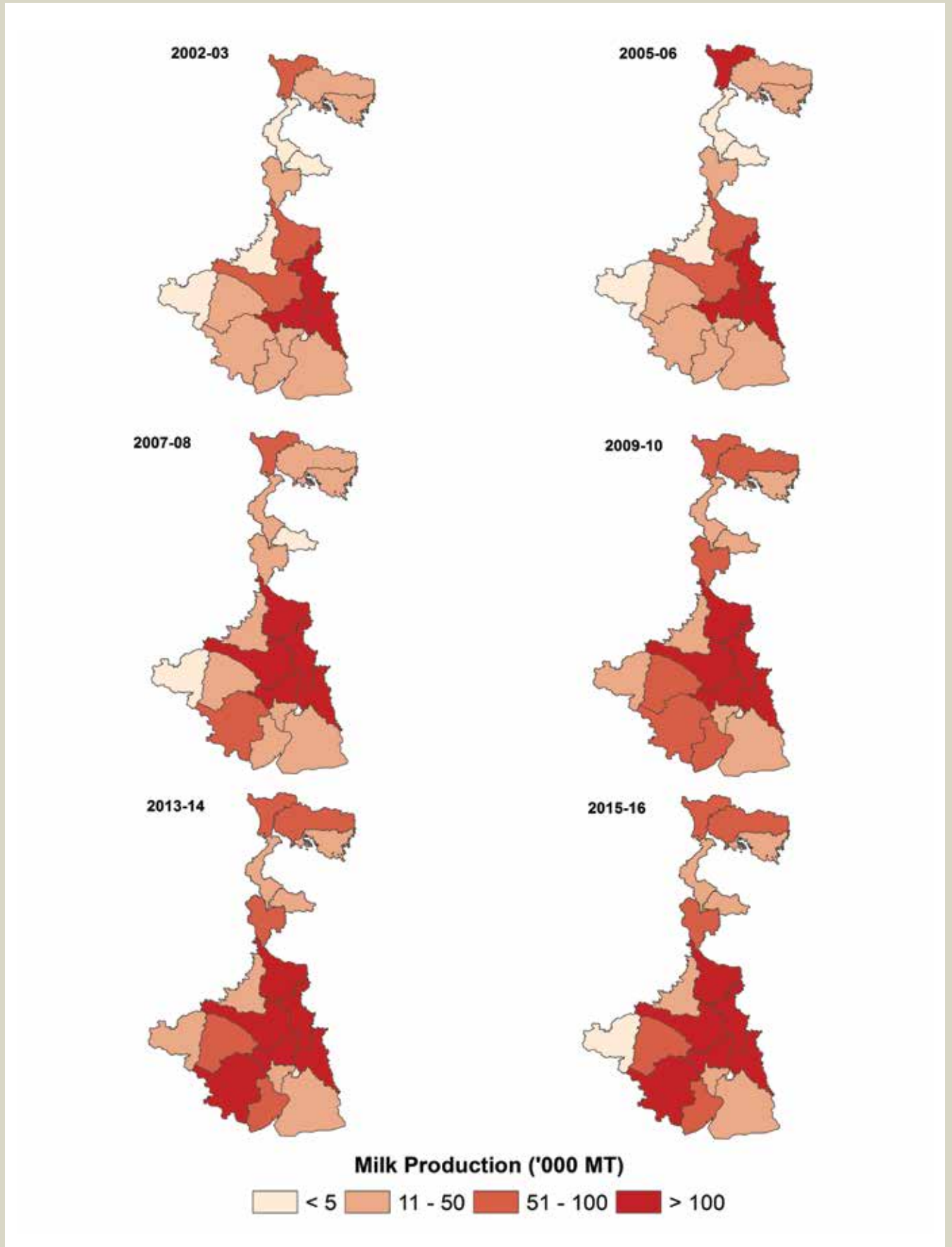
TABLE IV.1.4: Year and District-wise Crossbred Cattle Milk Production

Districts	Crossbred Cattle Milk Production ('000 MT)													
	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
WEST BENGAL	965	1,005	1,056	1,091	1,436	1,491	1,537	1,834	1,923	2,016	2,121	2,159	2,200	1,610
Bankura	20	21	22	22	39	41	41	54	55	57	58	57	89	77
Bardhaman	72	73	77	78	136	144	151	187	197	208	220	225	222	163
Birbhum	6	6	7	7	25	26	26	40	40	41	42	41	60	47
Cooch Behar	17	18	19	20	41	42	42	39	40	41	42	42	46	34
Dakshin Dinajpur	5	5	5	6	8	8	8	9	9	10	10	10	15	11
Darjeeling	99	104	109	113	85	88	91	89	92	95	98	98	112	66
Hooghly	127	135	144	151	188	196	203	216	225	235	245	247	211	149
Howrah	21	21	22	22	28	28	28	37	37	38	38	38	35	26
Jalpaiguri	27	28	29	29	36	37	38	54	56	58	60	61	79	56
Kolkata	10	9	9	9	1	1	1	1	1	1	1	1	4	2
Malda	19	20	20	21	48	49	50	51	52	53	54	53	83	57
Murshidabad	68	73	79	84	270	283	294	355	374	392	413	420	329	235
Nadia	250	255	263	271	199	206	213	237	267	300	337	368	280	201
North 24 Parganas	152	160	171	177	187	194	199	254	262	271	280	280	195	142
Paschim Medinipur	27	28	29	30	63	64	65	98	100	101	103	102	252	205
Purba Medinipur	15	17	17	18	31	32	33	52	54	55	56	55	94	66
Purulia	5	5	5	5	5	5	5	7	7	8	8	7	9	8
South 24 Parganas	20	20	21	22	23	24	24	28	29	29	30	29	38	31
Uttar Dinajpur	7	7	8	8	22	22	22	25	25	25	26	25	47	34

SOURCE: Department of Animal Resources Development, Govt. of West Bengal.



District-wise Crossbred Cattle Milk Production





IV.1. Production Performance: Milk Production

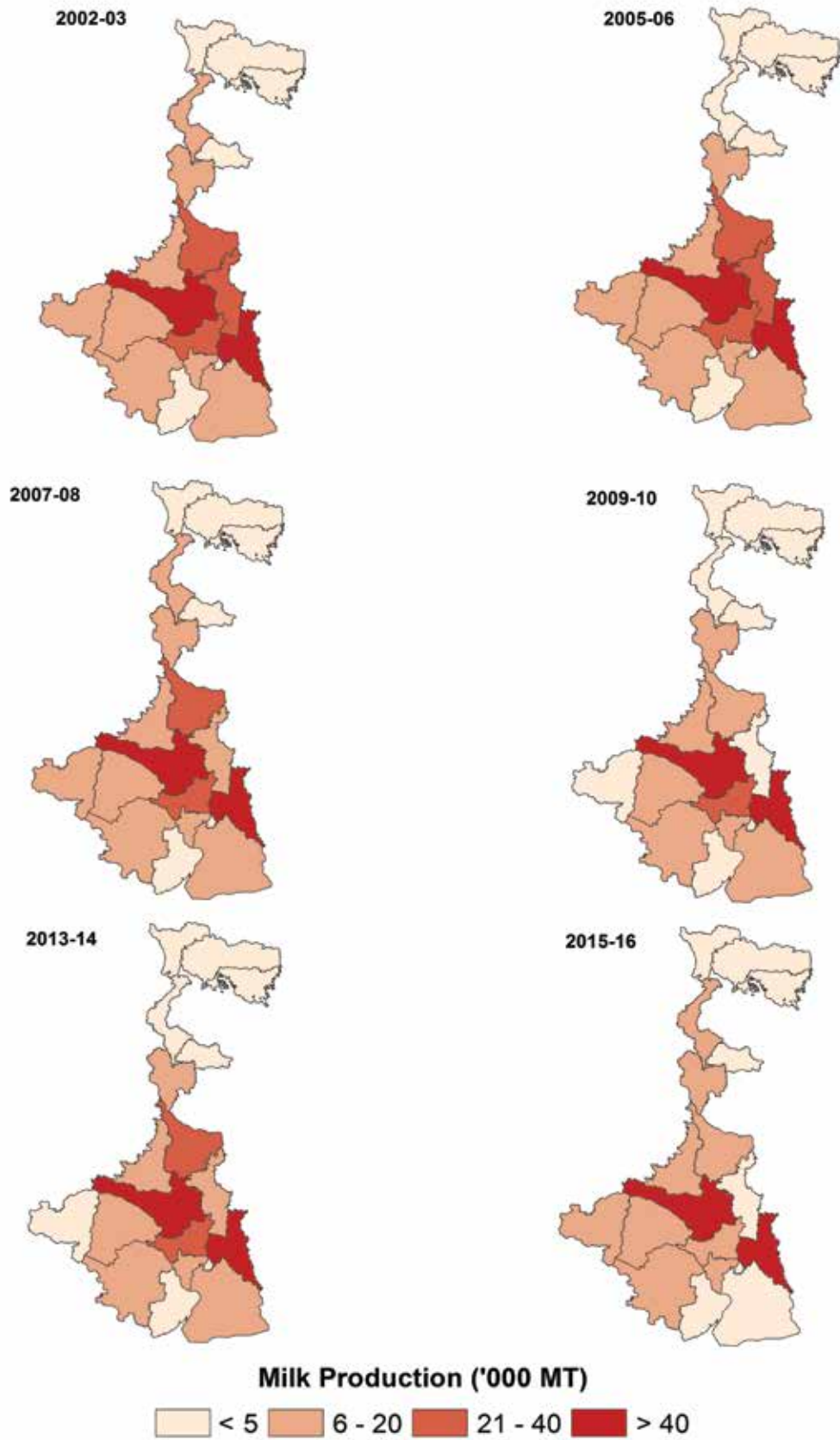
TABLE IV.1.5: Year and District-wise Buffalo Milk Production

Districts	Buffalo Milk Production ('000 MT)													
	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
WEST BENGAL	297	302	293	302	250	240	246	215	222	223	231	235	233	240
Bankura	18	19	18	19	12	12	12	11	11	11	11	11	11	14
Bardhaman	60	60	58	58	49	48	51	49	52	53	56	58	55	53
Birbhum	6	6	6	6	8	7	7	6	6	6	6	6	8	10
Cooch Behar	2	2	2	2	1	1	1	1	1	1	1	1	1	1
Dakshin Dinajpur	4	4	4	4	0	0	0	0	0	0	0	0	0	0
Darjeeling	4	4	4	4	3	3	3	4	4	4	4	4	2	2
Hooghly	26	27	27	28	22	22	22	30	31	31	32	33	22	20
Howrah	15	15	15	15	13	12	12	12	12	12	12	12	7	6
Jalpaiguri	3	3	3	3	3	3	3	3	3	3	4	4	3	4
Kolkata	4	4	4	4	1	1	1	2	2	2	2	1	2	2
Malda	15	15	14	15	12	11	12	8	8	8	8	8	10	11
Murshidabad	33	34	34	36	30	29	30	19	20	20	21	22	20	19
Nadia	29	29	27	28	6	6	6	4	5	5	6	6	5	5
North 24 Parganas	42	43	42	44	45	43	44	42	44	44	45	46	59	52
Paschim Medinipur	10	10	10	10	14	13	13	7	8	7	8	8	10	15
Purba Medinipur	0	0	0	0	0	0	0	0	0	0	0	0	2	3
Purulia	7	8	7	7	9	8	8	5	5	5	5	5	5	12
South 24 Parganas	13	13	12	12	14	13	13	7	7	7	7	7	5	5
Uttar Dinajpur	6	6	5	5	7	6	6	3	3	3	3	3	6	6

SOURCE: Department of Animal Resources Development, Govt. of West Bengal.



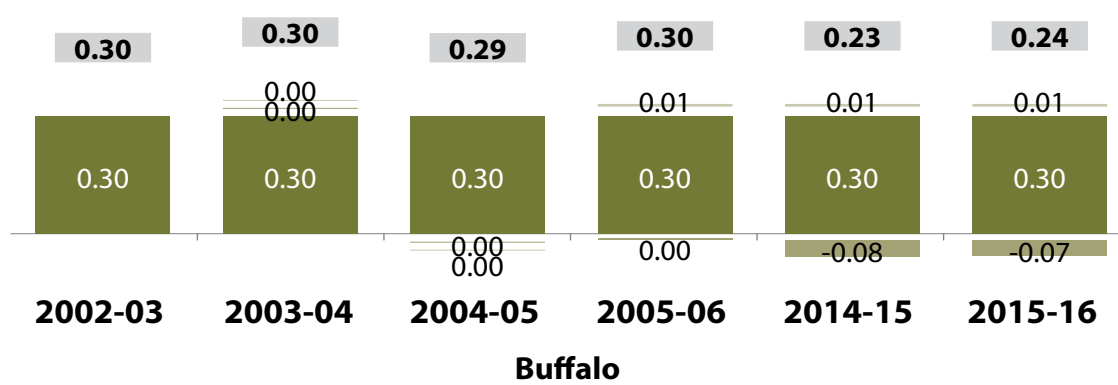
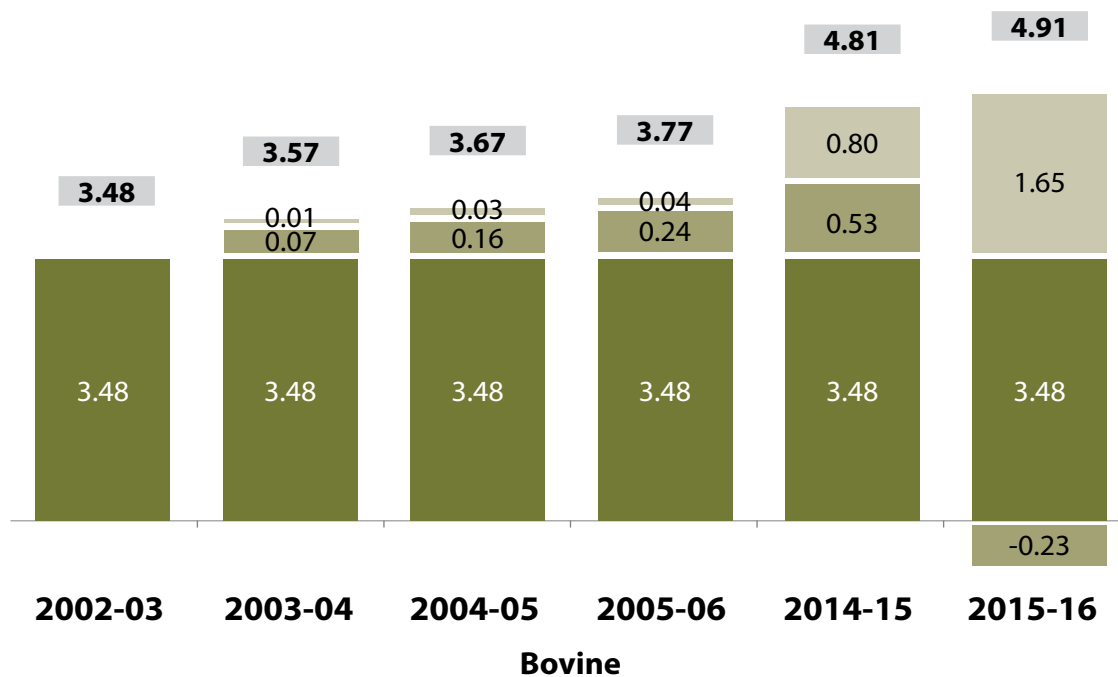
District-wise Buffalo Milk Production





West Bengal's Milk Production (MMT)

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



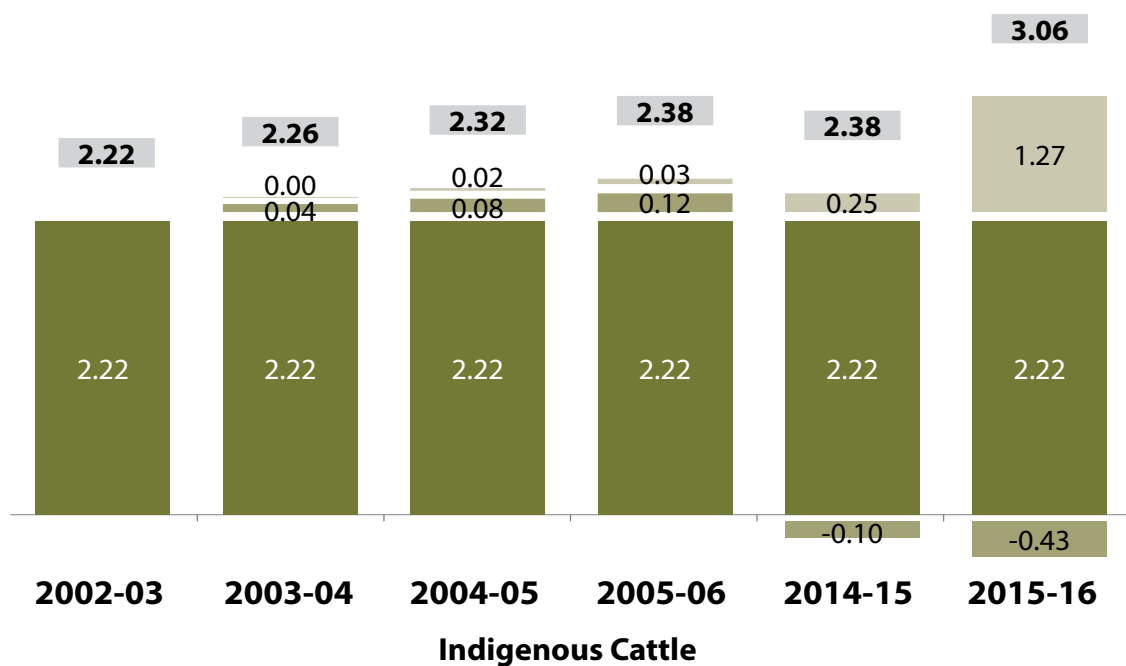
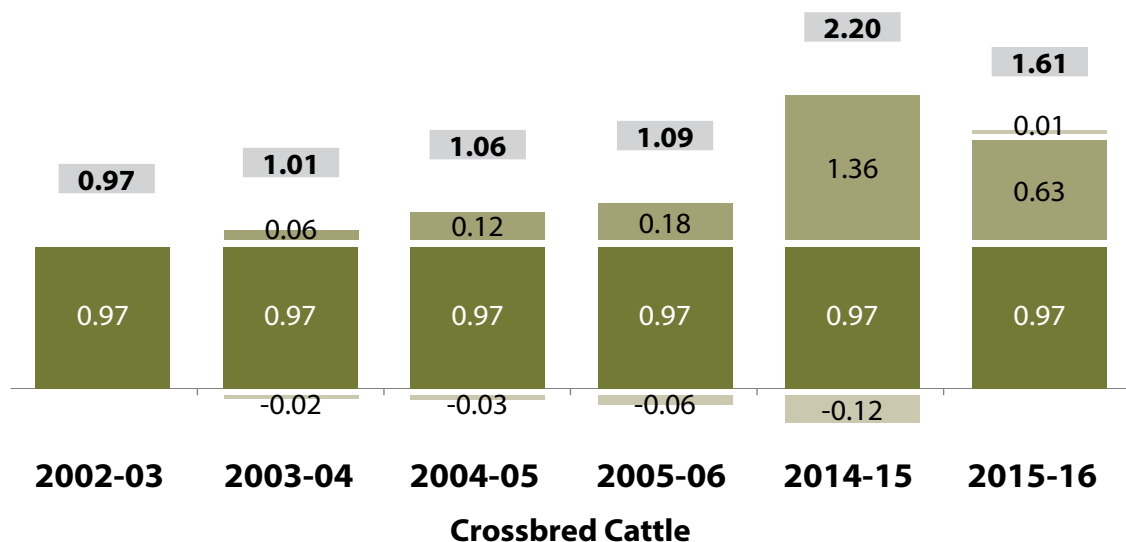
- Milk production in base year - 2002-2003 - MMT
- Total milk production - MMT
- Change in total milk production due to change in average yield - kg/in-milk animal per day - MMT
- Change in total milk production due to change in numbers of in milk animals - MMT





West Bengal's Milk Production (MMT)

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



- Milk production in base year - 2002-2003 - MMT
- Total milk production - MMT
- Change in total milk production due to change in average yield - kg/in-milk animal per day - MMT
- Change in total milk production due to change in numbers of in milk animals - MMT





IV.1. Production Performance: Milk Production

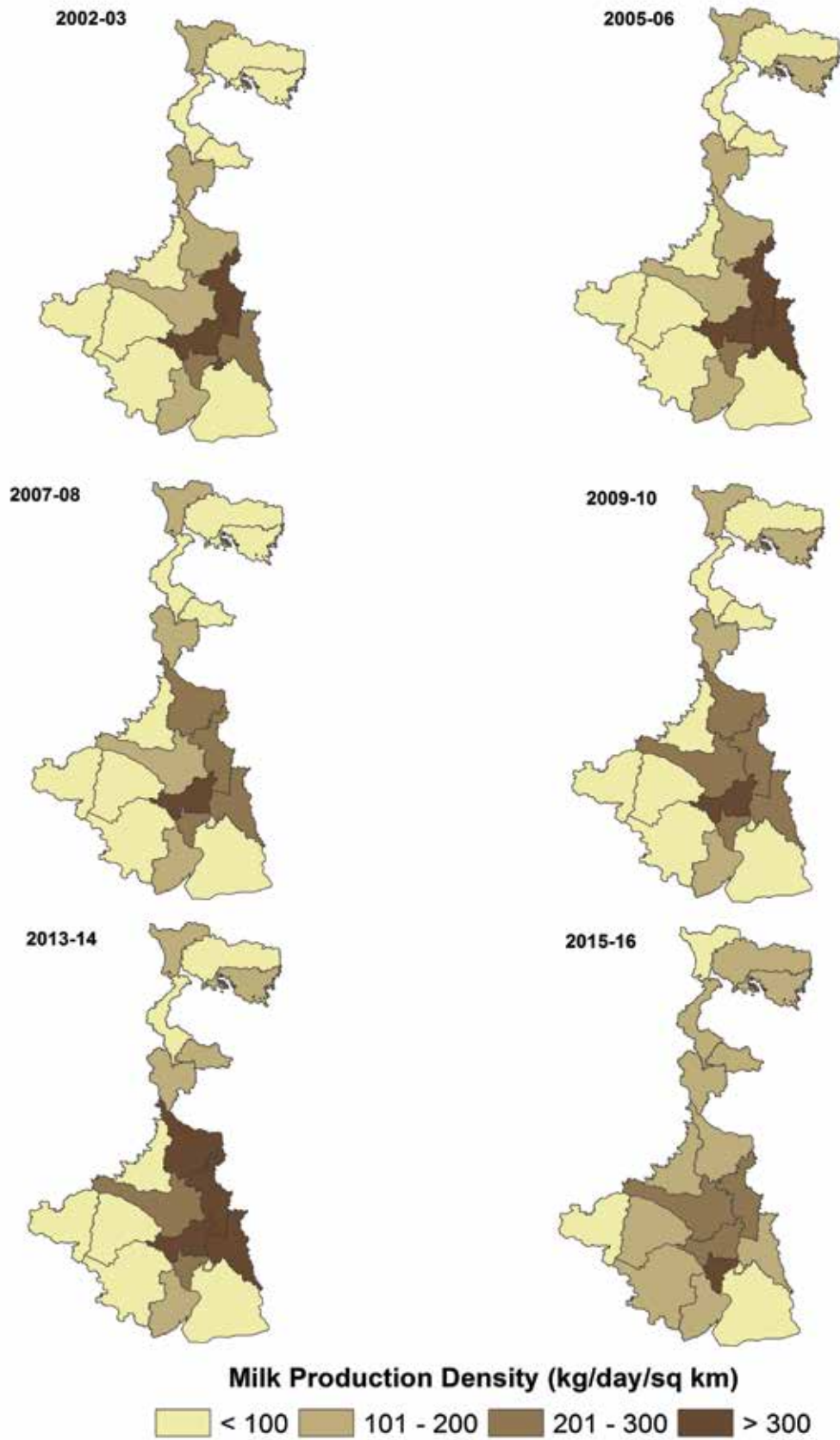
TABLE IV.1.6: Year and District-wise Total Milk Production Density

Districts	Milk Production Density (kg/day/sq km)													
	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
WEST BENGAL	108	110	113	116	120	123	129	129	134	139	145	147	149	152
Bankura	61	63	64	66	73	74	79	76	78	80	82	81	103	140
Bardhaman	177	177	181	183	183	191	204	208	219	232	245	250	230	213
Birbhum	52	53	54	55	65	66	73	66	67	69	70	69	100	133
Cooch Behar	94	98	99	101	98	99	104	102	105	108	111	110	115	153
Dakshin Dinajpur	62	65	67	70	86	88	93	92	95	98	101	101	106	130
Darjeeling	119	123	128	133	112	114	119	120	124	127	131	130	137	80
Hooghly	306	320	335	349	350	362	380	385	402	419	437	441	331	276
Howrah	239	241	244	247	210	211	214	212	215	218	221	217	416	420
Jalpaiguri	45	45	46	47	53	54	57	58	60	62	65	65	82	103
Kolkata	349	334	322	311	61	58	56	54	52	50	48	45	115	73
Malda	101	102	104	107	136	137	143	140	142	145	147	144	173	154
Murshidabad	126	134	142	149	235	243	259	263	276	290	306	311	244	196
Nadia	316	319	325	335	205	211	221	226	254	286	322	350	278	222
North 24 Parganas	285	295	309	320	267	273	283	288	297	307	317	317	244	196
Paschim Medinipur	55	55	56	57	88	88	92	90	92	93	95	94	152	177
Purba Medinipur	103	109	110	113	129	131	134	135	138	142	145	144	156	173
Purulia	18	18	18	19	20	21	24	20	20	20	21	20	22	58
South 24 Parganas	43	44	44	45	46	47	48	48	48	49	50	49	44	54
Uttar Dinajpur	52	52	52	53	77	77	82	76	76	77	77	75	124	165

SOURCE: Estimated from Integrated Sample Survey Reports, Department of Animal Resources Development, Govt. of West Bengal.



District-wise Milk Production Density





IV.2. Production Performance: Milk Yield

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

Districts	Bovine Milk Yield (kg/day)					
	2002-03	2003-04	2004-05	2005-06	2014-15	2015-16
WEST BENGAL	2.532	2.540	2.550	2.563	3.075	3.768
Bankura	1.690	1.721	1.724	1.733	2.217	3.523
Bardhaman	2.782	2.726	2.729	2.706	3.484	3.814
Birbhum	1.556	1.547	1.538	1.538	2.254	3.471
Cooch Behar	1.570	1.609	1.594	1.598	2.120	3.271
Dakshin Dinajpur	1.936	2.020	2.041	2.071	2.329	3.286
Darjeeling	5.472	5.438	5.413	5.377	5.892	4.550
Hooghly	3.194	3.268	3.322	3.379	4.046	4.192
Howrah	2.733	2.703	2.680	2.662	2.909	3.417
Jalpaiguri	1.763	1.751	1.748	1.745	2.287	3.395
Kolkata	5.572	5.172	4.849	4.539	5.768	4.875
Malda	2.834	2.821	2.824	2.838	3.557	3.708
Murshidabad	3.039	3.165	3.260	3.358	4.382	4.540
Nadia	3.867	3.772	3.715	3.704	4.355	4.491
North 24 Parganas	3.491	3.523	3.590	3.616	4.492	4.493
Paschim Medinipur	1.861	1.830	1.830	1.831	2.683	3.779
Purba Medinipur	1.809	1.889	1.873	1.877	2.670	3.492
Purulia	0.964	0.953	0.947	0.947	1.096	3.270
South 24 Parganas	1.981	1.963	1.957	1.956	2.365	3.396
Uttar Dinajpur	1.712	1.678	1.662	1.655	2.210	3.453

SOURCE: Department of Animal Resources Development, Govt. of West Bengal.





IV.2. Production Performance: Milk Yield

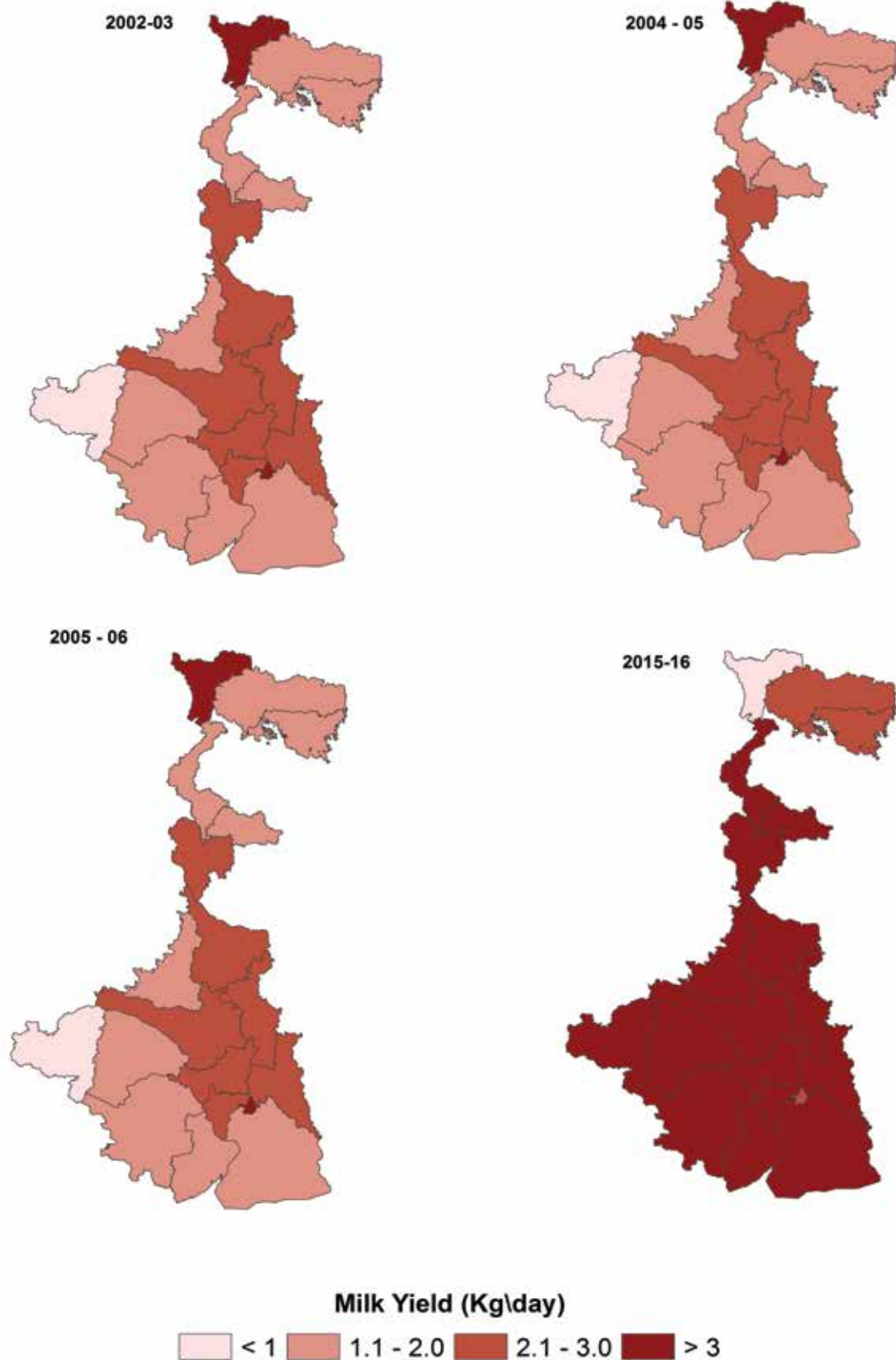
TABLE IV.2.2: Year and District-wise Indigenous Cattle Milk Yield

Districts	Indigenous Cattle Milk Yield (kg/day)					
	2002-03	2003-04	2004-05	2005-06	2014-15	2015-16
WEST BENGAL	1.932	1.932	1.949	1.962	2.154	3.120
Bankura	1.409	1.428	1.441	1.449	1.679	3.120
Bardhaman	2.295	2.241	2.261	2.244	2.642	3.150
Birbhum	1.407	1.392	1.392	1.392	1.637	3.050
Cooch Behar	1.378	1.406	1.396	1.401	1.653	2.980
Dakshin Dinajpur	1.713	1.776	1.810	1.838	2.088	3.120
Darjeeling	3.407	3.392	3.407	3.451	4.693	2.880
Hooghly	2.400	2.449	2.504	2.564	2.879	3.210
Howrah	2.274	2.241	2.239	2.226	2.635	3.200
Jalpaiguri	1.376	1.359	1.359	1.360	1.598	2.990
Kolkata	4.587	4.264	4.054	3.838	5.013	2.930
Malda	2.439	2.417	2.437	2.450	2.842	3.180
Murshidabad	2.320	2.407	2.500	2.585	2.830	3.190
Nadia	2.517	2.449	2.431	2.456	2.879	3.200
North 24 Parganas	2.651	2.672	2.744	2.785	3.141	3.190
Paschim Medinipur	1.620	1.586	1.592	1.595	1.865	3.160
Purba Medinipur	1.699	1.768	1.755	1.762	2.079	3.130
Purulia	0.757	0.743	0.745	0.744	0.874	3.050
South 24 Parganas	1.700	1.678	1.683	1.683	1.973	3.120
Uttar Dinajpur	1.446	1.412	1.406	1.397	1.660	3.130

SOURCE: Department of Animal Resources Development, Govt. of West Bengal.



District-wise Indigenous Cattle Milk Yield





IV.2. Production Performance: Milk Yield

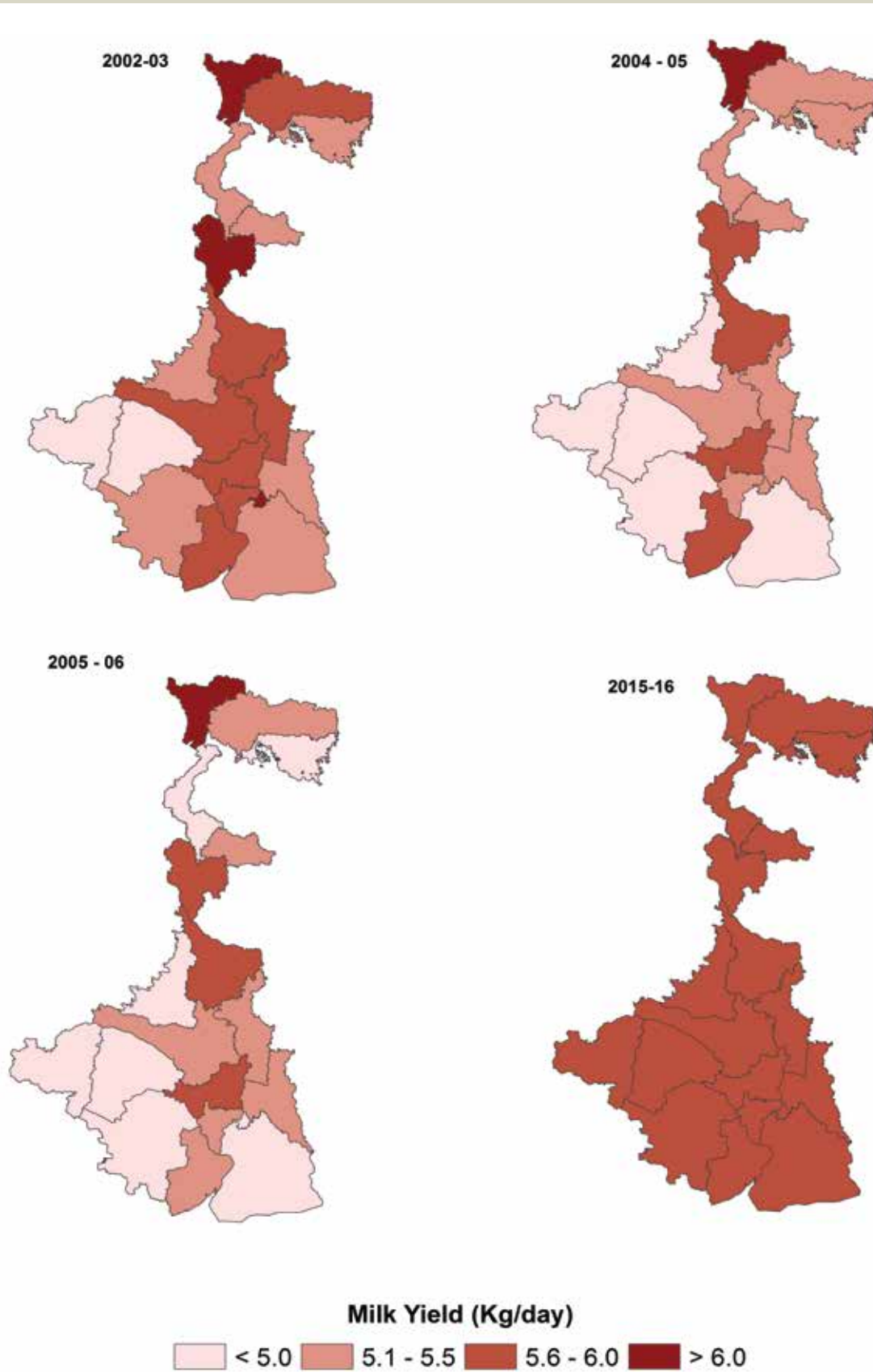
TABLE IV.2.3: Year and District-wise Crossbred Cattle Milk Yield

Districts	Crossbred Cattle Milk Yield (kg/day)					
	2002-03	2003-04	2004-05	2005-06	2014-15	2015-16
WEST BENGAL	5.684	5.552	5.515	5.373	5.264	5.730
Bankura	4.658	4.631	4.595	4.452	4.500	5.670
Bardhaman	5.728	5.478	5.439	5.201	5.323	5.738
Birbhum	5.225	5.079	4.994	4.806	4.935	5.810
Cooch Behar	5.191	5.183	5.066	4.905	5.036	5.637
Dakshin Dinajpur	5.325	5.383	5.408	5.280	5.231	5.684
Darjeeling	6.811	6.680	6.615	6.477	6.491	5.713
Hooghly	5.565	5.558	5.594	5.519	5.401	5.762
Howrah	5.504	5.316	5.224	5.006	5.166	5.751
Jalpaiguri	5.527	5.344	5.259	5.067	5.193	5.610
Kolkata	6.432	5.858	5.480	4.994	5.692	5.608
Malda	6.005	5.838	5.788	5.611	5.673	5.741
Murshidabad	5.503	5.595	5.718	5.693	5.437	5.772
Nadia	5.834	5.579	5.446	5.296	5.421	5.763
North 24 Parganas	5.489	5.411	5.468	5.343	5.258	5.737
Paschim Medinipur	5.111	4.896	4.844	4.668	4.757	5.779
Purba Medinipur	5.532	5.630	5.517	5.317	5.471	5.736
Purulia	4.547	4.400	4.341	4.170	4.276	5.645
South 24 Parganas	5.142	4.972	4.906	4.723	4.831	5.706
Uttar Dinajpur	5.460	5.218	5.114	4.888	5.070	5.640

SOURCE: Department of Animal Resources Development, Govt. of West Bengal.



District-wise Crossbred Cattle Milk Yield





IV.2. Production Performance: Milk Yield

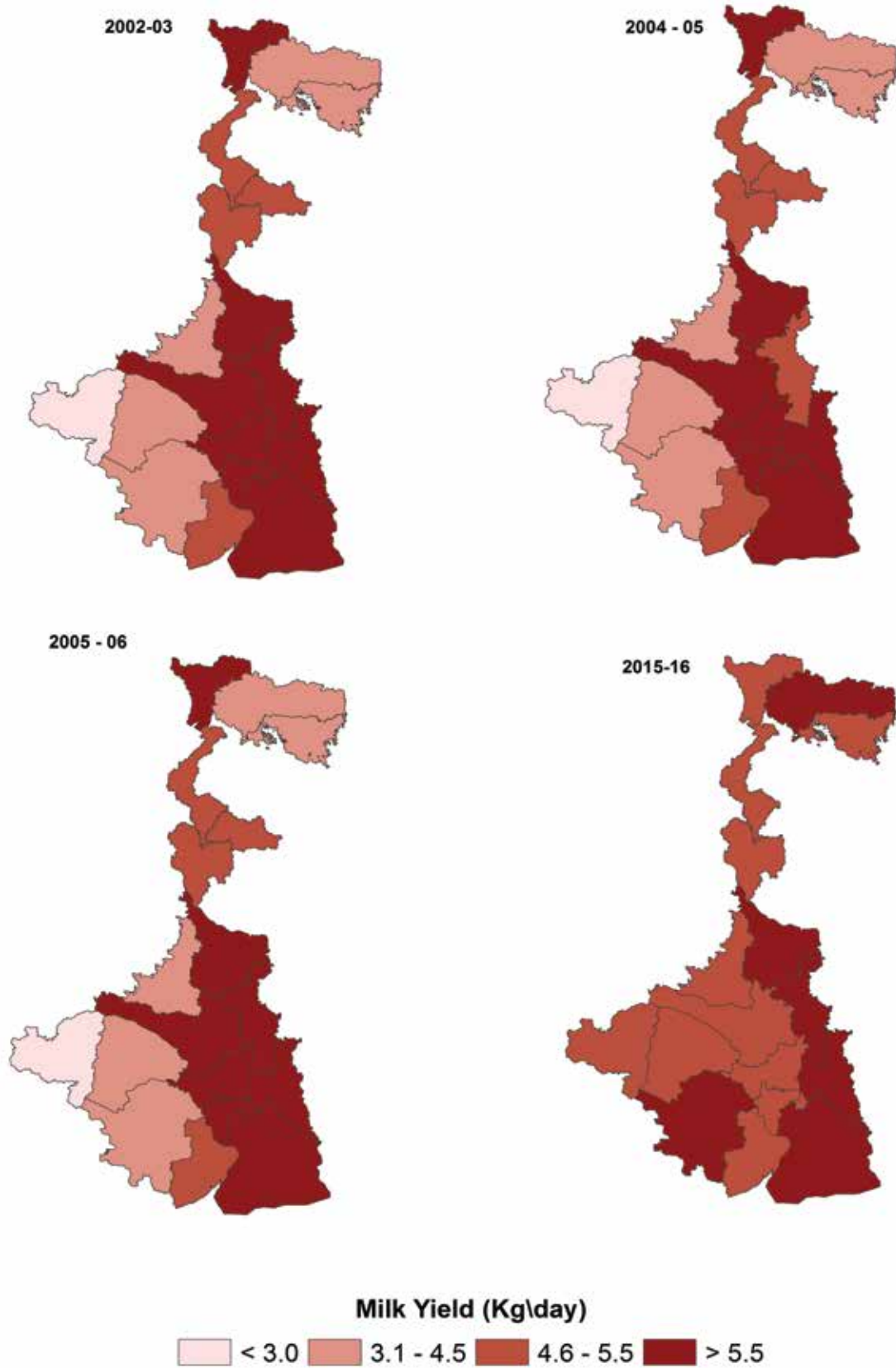
TABLE IV.2.4: Year and District-wise Buffalo Milk Yield

Districts	Buffalo Milk Yield (kg/day)					
	2002-03	2003-04	2004-05	2005-06	2014-15	2015-16
WEST BENGAL	5.272	5.325	5.217	5.371	5.508	5.440
Bankura	3.956	4.07	3.971	4.083	4.162	5.370
Bardhaman	5.862	5.8	5.666	5.749	5.932	5.430
Birbhum	4.058	4.079	3.946	4.029	4.172	5.330
Cooch Behar	3.806	3.926	3.771	3.874	4.015	5.440
Dakshin Dinajpur	4.631	4.844	4.788	4.961	4.955	
Darjeeling	6.358	6.327	6.122	6.265	6.472	5.350
Hooghly	5.697	5.887	5.826	6.098	6.021	5.410
Howrah	5.959	5.954	5.759	5.854	6.089	5.430
Jalpaiguri	3.995	3.994	3.867	3.954	4.085	5.510
Kolkata	6.925	6.526	6.007	5.809	6.674	5.240
Malda	5.288	5.321	5.189	5.338	5.442	5.450
Murshidabad	5.526	5.815	5.845	6.176	5.947	5.520
Nadia	5.781	5.722	5.494	5.67	5.852	5.530
North 24 Parganas	6.221	6.35	6.313	6.546	6.494	5.530
Paschim Medinipur	3.909	3.87	3.763	3.846	3.958	5.540
Purba Medinipur	4.649	4.89	4.704	4.811	5.001	5.420
Purulia	2.327	2.328	2.258	2.302	2.381	5.350
South 24 Parganas	5.997	4.681	5.827	5.952	6.138	5.590
Uttar Dinajpur	5.123	5.067	4.886	4.956	5.182	5.450

SOURCE: Department of Animal Resources Development, Govt. of West Bengal.



District-wise Buffalo Milk Yield





IV.3. Production Performance: Animal Population

TABLE IV.3.1: Year and District-wise In-milk Bovine Population

Districts	In-milk Bovine Population ('000)					
	2002-03	2003-04	2004-05	2005-06	2014-15	2015-16
WEST BENGAL	3,769	3,848	3,940	4,029	4,284	3,569
Bankura	246	251	256	260	320	274
Bardhaman	447	455	465	474	464	393
Birbhum	153	155	159	161	203	174
Cooch Behar	203	206	211	215	183.5	158
Dakshin Dinajpur	71	72	73	75	100	87
Darjeeling	69	71	75	78	73	55
Hooghly	301	309	317	326	258	207
Howrah	128	131	134	136	210	180
Jalpaiguri	158	161	165	168	224	189
Kolkata	12	12	12	13	3.8	3
Malda	132	135	138	140	181	155
Murshidabad	221	226	231	237	297	230
Nadia	321	332	343	355	251	194
North 24 Parganas	335	343	353	362	222	179
Paschim Medinipur	276	281	287	293	531	440
Purba Medinipur	267	272	277	283	275	233
Purulia	116	118	120	122	125	110
South 24 Parganas	218	221	226	230	183	159
Uttar Dinajpur	95	97	99	100	176	150

SOURCE: Department of Animal Resources Development, Govt. of West Bengal.





IV.3. Production Performance: Animal Population

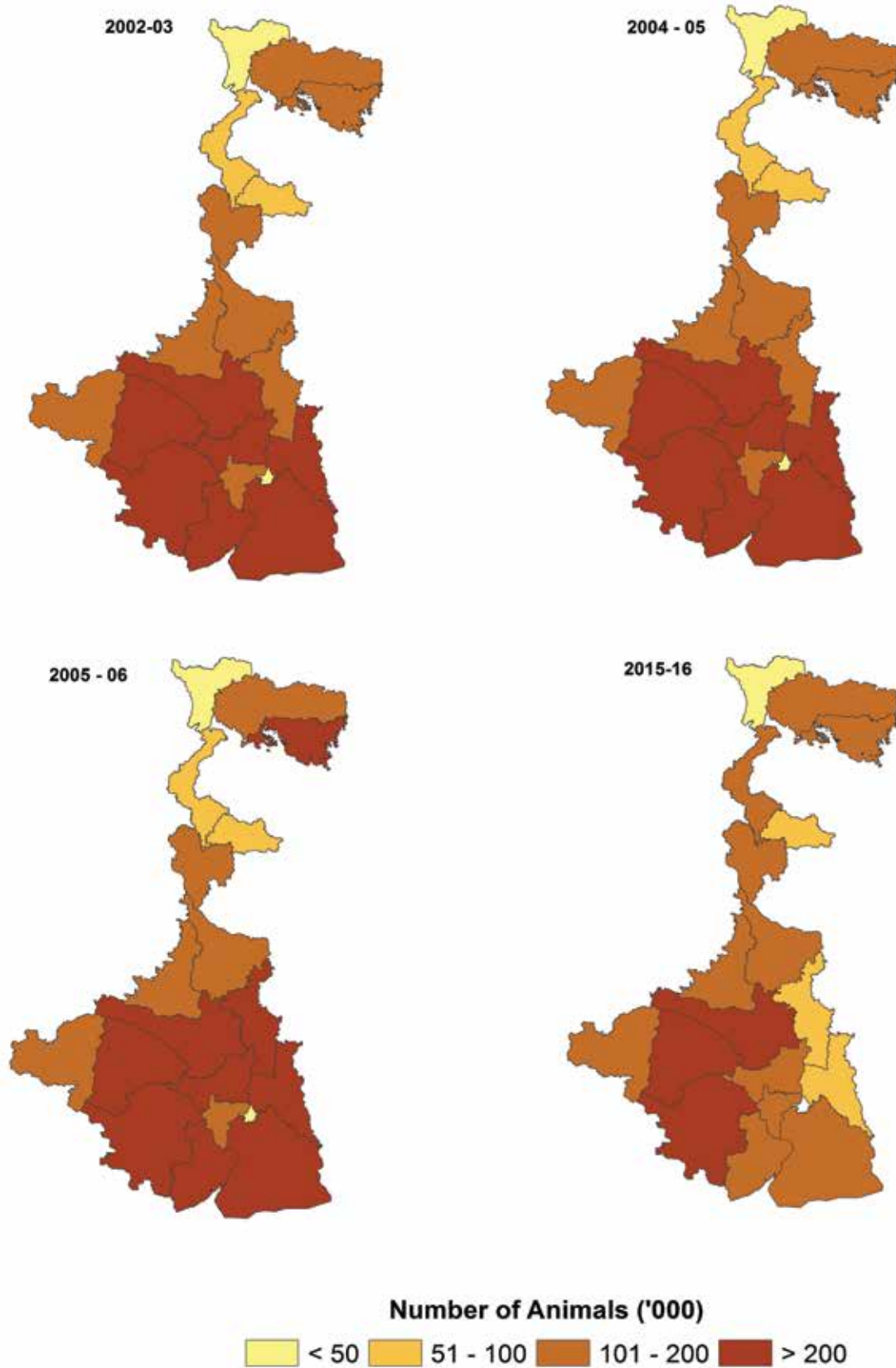
TABLE IV.3.2: Year and District-wise In-milk Indigenous Cattle Population

Districts	In-milk Indigenous Cattle Population ('000)					
	2002-03	2003-04	2004-05	2005-06	2014-15	2015-16
WEST BENGAL	3,149	3,199	3,262	3,319	3,023	2,680
Bankura	222	226	230	234	259	229
Bardhaman	384	390	398	405	324	289
Birbhum	146	148	151	154	165	146
Cooch Behar	192	195	199	202	158	141
Dakshin Dinajpur	66	67	68	69	92	82
Darjeeling	27	27	28	28	25	23
Hooghly	226	230	234	238	141	126
Howrah	111	113	115	117	188	165
Jalpaiguri	143	145	148	150	180	160
Kolkata	6	6	6	6	0.8	1
Malda	116	118	120	122	136	122
Murshidabad	171	174	177	180	122	109
Nadia	190	193	197	201	108	96
North 24 Parganas	240	244	249	253	96	85
Paschim Medinipur	255	259	264	269	379	335
Purba Medinipur	259	263	269	273	227	200
Purulia	105	106	108	110	113	101
South 24 Parganas	201	204	208	212	160	142
Uttar Dinajpur	89	90	92	93	148	130

SOURCE: Department of Animal Resources Development, Govt. of West Bengal.



District-wise In-milk Indigenous Cattle Population





IV.3. Production Performance: Animal Population

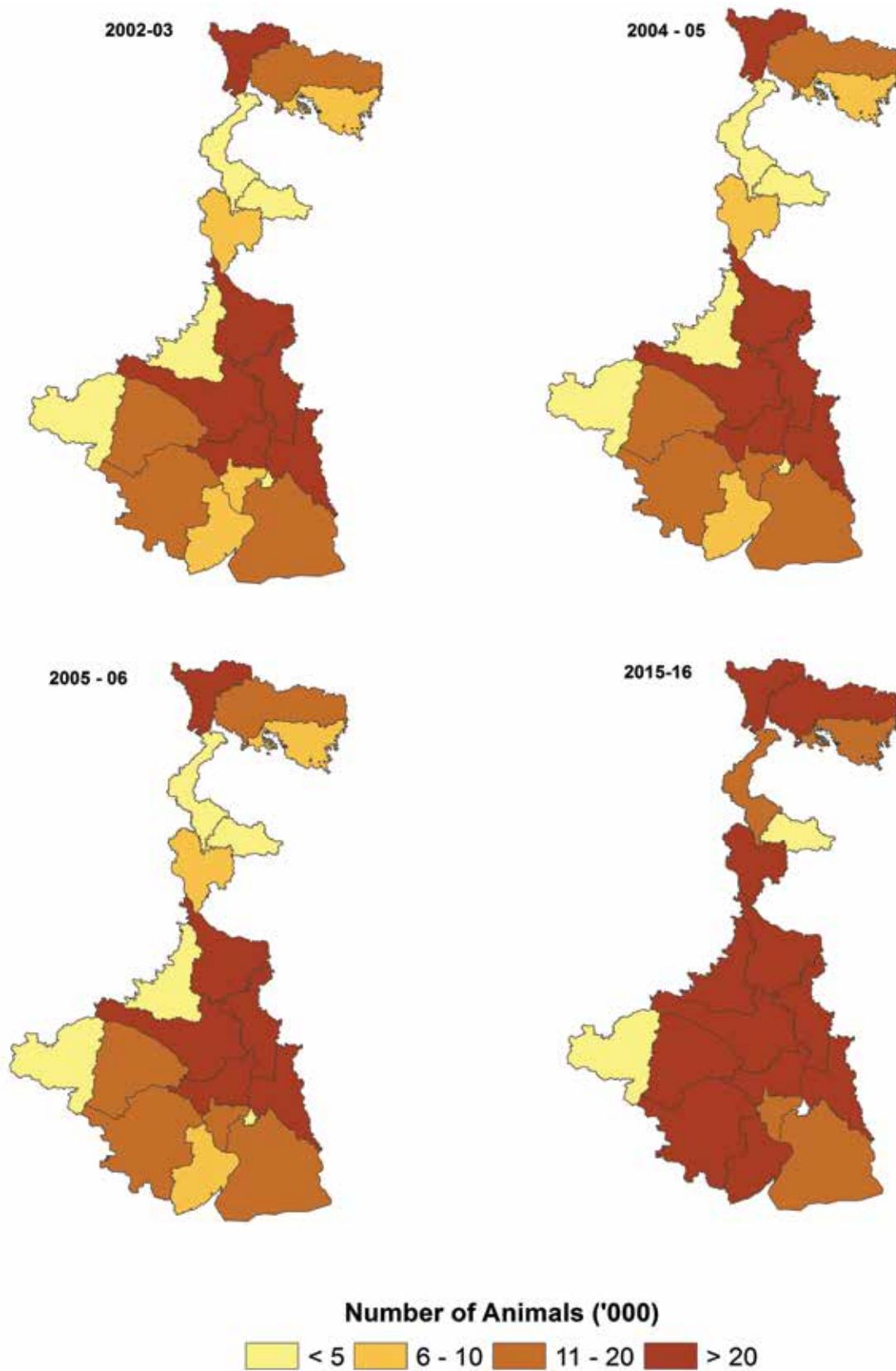
TABLE IV.3.3: Year and District-wise In-milk Crossbred Cattle Population

Districts	In-milk Crossbred Cattle Population ('000)					
	2002-03	2003-04	2004-05	2005-06	2014-15	2015-16
WEST BENGAL	465	494	524	556	1,145	768
Bankura	12	12	13	14	54	37
Bardhaman	34	36	39	41	114	78
Birbhum	3	3	4	4	33	22
Cooch Behar	9	10	10	11	25	17
Dakshin Dinajpur	2	3	3	3	8	5
Darjeeling	40	43	45	48	47	32
Hooghly	63	67	71	75	107	71
Howrah	10	11	12	12	19	13
Jalpaiguri	13	14	15	16	42	27
Kolkata	4	4	5	5	2	1
Malda	9	9	10	10	40	27
Murshidabad	34	36	38	40	166	111
Nadia	117	125	132	140	141	96
North 24 Parganas	76	81	86	91	101	68
Paschim Medinipur	15	15	16	17	145	97
Purba Medinipur	8	8	9	9	47	31
Purulia	3	3	3	3	6	4
South 24 Parganas	11	11	12	13	21	15
Uttar Dinajpur	4	4	4	4	25	16

SOURCE: Department of Animal Resources Development, Govt. of West Bengal.



District-wise In-milk Crossbred Cattle Population





IV.3. Production Performance: Animal Population

TABLE IV.3.4: Year and District-wise In-milk Buffalo Population

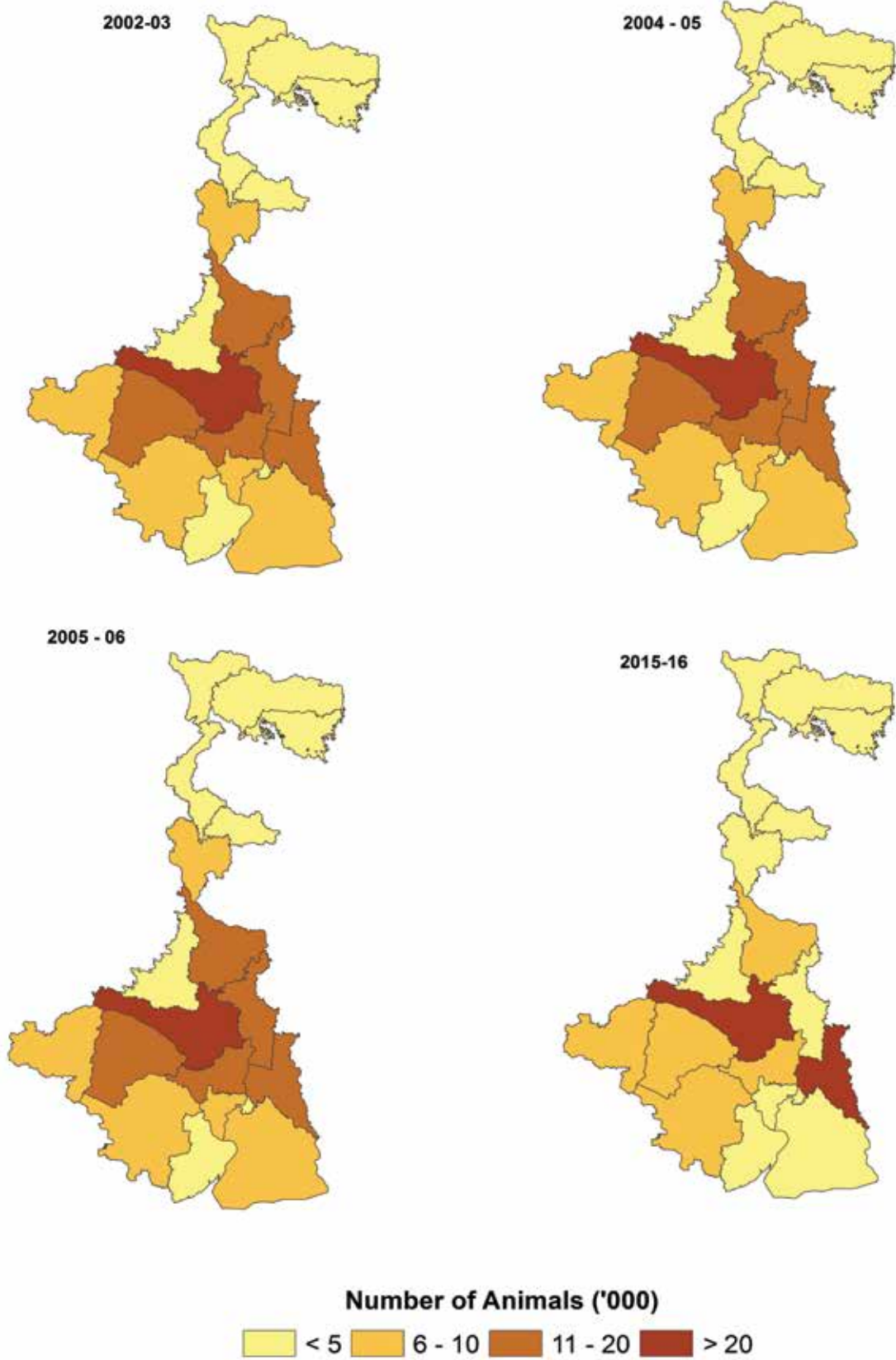
Districts	In-milk Buffalo Population ('000)					
	2002-03	2003-04	2004-05	2005-06	2014-15	2015-16
WEST BENGAL	155	155	154	154	116	121
Bankura	12	12	12	12	7	7
Bardhaman	28	28	28	28	26	27
Birbhum	4	4	4	4	5	5
Cooch Behar	2	2	2	2	0.5	1
Dakshin Dinajpur	2	2	2	2	0	0
Darjeeling	2	2	2	2	1	1
Hooghly	13	13	12	13	10	10
Howrah	7	7	7	7	3	3
Jalpaiguri	2	2	2	2	2	2
Kolkata	2	2	2	2	1	1
Malda	8	8	8	8	5	5
Murshidabad	16	16	16	16	9	10
Nadia	14	14	14	14	2	3
North 24 Parganas	18	18	18	18	25	26
Paschim Medinipur	7	7	7	7	7	8
Purba Medinipur	0	0	0	0	1	1
Purulia	9	9	9	9	6	6
South 24 Parganas	6	6	6	6	2	3
Uttar Dinajpur	3	3	3	3	3	3

Zero indicates either nil or negligible.

SOURCE: Department of Animal Resources Development, Govt. of West Bengal.



District-wise In-milk Buffalo Population





IV.4. Production Performance: Milk Availability

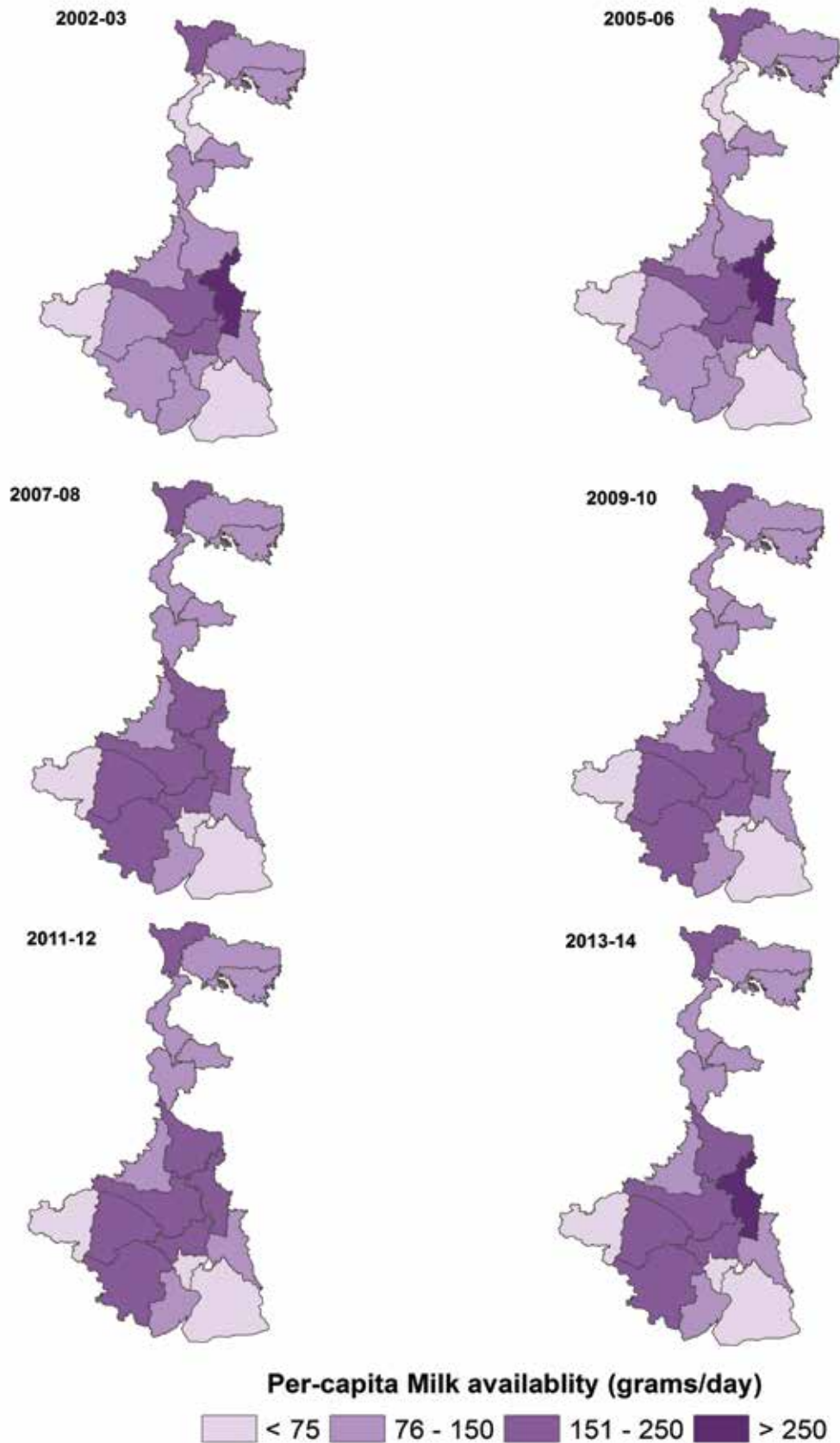
TABLE IV.4.1: Year and District-wise Per Capita Milk Availability

Districts	Per Capita Milk Availability (grams/day)											
	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
WEST BENGAL	121	122	124	125	126	128	129	131	135	139	144	143
Bankura	135	138	140	142	156	157	158	160	162	165	168	165
Bardhaman	181	179	181	181	180	186	192	200	209	219	229	233
Birbhum	86	86	86	86	100	100	99	99	100	101	101	99
Cooch Behar	133	136	137	139	130	131	131	133	136	138	141	139
Dakshin Dinajpur	93	96	98	99	119	120	121	122	124	127	129	127
Darjeeling	231	235	240	244	200	202	204	206	209	211	214	210
Hooghly	192	198	205	212	209	214	218	224	232	240	248	248
Howrah	82	82	82	82	69	69	68	68	68	69	69	67
Jalpaiguri	83	82	83	83	91	92	93	95	97	100	102	101
Kolkata	14	14	13	13	3	2	2	2	2	2	2	2
Malda	117	116	116	117	143	142	141	141	141	141	141	136
Murshidabad	116	121	126	130	198	202	206	212	219	227	235	235
Nadia	269	266	268	272	163	166	169	174	193	214	238	256
North 24 Parganas	130	132	136	138	113	114	114	116	118	120	122	120
Paschim Medinipur	101	100	101	102	152	152	152	152	153	155	156	152
Purba Medinipur	109	114	115	116	132	132	132	134	136	138	140	137
Purulia	52	51	52	52	55	55	54	54	55	55	55	54
South 24 Parganas	63	63	63	63	63	62	62	62	62	62	62	60
Uttar Dinajpur	71	69	69	68	94	92	90	88	87	86	85	81

SOURCE: Department of Animal Resources Development, Govt. of West Bengal.



District-wise Per Capita Milk Availability





IV.5. Production Performance: Milk Utilisation

TABLE IV.5.1: Milk Utilisation Pattern in Households (2009-10 to 2015-16)

(In %)

Category	Parameters	2009-10	2011-12	2013-14	2014-15	2015-16
TOTAL MILK	Consumed as fluid milk	39	38	39	38	22
	Sold as fluid milk	57	56	57	57	65
	Converted into Milk products	4	5	4	5	13

SOURCE: Department of Animal Resources Development, Govt. of West Bengal.





PART V : VETERINARY INFRASTRUCTURE AND SERVICE DELIVERY SYSTEM

The state has a well-established network of veterinary infrastructure, constituting various institutions viz., 12 District Veterinary Hospitals, 2,652 Animal Development Aid Centers (ADAC), 271 Additional Block Animal Health Centers (ABAHC), 339 Block Animal Health Centers (BAHC) and 92 State Animal Health Centers (SAHC) for providing extensive 'Health Care' facilities up to Gram Panchayat level through frequently organized Health Camps, Awareness Camps, Vaccination & Treatment Camps, Fertility Management Camps etc.

For bringing more number of breedable bovine under artificial insemination coverage, Pranibandhus, self-employed Artificial Insemination Workers have been engaged at each Gram Panchayat level keeping in view the economic viability and self-sustainability.

Moreover, the state has 3 Frozen Semen Stations at Haringhata, Salboni and Beldanga which are classified as 'A' category by the Central Monitoring Unit (CMU) of the Government of India, 3 Bull Mother Farms located at Haringhata, Kalyani and Salboni as well as 2 Frozen Embryo Transfer Laboratories at Salboni and Haringhata.





V.1. Veterinary Infrastructure - Artificial Insemination

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

Districts	State Animal Health Centre (SAHC)				District Veterinary Hospital/ Poly Clinics				Block Animal Health Centre (AHC)				Addl Block Animal Health Centre (ABAHC)			
	2006	2009	2012	2015	2006	2009	2012	2015	2006	2009	2012	2015	2006	2009	2012	2015
WEST BENGAL	91	91	91	92	19	19	19	20	341	341	341	339	271	271	271	271
Bankura	4	4	4	4	1	1	1	1	22	22	22	22	22	22	22	22
Bardhaman	10	10	10	10	1	1	1	1	31	31	31	31	20	20	20	20
Birbhum	6	6	6	6	1	1	1	1	19	19	19	19	17	17	17	17
Cooch Behar	5	5	5	5	1	1	1	1	12	12	12	12	9	9	9	9
Dakshin Dinajpur	1	1	1	1	1	1	1	1	8	8	8	8	8	8	8	8
Darjeeling	4	4	4	6	1	1	1	1	12	12	12	10	6	6	6	6
Hooghly	4	4	4	4	1	1	1	1	18	18	18	18	17	17	17	17
Howrah	2	2	2	2	1	1	1	1	14	14	14	14	11	11	11	11
Jalpaiguri	5	5	5	5	1	1	1	1	13	13	13	13	13	13	13	13
Kolkata					1	1	1	1								
Malda	3	3	3	3	1	1	1	1	15	15	15	15	15	15	15	15
Murshidabad	7	7	7	7	1	1	1	1	26	26	26	26	17	17	17	17
Nadia	8	8	8	8	1	1	1	1	17	17	17	17	16	16	16	16
North 24 Parganas	5	5	5	5	1	1	1	1	22	22	22	22	16	16	16	16
Paschim Medinipur	5	5	5	8	1	1	1	1	24	24	24	29	20	20	20	25
Purba Medinipur	7	7	7	4	1	1	1	1	30	30	30	25	16	16	16	11
Purulia	7	7	7	7	1	1	1	1	20	20	20	20	19	19	19	19
South 24 Parganas	6	6	6	6	1	1	1	1	29	29	29	29	20	20	20	20
Uttar Dinajpur	2	2	2	1	1	1	1	1	9	9	9	9	9	9	9	9

SOURCE: Bureau of Applied Economics and Statistics, Govt. of West Bengal.



V.1. Veterinary Infrastructure - Artificial Insemination

TABLE V.1.2: Year-wise AI Centres

Year	Number of AI Centres Type wise				Total
	Govt. Static Centre	Govt. Mobile Centre	Pranibandhu Mobile Centre	Co-operative & Other Units	
2002-03	2,668	-	1,214	515	4,397
2003-04	2,294	309	2,231	510	5,344
2004-05	1,753	809	2,505	567	5,634
2005-06	1,543	809	2,697	546	5,595
2006-07	1,322	809	2,776	604	5,511
2007-08	1,279	809	2,816	625	5,529
2008-09	1,272	809	2,940	681	5,702
2009-10	250	1,809	2,990	695	5,744
2010-11	240	1,706	3,097	700	5,743
2011-12	12	1,918	3,167	701	5,798
2012-13	12	1,763	3,178	760	5,713
2013-14	12	1,725	3,210	700	5,647
2014-15	0	1,726	3,114	719	5,559
2015-16	0	1,604	3,533	550	5,687

SOURCE: Paschim Banga Go-Sampad Bikash Sanstha, Govt. of West Bengal.





V.2. Service Delivery System - Artificial Insemination

TABLE V.2.1: District-wise AI Centres - Government Agencies

Districts	Number of AI Centres (2015-16)				
	Govt.	Pranibandu	Coop	Other	Total
WEST BENGAL	1,604	3,533	522	28	5,687
Bankura	118	199	25	0	342
Bardhaman	129	313	38	1	481
Birbhum	78	165	23	0	266
Cooch Behar	58	154	0	0	212
Dakshin Dinajpur	66	124	0	0	190
Darjeeling	39	15	0	0	54
Hooghly	108	263	26	4	401
Howrah	105	145	0	0	250
Jalpaiguri	62	139	10	0	211
Malda	82	184	0	0	266
Murshidabad	76	258	149	0	483
Nadia	86	238	53	0	377
North 24 Parganas	78	196	64	0	338
Paschim Medinipur	150	286	92	20	548
Purba Medinipur	92	270	0	0	362
Puruliya	95	142	20	0	257
South 24 Parganas	121	262	16	3	402
Uttar Dinajpur	61	180	6	0	247

SOURCE: Paschim Banga Go-Sampad Bikash Sanstha, Govt. of West Bengal.



V.2. Service Delivery System - Artificial Insemination

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

Districts	Number of AI Performed ('000)					
	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
WEST BENGAL	636.3	647.5	643.5	682.9	743.4	679.9
Bankura	40.0	48.3	44.0	48.4	52.6	52.3
Bardhaman	67.6	73.1	71.3	74.9	76.6	70.9
Birbhum	23.0	23.7	23.1	25.9	30.1	25.9
Cooch Behar	44.3	38.8	46.4	44.3	57.3	45.8
Dakshin Dinajpur	21.2	20.9	20.3	19.6	21.5	18.4
Darjeeling	13.6	14.5	15.9	16.0	15.6	13.6
Hooghly	47.7	48.7	46.1	47.2	57.2	49.3
Howrah	29.7	32.1	32.3	35.0	38.3	32.6
Jalpaiguri	41.1	36.8	40.8	38.8	40.8	35.1
Malda	40.4	39.7	38.2	39.6	47.4	44.0
Murshidabad	22.3	22.1	22.3	22.6	24.5	24.7
Nadia	52.4	56.5	50.9	51.8	54.1	48.7
North 24 Parganas	36.6	38.0	35.4	37.5	36.9	28.4
Paschim Medinipur	44.8	43.6	44.7	48.7	47.0	51.6
Purba Medinipur	22.3	21.0	21.2	22.1	21.5	21.2
Purulia	12.4	13.5	9.7	14.1	16.2	16.7
South 24 Parganas	24.1	25.8	26.1	30.5	33.0	32.0
Uttar Dinajpur	52.7	50.3	54.8	65.9	72.9	68.6

SOURCE: Department of Animal Resources Development, Govt. of West Bengal.



V.2. Service Delivery System - Artificial Insemination

TABLE V.2.3: Union-wise AI Performed by Cooperatives - Bovine

Districts	Number of AI Performed ('000)					
	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
WEST BENGAL	335.0	383.1	496.5	357.0	371.5	345.8
Bankura	8.5	12.2	25.3	12.7	16.6	16.6
Bardhaman	11.9	20.4	20.4	24.3	39	27.7
Birbhum	8.3	11.6	9.7	12.3	17.3	18.8
Cooch Behar	0	0	0	0	0	0
Dakshin Dinajpur	0	0	0	0	0	0
Darjeeling	0.5	0.8	0.7	0.8	1.2	1.4
Hooghly	20	24	58.5	18.9	22	20.4
Howrah	0	0	0	0	0	0
Jalpaiguri	5.8	6	6.5	7.3	19.5	7.8
Malda	0	0	0	0	0	0
Murshidabad	114.4	118	106.5	87.8	52.4	58.2
Nadia	44	47	103.8	45.5	52.3	51.5
North 24 Parganas	42.3	55.5	92	47.4	49	44.7
Paschim Medinipur	64.9	71.6	53.3	84.3	71	77.7
Purba Medinipur	0	0	0	0	0	0
Puruliya	1.6	3.2	1.7	2.6	2.8	5.5
South 24 Parganas	6.7	7	11.5	5.1	8.8	5.5
Uttar Dinajpur	6	6	6.7	8.1	19.5	10.1

SOURCE: Department of Animal Resources Development, Govt. of West Bengal.



V.2. Service Delivery System - Artificial Insemination

TABLE V.2.4: District-wise AI Performed By Pranibandhus - Bovine

Districts	Number of AI Performed ('000)					
	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
WEST BENGAL	1,804.6	2,258.8	2,401.0	2,780.9	2,703.7	3,053.3
Bankura	109.1	149.7	141.2	174.7	169.4	202.5
Bardhaman	122.9	169.7	201.3	244.2	220.2	268.6
Birbhum	82.9	109.6	118.3	148.7	141.4	160.6
Cooch Behar	71.2	78.2	101.9	109.5	121.2	140.6
Dakshin Dinajpur	26.5	33.5	41.7	54.9	60.7	66.5
Darjeeling	11.2	10.6	12.5	12.7	14.5	14.1
Hooghly	165.4	200.7	216	237	202.7	231
Howrah	37.8	50.4	55.8	66.8	51	66.9
Jalpaiguri	64.4	73.5	88.3	94.1	122.7	125.3
Malda	86.6	112.3	117.2	135.3	130.5	149.8
Murshidabad	181.1	231.8	241.4	287.9	300.3	336.6
Nadia	205.2	253.7	254.9	269.4	254.7	277.2
North 24 Parganas	122.1	153.2	141.1	149	120.4	147
Paschim Medinipur	190.9	238.6	243.6	281.9	299.3	318.9
Purba Medinipur	151.3	171.8	183.1	199.5	201.4	207.6
Puruliya	26.8	38.4	29.8	39.9	35.3	49.9
South 24 Parganas	68.8	84.6	96.5	126.5	107.5	128.5
Uttar Dinajpur	80.5	98.6	116.3	149	150.5	161.6

SOURCE: Department of Animal Resources Development, Govt. of West Bengal.



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)			
	2008-09	2009-10	2013-14	2014-15
WEST BENGAL	1,499.4	1,965.7	3,976.5	4,265.7
Bankura	57.8	86.8	411.2	397.8
Birbhum	146.4	148.6	203.9	224.1
Burdwan	141.3	105.7	205.7	361.4
Cooch Behar	72.0	66.3	75.7	145.5
Dakshin Dinajpur	102.3	87.7	159.7	135.5
Darjeeling	13.3	23.0	16.8	38.8
Hooghly	101.0	190.0	267.5	392.0
Howrah	56.2	39.2	228.3	213.5
Jalpaiguri	38.2	105.2	156.5	170.8
Kolkata				
Malda	43.6	90.9	132.3	248.7
Murshidabad	73.3	74.9	250.2	211.3
Nadia	85.4	176.7	520.2	321.5
North 24 Parganas	56.9	125.1	405.5	240.3
Paschim Medinipur	195.0	317.8	79.0	348.5
Purba Medinipur	93.2	81.5	198.1	119.2
Purulia	119.0	141.4	335.0	281.5
South 24 Parganas	76.2	57.2	249.9	331.0
Uttar Dinajpur	28.3	47.8	80.8	84.1

SOURCE: Department of Animal Resources Development, Govt. of West Bengal.



V.3. Service Delivery System - Animal Health

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

Districts	Haemorrhagic Septicaemia Vaccination ('000)					
	2008-09	2009-10	2010-11	2012-13	2013-14	2014-15
WEST BENGAL	147.7	400.0	230.2	159.5	494.9	255.2
Bankura	12.8	26.4	13.5	1.6	43.1	18.9
Birbhum	5.4	41.5	31.3		15.9	46.0
Burdwan	32.0	39.2	8.8	7.6	21.1	6.5
Cooch Behar	4.0	9.3	5.0	15.5	3.5	4.4
Dakshin Dinajpur	6.3	17.1		1.8	6.2	3.1
Darjeeling		3.3	0.3	1.2	5.0	2.7
Hooghly	10.8	25.3	14.3	19.0	54.8	12.1
Howrah	0.8	9.8	4.5	6.2	8.7	9.4
Jalpaiguri		17.6	2.5	4.4	10.9	4.0
Kolkata	0.2		0.2			
Malda	2.0	14.1	6.3	1.4	0.1	
Murshidabad	12.5	15.3	14.3	13.6	39.3	27.3
Nadia	1.0	11.2	4.5	25.3	125.2	34.4
North 24 Parganas	4.0	29.2	10.9	11.0	5.9	9.7
Paschim Medinipur	36.6	43.2	25.5	3.9	53.5	30.1
Purba Medinipur	8.5	16.3	4.3	9.0	34.9	6.7
Purulia	6.0	38.1	1.5	10.5	49.1	31.8
South 24 Parganas	2.4	25.0	1.2	25.4	17.1	7.9
Uttar Dinajpur	2.4	18.1	1.8	2.2	0.7	0.1

SOURCE: Department of Animal Resources Development, Govt. of West Bengal.



V.3. Service Delivery System - Animal Health

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

Districts	Black Quarter Vaccination ('000)						
	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
WEST BENGAL	209.5	400.0	79.9	150.9	83.4	444.9	236.4
Bankura	15.2	25.7	6.0	1.0	3.5	3.3	5.8
Birbhum	7.0	42.7	8.3	16.0		18.9	35.4
Burdwan	41.0	38.7		11.0	4.0	18.0	2.9
Cooch Behar	7.0	9.2	4.5	14.0	10.0	6.7	6.9
Dakshin Dinajpur	8.4	16.2	3.5		5.0	6.7	5.2
Darjeeling		5.5		0.3	0.2	1.9	0.4
Hooghly	14.8	27.7	7.0	23.0	8.5	23.5	11.9
Howrah	2.4	10.3	6.5	5.0	11.0	11.4	3.3
Jalpaiguri	3.4	17.2	1.5	0.7	6.7	18.4	16.9
Kolkata	0.2		0.1	0.6	0.9		
Malda	11.2	16.7	5.0	2.5		71.6	
Murshidabad	8.0	17.1	8.3	24.8	5.7	37.5	21.5
Nadia	31.5	11.8	3.8	11.0	13.0	81.7	24.3
North 24 Parganas	6.0	28.1	7.3	7.0		8.8	13.3
Paschim Medinipur	20.0	44.2	10.5	22.0		20.5	30.9
Purba Medinipur	11.0	15.7	3.3	5.5		28.3	9.4
Purulia	3.5	28.5	1.5	1.3	2.6	41.1	27.4
South 24 Parganas	5.6	25.3	1.5	5.0	10.1	43.9	20.6
Uttar Dinajpur	13.3	19.3	1.7	0.4	2.2	2.5	0.3

SOURCE: Department of Animal Resources Development, Govt. of West Bengal.



V.3. Service Delivery System - Animal Health

TABLE V.3.4: District-wise Cases Treated

Districts	Total Cases Treated ('000)					
	2000-01	2007-08	2009-10	2010-11	2013-14	2014-15
WEST BENGAL	116.8	81.6	90.4	116.7	152.1	166.9
Bankura	4.9	3.0	3.4	5.8	9.6	12.5
Bardhaman	7.2	5.1	6.7	10.1	10.1	11.0
Birbhum	9.8	5.6	6.5	7.0	7.7	9.1
Cooch Behar	3.0	2.1	2.8	2.8	4.8	3.6
Dakshin Dinajpur	4.1	1.8	1.8	3.2	4.2	4.9
Darjeeling	1.4	0.9	1.9	1.7	4.7	5.2
Hooghly	7.8	4.9	4.7	6.9	10.4	9.8
Howrah	2.3	3.2	3.8	6.8	6.8	7.2
Jalpaiguri	3.8	3.3	3.2	3.9	6.3	6.0
Kolkata	0.1	0.1	0.0	0.0	0.0	0.0
Malda	6.0	3.6	3.7	5.9	9.6	9.4
Murshidabad	14.6	6.6	6.7	7.0	11.2	11.3
Nadia	10.1	5.5	5.7	7.4	8.8	8.2
North 24 Parganas	7.8	3.4	6.3	6.8	7.2	8.4
Paschim Medinipur	7.2	9.1	8.1	10.1	15.1	16.5
Purba Medinipur	5.9	4.4	5.2	6.5	7.9	10.5
Purulia	11.3	7.4	8.2	9.4	14.2	15.8
South 24 Parganas	5.2	7.6	9.2	12.5	8.5	13.3
Uttar Dinajpur	4.6	3.4	2.7	3.0	5.3	4.4

SOURCE: Department of Animal Resources Development, Govt. of West Bengal.



PART VI : FEED RESOURCES

West Bengal is a fodder deficient state. It is partly due to non-availability of fodder land which is below all India average and lack of adequate pasture and grazing land. Most of the feed comes from agricultural residues.

While paddy straw constitutes 94 per cent of the total agricultural residue, it is also used for fuel, thatching and paper manufacturing. In order to augment nutritional value, the government is boosting addition of urea to straw and cellulosic waste.

The state is implementing Centrally Sponsored Fodder and Feed Development Scheme and a “Regional Station for Forage Production and Demonstration” is operational at Nadia. Additionally, farmers are also provided fodder mini-kits with central funding.





VI.1. Feed Resources - Availability vs. Requirement

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	2010-11	2011-12	2012-13	2013-14	2014-15	2000-01	2003-04	2007-08	2010-11	2011-12	2012-13	2013-14	2014-15
WEST BENGAL	7.5	3.6	3.6	4.0	3.4	3.4	3.5	3.5	9,117	9,661	9,752	8,832	9,353	9,459	9,618	9,690
Bankura				0.1			0.1	0.1	499	441	566	322	504	504	509	492
Bardhaman	0.3	0.2		0					789	865	832	748	772	776	797	780
Birbhum	0.2	0.3	0.3	0.4	0.7	0.7	0.7	0.7	459	517	561	421	556	539	557	556
Cooch Behar			0.1	0.1	0.1	0.1	0.1	0.1	508	484	547	512	513	515	517	534
Dakshin Dinajpur									299	308	322	313	305	303	305	308
Darjeeling									186	176	196	195	193	195	197	197
Hooghly	0.5	0.4	0.7	0.3	0.3	0.3	0.3	0.3	396	524	541	543	521	528	539	543
Howrah									165	190	163	160	157	157	155	167
Jalpaiguri									561	550	564	550	545	549	568	556
Malda									460	449	391	425	439	457	448	454
Murshidabad	0.3	2.5	1.5	2.5	1.2	1.2	1.2	1.2	755	972	976	867	892	915	923	947
Nadia	0.2	0.1	1	0.7	1.1	1.1	1.1	1.1	722	820	698	672	712	719	713	718
North 24 Parganas	6			0.1					514	482	520	453	464	460	470	483
Paschim Medinipur									774	914	939	878	913	956	996	1,009
Purba Medinipur									665	515	522	563	519	514	501	543
Purulia	0								325	357	385	218	336	356	376	351
South 24 Parganas									539	563	531	514	540	530	547	555
Uttar Dinajpur									501	533	497	480	471	484	499	496

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



VI.1. Feed Resources - Availability vs. Requirement

TABLE VI.1.2: 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
Bankura	Available	1,386.0	1,491.9	1,766.2	1,615.6	1,615.6	1,590.3	1,603.0
	Requirement	3,254.1	3,264.6	3,600.8	3,684.7	3,784.2	3,901.2	4,037.9
	Balance	-1,868.0	-1,772.7	-1,834.7	-2,069.1	-2,168.6	-2,310.9	-2,434.9
Bardhaman	Available	2,961.5	2,935.9	2,987.0	2,854.3	2,854.3	3,072.1	2,963.2
	Requirement	4,118.5	4,302.7	4,514.4	4,633.2	4,798.1	5,017.5	5,302.0
	Balance	-1,157.0	-1,366.9	-1,527.3	-1,778.9	-1,943.8	-1,945.4	-2,338.8
Birbhum	Available	1,893.8	1,843.2	1,944.4	1,975.9	1,975.9	1,646.7	1,811.3
	Requirement	2,329.1	2,479.4	2,607.4	2,658.8	2,729.2	2,821.9	2,941.0
	Balance	-435.3	-636.2	-662.9	-682.9	-753.3	-1,175.2	-1,129.7
Dakshin Dinajpur	Available	769.0	775.9	762.1	838.1	838.1	796.2	817.2
	Requirement	1,059.7	1,121.8	1,228.4	1,271.2	1,322.0	1,381.7	1,451.6
	Balance	-290.7	-345.9	-466.3	-433.1	-483.8	-585.5	-634.4
Darjeeling	Available	328.2	329.0	329.4	371.6	371.6	373.8	372.7
	Requirement	677.1	669.3	767.9	810.7	860.0	916.0	979.2
	Balance	-348.9	-340.3	-438.6	-439.1	-488.4	-542.3	-606.5
Howrah	Available	445.4	466.0	424.7	377.9	377.9	403.4	390.7
	Requirement	1,086.9	1,117.0	856.7	834.1	817.7	806.8	801.2
	Balance	-641.5	-651.0	-432.0	-456.2	-439.8	-403.4	-410.5
Hooghly	Available	1,335.0	1,281.8	1,388.1	1,459.0	1,459.0	1,425.4	1,442.2
	Requirement	2,634.0	2,753.0	2,514.9	2,524.3	2,553.5	2,603.0	2,673.9
	Balance	1,299.0	-1,471.2	-1,126.8	-1,065.4	-1,094.6	-1,177.6	-1,231.7
Jalpaiguri	Available	797.2	961.3	983.9	967.8	967.8	1,010.1	989.0
	Requirement	1,812.3	2,115.0	2,302.1	2,366.4	2,444.9	2,539.5	2,653.0
	Balance	-1,015.1	-1,153.8	-1,318.2	-1,398.5	-1,477.0	-1,529.4	-1,664.0
Cooch Behar	Available	946.1	934.6	957.6	1,063.5	1,063.5	1,187.8	1,126.0
	Requirement	2,318.8	2,182.1	2,230.2	2,272.0	2,327.6	2,398.5	2,486.4
	Balance	-1,253.9	-1,247.5	-1,272.6	-1,208.4	-1,264.1	-1,210.7	-1,360.4
Kolkata	Available	96.4	100.5	73.6	70.4	64.3	60.2	53.4
	Requirement	80.7	70.6	38.0	37.7	38.4	40.2	39.2
	Balance	15.7	29.9	35.6	32.7	25.9	20.0	14.2



Districts	Available/ Required/ Balance	Dry Matter Availability, Requirement and Balance ('000 MT)						
		1997	2003	2007	2008	2009	2010	2011
Malda	Available	1,406.8	1,225.1	1,111.4	1,327.8	1,327.8	1,288.9	1,308.4
	Requirement	1,919.7	1,649.6	1,818.9	1,850.2	1,884.5	1,922.1	1,963.1
	Balance	-512.9	-424.5	-707.5	-522.3	-556.7	-633.2	-654.7
Murshidabad	Available	2,235.6	2,216.7	2,254.4	2,321.5	2,321.5	2,274.2	2,298.0
	Requirement	2,700.2	3,242.1	3,625.1	3,547.0	3,485.8	3,439.5	3,406.6
	Balance	-464.6	-1,025.3	-1,370.7	-1,225.4	-1,164.2	-1,165.2	-1,108.6
Nadia	Available		1,958.5	1,506.1	1,627.9	1,627.9	1,465.8	1,546.9
	Requirement		2,926.0	2,299.1	2,293.3	2,320.8	2,381.3	2,476.1
	Balance		-967.5	-792.9	-665.4	-692.9	-915.5	-929.2
North 24 Parganas	Available	1,232.2	1,248.9	1,215.4	1,238.8	1,238.8	1,152.0	1,195.4
	Requirement	2,961.9	3,286.0	2,714.9	2,733.6	2,799.1	2,912.3	3,075.4
	Balance	-1,729.7	-2,037.1	-1,499.5	-1,494.8	-1,560.3	-1,760.3	-1,880.0
Paschim Medinipur	Available		2,680.2	2,937.2	3,018.4	3,018.4	2,877.5	2,948.0
	Requirement		4,597.5	5,212.3	5,357.1	5,535.8	5,753.5	6,016.8
	Balance		-1,917.3	-2,275.1	-2,338.7	-2,517.4	-2,875.9	-3,068.8
Purba Medinipur	Available		1,047.4	1,661.3	1,445.3	1,445.3	1,645.6	1,545.5
	Requirement		3,245.2	3,085.7	3,184.5	3,312.5	3,468.9	3,655.2
	Balance		-2,197.7	-1,424.4	-1,739.2	-1,867.2	-1,823.3	-2,109.7
Purulia	Available	1,066.4	914.9	1,231.0	1,229.5	1,229.5	1,061.6	1,145.6
	Requirement	2,279.2	2,338.7	2,287.9	2,293.0	2,304.2	2,321.4	2,344.6
	Balance	-1,212.8	-1,423.8	-1,056.9	-1,063.5	-1,074.6	-1,259.7	-1,199.0
South 24 Parganas	Available		1,646.4	1,617.2	1,623.8	1,623.8	1,486.5	1,555.2
	Requirement		3,142.4	2,352.5	2,298.0	2,265.7	2,252.8	2,257.2
	Balance		-1,496.0	-735.4	-674.2	-641.9	-766.3	-702.0
Uttar Dinajpur	Available		1,118.3	1,279.0	1,606.3	1,606.3	1,608.8	1,607.6
	Requirement		1,805.2	1,797.9	1,801.8	1,808.4	1,817.3	1,828.6
	Balance		-686.8	-518.9	-195.6	-202.1	-208.5	-221.0

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



VI.1. Feed Resources - Availability vs. Requirement

TABLE VI.1.3: Availability, Requirement and Surplus/Deficit of Dry Matter

Year	Dry Matter ('000 MT)		
	Availability	Requirement	Surplus/Deficit
1997	17,049	40,462	-23,414
2003	27,519	46,308	-18,789
2007	29,344	45,855	-16,511
2008	30,025	46,437	-16,413
2009	30,025	47,347	-17,323
2010	28,165	48,627	-20,462
2011	26,719	50,327	-23,608

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





PART VII : AGRICULTURE

West Bengal is fortunate to have adequate natural resources - rich alluvial soil, sufficient rainfall and ample supply of agricultural workforce helping the state to achieve sufficiency in food production. With 6 agro-climatic zones coupled with a variety of soil and climatic conditions, West Bengal ensures a varied crop basket.

Agriculture is the major occupation in the state and is characterized by a predominance of small and marginal farmers. The principal crops of West Bengal are Rice, Jute and Potato. The state's share in the total rice production of the country was 15.3 per cent and that of total foodgrain was about 7 per cent during 2014-15. Almost 77 per cent of the country's environment friendly golden fibre, i.e., jute is produced by the state. The time series data corroborates that the area under potato cultivation as well as the yield rate has experienced a substantial increase over the years between 1990-91 and 2014-15. Potato production in the state was almost 29 per cent of that in the country. Besides lying on Gangetic plain, 59 per cent of net cropped area in the state is irrigated.

Tea is important cash crop. High quality tea is also produced commercially in northern districts of the state – particularly in Darjeeling, famous the world over for its acclaimed flavorful teas.

It is worthwhile to note that on account of recharging of groundwater sources by harvesting the rain, there are no saline or over-exploited blocks in the state.





VII.1. Agro-climatic Zones

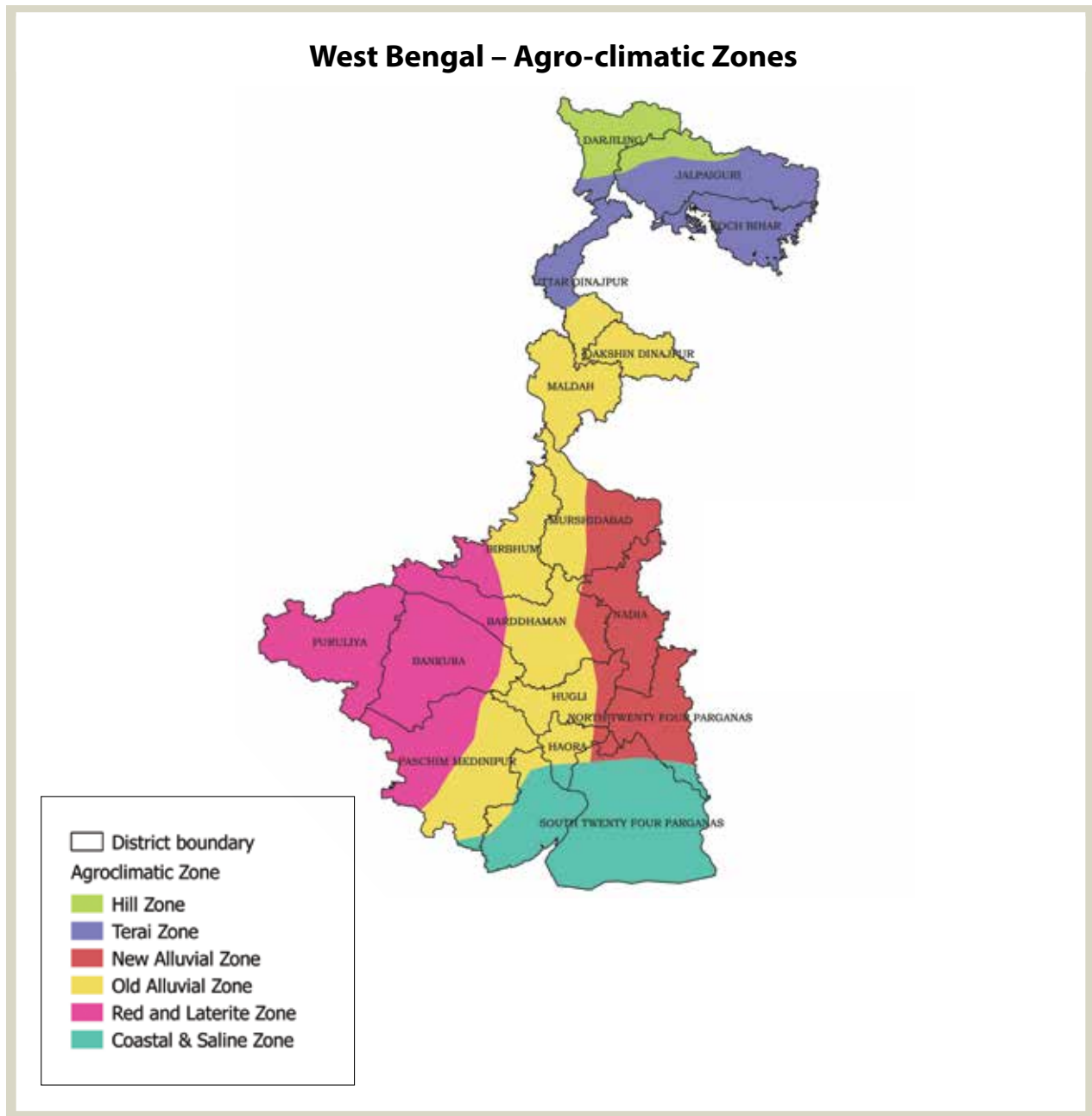


TABLE VII.1.1: West Bengal’s Agro-climatic Zones

Northern Hill Zone	Teesta-Tarai Alluvial Zone	Gangetic Alluvial Zone
Vindhyan Alluvial Zone	Coastal Saline Zone	Red & Laterite Zone

SOURCE: Department of Agriculture, Govt. of West Bengal.



VII.1. Agro-climatic Zones

TABLE VII.1.2: Details of Agro-climatic Zones

Name of Zone	Northern Hill Zone	Teesta-Tarai Zone	Gangetic Alluvial Zone	Vindhyan Alluvial Zone	Coastal Saline Zone	Red & Laterite Zone
Total area (Ha)	368,642	1,145,443	2,084,540	1,771,472	1,319,466	1,997,887
Cultivable Area (Ha)	167,054	657,754	1,739,644	760,781	874,438	
Rainfall (mm)	2,500-3,500	2,000-3,000	1,350-1,650	1,500-2,000	1,600-1,800	1,100-1,400
Soil Type	Brown Forest & Tarai Soil	Tarai Soil	Ganga Alluvial	Vindhyan Alluvial	Coastal Saline	Red Soil
Major Crops	Rice, Potato, Vegetables	Rice, Vegetables, Potato	Rice, Potato, Wheat, Oilseeds, Jute	Rice, Pulses, Jute, Potato, wheat, oilseeds	Rice, Pulses, oilseeds	Rice

SOURCE: Department of Agriculture, Govt. of West Bengal.







VII.2. Land Use Pattern

TABLE VII.2.1: District-wise Land Use Pattern

(‘000 ha)

Districts	Reporting Area		Forest Area		Permanent Pastures and Grazing Land		Fallow Land		Net sown area	
	2000-01	2014-15	2000-01	2014-15	2000-01	2014-15	2000-01	2014-15	2000-01	2014-15
WEST BENGAL	8,687.7	8,684.1	1,190.4	1,173.7	4.3	2.4	387.2	350.2	5,417.3	5,238.4
Bankura	688.1	688.0	148.4	148.9	0.7	0.5	64.5	34.0	344.1	337.3
Bardhaman	698.5	698.8	28.8	21.2	0.2	0.0	15.1	3.3	477.5	455.4
Birbhum	451.1	451.1	16.0	15.9	0.7	0.1	9.1	3.9	337.5	327.3
Cooch Behar	331.4	331.6	3.2	4.3	0.0	0.0	5.8	0.8	264.9	254.5
Dakshin Dinajpur	221.9	221.9	0.9	0.9	0.0		1.5	0.1	190.5	187.4
Darjeeling	325.5	325.5	124.6	124.6	1.2	0.5	12.8	17.8	136.9	135.7
Hooghly	312.2	313.4	0.7	0.5	0.0	0.0	1.3	0.9	230.5	212.0
Howrah	136.0	138.7			0.1	0.0	5.6	3.6	87.0	83.0
Jalpaiguri	622.7	622.7	179.0	179.0	0.0		3.5	8.7	336.5	336.7
Malda	371.1	370.9	1.7	1.7	0.0		58.5	50.2	222.2	234.3
Murshidabad	532.5	532.5	0.8	0.8	0.1	0.0	20.7	0.9	393.0	397.0
Nadia	390.7	390.7	1.2	1.2	0.1	0.0	8.6	3.0	298.5	293.9
North 24 Parganas	380.3	386.5			0.0		14.4	22.3	259.9	232.1
South 24 Parganas	966.2	948.7	426.3	426.3	0.0	0.1	19.3	11.0	378.3	361.9
Paschim Medinipur	833.1	928.6	169.6	171.9	0.8	0.4	18.0	69.8	497.2	517.0
Purba Medinipur	490.7	396.6	1.2	0.9	0.1	0.0	3.4	0.8	377.1	288.5
Purulia	623.3	625.6	87.6	75.0	0.2	0.7	120.6	119.0	311.7	308.8
Uttar Dinajpur	312.5	312.5	0.6	0.6	0.1		4.8	0.3	273.4	275.7

SOURCE: : State Statistical Handbook, Bureau of Applied Economics and Statistics, Department of Statistics and Programme Implementation, Govt. of West Bengal.



VII.3. Area and Production

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

Districts	Cereals															
	Area ('000 ha)								Production ('000 MT)							
	1990-91	2000-01	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	1990-91	2000-01	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
WEST BENGAL	6,182	5,918	6,061	5,365	5,860	5,903	6,003	6,027	11,077	13,596	15,591	14,634	15,856	16,320	16,941	17,532
Bankura	446	406	382	201	380	380	381	360	865	1,016	1,016	515	1,127	1,041	1,053	995
Bardhaman	563	589	675	564	596	596	607	587	1,426	1,587	2,056	1,669	1,757	1,929	2,023	1,905
Birbhum	392	346	392	282	420	405	419	419	839	875	1,051	836	1,213	1,176	1,374	1,359
Cooch Behar	323	318	298	296	294	303	305	310	427	568	649	731	679	774	869	864
Dakshin Dinajpur		221	203	203	196	194	194	196		493	501	601	511	554	564	570
Darjeeling	104	62	62	62	59	61	62	62	121	113	133	136	123	120	129	125
Hooghly	276	201	301	293	278	274	286	277	612	507	863	906	808	794	808	861
Howrah	133	114	114	116	107	111	109	118	233	226	191	305	226	287	275	321
Jalpaiguri	291	290	256	255	256	259	260	262	272	437	496	577	547	565	606	638
Malda	315	278	271	259	263	274	261	266	595	659	765	797	775	812	881	873
Murshidabad	451	362	479	405	452	457	462	480	965	924	1,344	1,165	1,251	1,279	1,433	1,529
Nadia	332	290	280	277	295	278	287	292	780	799	769	756	875	814	892	945
North 24 Parganas	296	288	243	231	229	225	227	235	666	675	680	627	618	670	691	709
Paschim Medinipur	1,032	595	682	622	661	698	723	733	1,540	1,377	1,772	1,732	1,786	1,894	1,760	2,025
Purba Medinipur		529	441	450	400	403	389	430		1,242	1,039	1,230	1,012	1,062	878	1,145
Purulia	303	280	275	161	279	297	311	288	390	509	611	277	746	746	746	619
South 24 Parganas	419	429	386	375	392	382	398	398	511	873	810	864	911	915	1,001	1,031
Uttar Dinajpur	506	322	323	313	303	308	322	317	836	717	846	912	892	888	960	1,023

SOURCE: Various issues of State Statistical Handbook and Statistical Abstract, Bureau of Applied Economics and Statistics, Department of Statistics and Programme Implementation, Govt. of West Bengal.



VII.3. Area and Production

TABLE VII.3.2: District-wise Area and Production - Pulses

Districts	Pulses															
	Area ('000 ha)								Production ('000 MT)							
	1990-91	2000-01	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	1990-91	2000-01	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
WEST BENGAL	314	275	182	197	199	218	233	249	193	220	151	177	177	202	215	231
Bankura	3	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0
Bardhaman	3	5	2	3	3	3	3	3	1	6	2	3	3	3	3	3
Birbhum	9	20	16	17	16	17	17	16	5	17	14	17	16	19	20	21
Cooch Behar	9	11	6	6	6	7	5	6	6	7	4	4	4	4	3	4
Dakshin Dinajpur		4	1	1	1	1	1	1		3	0	0	0	1	1	1
Darjeeling	1	2	1	1	1	1	2	2	1	1	1	1	1	1	1	1
Hooghly	1	2	1	0	0	0	0	1	1	1	0	0	0	0	1	1
Howrah	5	0	1	1	1	2	2	2	2	0	0	1	1	2	2	2
Jalpaiguri	5	7	5	4	4	5	5	5	3	4	2	3	3	3	3	4
Malda	59	36	21	17	19	21	22	23	39	30	24	16	18	23	22	20
Murshidabad	53	59	38	51	40	45	52	54	30	56	37	46	39	43	54	55
Nadia	74	57	36	46	53	56	55	60	50	44	32	45	49	53	51	55
North 24 Parganas	16	13	10	8	10	12	13	13	9	10	10	7	9	10	11	12
Paschim Medinipur	22	12	6	6	4	4	5	5	19	9	4	4	3	4	5	5
Purba Medinipur		9	9	7	7	7	8	9		11	1	9	9	12	12	15
Purulia	21	19	13	10	10	11	15	14	14	7	4	3	4	4	4	5
South 24 Parganas	12	9	14	16	19	23	24	31	3	7	10	15	16	19	20	24
Uttar Dinajpur	23	9	5	5	3	4	5	4	11	5	4	3	1	3	4	4

Zero indicates either nil or negligible.

SOURCE: Various issues of State Statistical Handbook and Statistical Abstract, Bureau of Applied Economics and Statistics, Department of Statistics and Programme Implementation, Govt. of West Bengal.





VII.3. Area and Production

TABLE VII.3.3: District-wise Area and Production - Food Grains

Districts	Food Grains															
	Area ('000 ha)								Production ('000 MT)							
	1990-91	2000-01	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	1990-91	2000-01	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
WEST BENGAL	6,496	6,193	6,243	5,562	6,059	6,121	6,237	6,276	11,270	13,815	15,742	14,811	16,033	16,522	17,157	17,763
Bankura	449	407	382	202	380	380	382	360	867	1,017	1,016	515	1,127	1,041	1,053	995
Bardhaman	566	595	676	568	599	599	609	590	1,428	1,593	2,058	1,672	1,760	1,932	2,026	1,908
Birbhum	401	366	408	299	437	421	436	435	844	892	1,065	854	1,229	1,195	1,394	1,380
Cooch Behar	332	328	304	301	300	309	311	316	432	575	653	735	683	778	872	868
Dakshin Dinajpur		225	204	204	196	195	196	197		495	502	601	511	555	565	570
Darjeeling	105	64	63	63	61	62	64	64	121	115	133	137	123	121	130	126
Hooghly	277	202	301	293	278	274	287	277	613	508	863	906	808	794	809	862
Howrah	138	115	115	117	109	113	111	120	235	227	192	306	227	289	278	323
Jalpaiguri	296	297	260	260	260	263	265	267	275	442	498	579	550	568	610	642
Malda	374	314	291	275	283	295	283	289	633	689	789	813	793	835	902	893
Murshidabad	504	421	517	455	493	502	514	534	995	980	1,381	1,211	1,290	1,322	1,486	1,584
Nadia	405	347	316	323	348	334	342	352	830	844	801	800	925	868	943	1,000
North 24 Parganas	312	300	253	239	238	237	240	248	674	685	690	634	628	679	702	721
Paschim Medinipur	1,054	606	688	628	666	702	728	738	1,559	1,385	1,776	1,736	1,789	1,898	1,764	2,030
Purba Medinipur		538	450	457	407	410	398	439		1,253	1,040	1,240	1,021	1,074	890	1,160
Purulia	324	299	288	171	289	308	326	302	404	516	616	279	750	750	750	624
South 24 Parganas	431	438	401	391	411	405	422	429	514	880	821	878	926	934	1,021	1,055
Uttar Dinajpur	529	331	328	317	305	311	327	321	847	721	850	915	894	891	963	1,026

SOURCE: Various issues of State Statistical Handbook and Statistical Abstract, Bureau of Applied Economics and Statistics, Department of Statistics and Programme Implementation, Govt. of West Bengal.



VII.3. Area and Production

TABLE VII.3.4: District-wise Area and Production - Oilseeds

Districts	Oilseeds															
	Area ('000 ha)								Production ('000 MT)							
	1990-91	2000-01	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	1990-91	2000-01	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
WEST BENGAL	513	599	682	671	679	728	745	761	453	571	727	703	711	821	840	858
Bankura	38	28	37	27	31	32	31	40	34	21	25	21	26	30	25	29
Bardhaman	65	56	46	40	36	36	41	42	54	58	42	38	35	42	43	42
Birbhum	50	37	38	38	38	37	39	40	39	42	38	33	33	33	39	33
Cooch Behar	10	13	12	15	15	15	15	16	5	8	6	8	8	7	11	9
Dakshin Dinajpur		23	22	22	22	25	25	26		21	18	22	20	29	27	27
Darjeeling	2	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0
Hooghly	34	34	50	53	51	56	60	69	34	32	51	59	60	71	74	83
Howrah	4	5	8	7	9	8	8	10	2	4	11	9	15	18	19	17
Jalpaiguri	12	12	16	20	18	18	17	16	8	8	10	19	16	18	17	16
Malda	29	36	33	31	33	34	36	36	22	38	39	32	37	36	39	42
Murshidabad	56	71	99	107	98	106	107	110	60	72	128	113	97	109	115	125
Nadia	59	109	92	100	102	124	114	111	64	100	105	108	105	152	142	139
North 24 Parganas	35	49	51	46	51	57	60	60	35	46	66	63	55	78	87	81
Paschim Medinipur	52	48	91	22	86	94	104	104	45	53	94	95	79	96	104	94
Purba Medinipur		25	22	87	27	19	19	20		30	30	30	79	39	39	55
Purulia	8	3	3	3	3	3	5	4	6	2	2	2	2	2	5	3
South 24 Parganas	4	6	16	10	13	13	12	14	5	4	19	13	11	17	16	17
Uttar Dinajpur	55	45	46	45	45	50	53	50	50	32	43	37	35	43	40	46

SOURCE: Various issues of State Statistical Handbook and Statistical Abstract, Bureau of Applied Economics and Statistics, Department of Statistics and Programme Implementation, Govt. of West Bengal.



VII.4. Land Holding and Water Resources

TABLE VII.4.1: Operational Holdings in West Bengal

Size of Holding (ha)	Total Holdings		Average Size of Holding (ha)
	Number ('000)	Area ('000 ha)	
Marginal (<1 ha)	5,853	2,891	0.5
Small (1-2 ha)	980	1,557	1.6
Semi-medium (2-4 ha)	267	730	2.7
Medium (4-10 ha)	23	110	4.8
Large (> 10 ha)	0.7	222	317.1
All Classes	7,123	5,509	0.8

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

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

('000 ha)

Particulars	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Net Irrigated Area	3,182	3,135	3,136	3,136	3,135	3,112	2,955	3,078	3,082	3,099
Gross Irrigated Area	5,339	5,501	5,581	5,669	5,651	5,525	5,269	5,502	5,568	5,661
Net Sown Area	5,374	5,295	5,296	5,296	5,294	5,256	4,981	5,198	5,205	5,234
Gross Sown Area	9,523	9,533	9,635	9,752	9,802	9,530	8,832	9,353	9,459	9,618

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





VII.4. Land Holding and Water Resources

TABLE VII.4.3: Major River Basins of West Bengal

Name of the River	Origin	Length (km)	Catchment Area (sq km)	States Falling in the Catchment Area
Ganga	Gangotri (Uttar Kashi)	2,525 +	861,452 +	Uttaranchal, Uttar Pradesh, Himachal Pradesh, Haryana, Rajasthan, Madhya Pradesh, Bihar, West Bengal and Delhi UT.
Brahmaputra	Kailash Range (Tibet)	916 +	194,413 +	Arunachal Pradesh, Assam, Meghalaya, Nagaland, Sikkim, West Bengal, Mizoram and Tripura

SOURCE: Hydrology and Water Resources Information System for India, National Institute of Hydrology, Roorkee (http://www.nihroorkee.gov.in/rbis/india_information/states_basins.htm)





VII.5. Rainfall

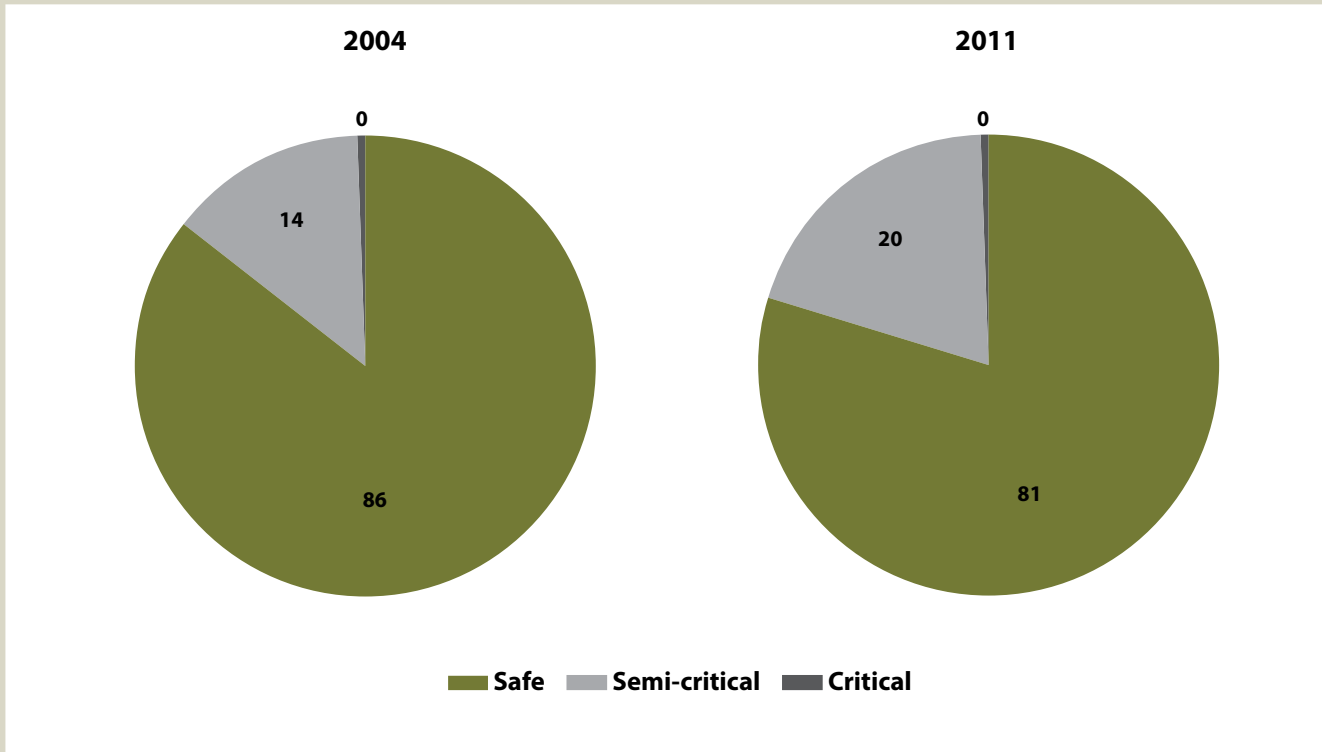
TABLE VII.5.1: District- wise Average Annual Rainfall

Districts	Average Annual Rainfall (mm)					
	2010	2011	2012	2013	2014	2015
WEST BENGAL	1,577	1,794	1,537	1,853	1,503	1,817
Bankura	917	1,740	1,269	1,809	1,030	1,255
Birbhum	985	1,482	976	1,319	1,131	1,627
Bardhaman	856	1,322	1,030	1,216	1,044	1,647
Cooch Behar	3,673	2,669	3,354	2,431	2,552	2,866
Dakshin Dinajpur	1,683	1,479	1,244	1,428	1,328	1,541
Darjeeling	4,018	3,415	2,845	3,254	3,187	3,332
Hooghly	1,044	1,556	1,152	1,494	1,189	1,660
Howrah	1,219	1,502	1,138	2,179	1,190	1,710
Jalpaiguri	3,882	3,146	3,787	3,506	3,048	3,554
Kolkata	1,536	1,583	1,656	2,355	1,381	1,783
Malda	1,129	1,440	955	1,265	1,292	1,373
Murshidabad	989	1,526	1,001	1,143	1,126	1,600
Nadia	940	1,488	1,039	1,245	1,128	1,677
North 24 Parganas	1,180	1,669	1,208	1,658	1,321	1,693
Paschim Medinipur	1,055	1,656	1,222	1,977	1,120	1,430
Purba Medinipur	1,244	1,538	1,342	2,078	1,729	1,525
Purulia	798	1,557	1,396	1,560	1,024	1,154
South 24 Parganas	1,227	1,535	1,420	1,701	1,413	1,857
Uttar Dinajpur	1,588	1,785	1,163	1,580	1,328	1,241

SOURCE: Agricultural Meteorologist, Directorate of Agriculture, Govt. of West Bengal.

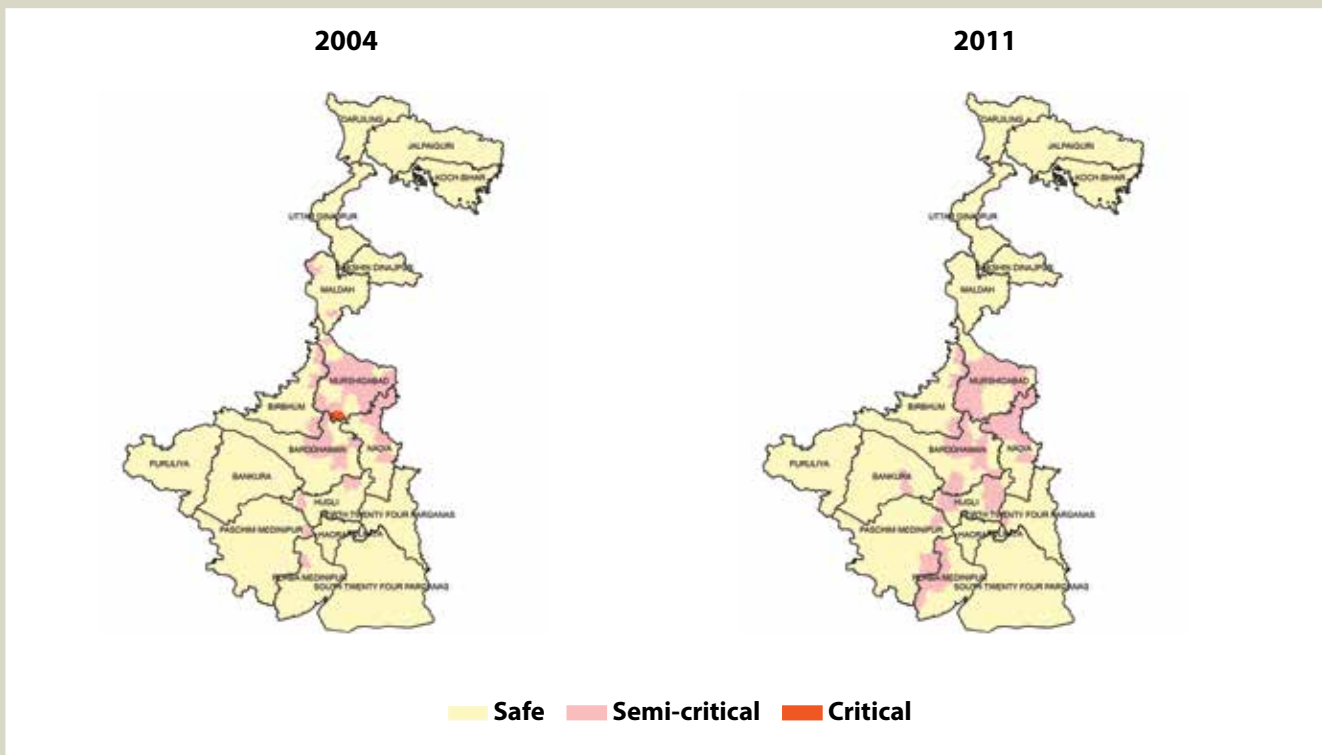


Groundwater Status in West Bengal (% of Blocks)



SOURCE: Dynamic Ground Water Resources of India (2004-2011), Central Ground Water Board, Ministry of Water Resources, River Development & Ganga Rejuvenation, Govt. of India.

Groundwater Status in West Bengal





VII.5. Rainfall

TABLE VII.5.2: Distribution of blocks according to ground water status

Districts	Number of Blocks under								
	Semi-critical			Critical			Over-exploited		
	2004	2009	2011	2004	2009	2011	2004	2009	2011
WEST BENGAL	37	38	53	1	0	1	0	0	0
Bankura	0	0	1	0	0	0	0	0	0
Birbhum	4	4	4	0	0	0	0	0	0
Burdwan	6	6	9	0	0	0	0	0	0
Cooch Behar	0	0	0	0	0	0	0	0	0
Dakshin Dinajpur	0	0	0	0	0	0	0	0	0
Darjeeling	0	0	0	0	0	0	0	0	0
Hooghly	2	2	6	0	0	1	0	0	0
Howrah	0	0	0	0	0	0	0	0	0
Jalpaiguri	0	0	0	0	0	0	0	0	0
Malda	2	2	0	0	0	0	0	0	0
Paschim Medinipur	1	0	3	0	0	0	0	0	0
Murshidabad	15	17	14	1	0	0	0	0	0
Nadia	6	6	8	0	0	0	0	0	0
North 24 Parganas	0	0	1	0	0	0	0	0	0
Purba Medinipur	1	1	7	0	0	0	0	0	0
Purulia	0	0	0	0	0	0	0	0	0
South 24 Parganas	0	0	0	0	0	0	0	0	0
Uttar Dinajpur	0	0	0	0	0	0	0	0	0

SOURCE: Dynamic Ground Water Resources of India (2004-2011), Central Ground Water Board, Ministry of Water Resources, River Development & Ganga Rejuvenation, Govt. of India.

PART VIII : POLICIES AND SCHEMES FOR DAIRY DEVELOPMENT IN WEST BENGAL

In West Bengal, the Animal Resources Development Department is responsible for the formulation and implementation of Livestock and Poultry policies and programmes of the state. The following participatory branches including a university under this department are looking after the successful implementation of all the projects and schemes of the Department:

1. **Directorate of Animal Resources & Animal Health (DAR&AH):** is playing pivotal role for the control of animal diseases, scientific management and upgradation of genetic resources of livestock and poultry birds, increase in availability of nutritious feed and fodder, extension of activities on animal husbandry practices and also enhancement of production and profitability of livestock enterprises.





2. **Directorate of Dairy Development:** It is engaged in the processing of raw milk to produce pasteurised and homogenised market milk and various milk products, which in turn, are sold through its own network.
3. **Paschim Banga Go-Sampad Bikash Sanstha (PBG SBS):** It is registered society created to act as catalyst for qualitative, quantitative and genetic improvement of bovine population in this State.
4. **West Bengal University of Animal and Fishery Sciences (WBUAFS):** It imparts quality education, undertakes basic and need-based research and disseminates proven technologies to the rural masses.
5. **West Bengal Cooperative Milk Producers' Federation Ltd. (WBCMPF):** The WBCMPFL was registered in the year 1983 in order to eliminate middlemen and organise institutions to be owned and managed by the milk producers themselves. The basic objective was to provide assured and remunerative market for the milk produced by the farmer members.
6. **West Bengal Dairy & Poultry Development Corporation Limited (DAIRPOUL):** It is a government enterprise created in 1969 to supply high quality compounded feed for livestock under "Epic" brand name.
7. **West Bengal Livestock Development Board:** It focuses on meat and meat product marketing.
8. **Mother Dairy:** It oversees milk processing and supply to Greater Kolkata and other areas.
9. **West Bengal Veterinary Council:** The council is sincerely discharging the statutory functions like regulation of veterinary practice, Registration & Renewal of Veterinary Practitioners, monitoring the professional conduct, etiquette and code of ethics of registered veterinarians and organization of workshops and seminars to promote professional knowledge.
10. **The Calcutta Society for the Prevention of Cruelty to Animals (CSPCA):** The CSPCA, a charitable organization formed in the year 1861 with an objective to give relief to the helpless animals, especially the stray dogs. The society provides treatment and health care to the animals free of cost. It is a non-profitable organization surviving purely on Government aid and donations.

The main programmes and schemes for dairy development in West Bengal can be classified into two categories viz.

- I. Central Schemes;
- II. State Schemes;



ANIMAL HUSBANDRY & DAIRY DEVELOPMENT

I. CENTRAL SCHEMES FOR ANIMAL HUSBANDRY DEVELOPMENT (BUDGET HEAD 2403 – AH)

1	National Programme for Bovine Breeding (NPBB)	<p>NPBB sponsored by Government of India is implemented in West Bengal through BGSBSP. The Sanstha has more than 3,000 Pranibandhu working at Gram Panchayat level for delivery of breeding inputs at the farmer's doorstep. These workers perform Artificial Insemination (AI), vaccination of animals and provide primary health care. Funds are also used for improvement in quality of bulls used for natural service and artificial insemination, imposing strict quality control of services and inputs, consolidation and initiation of programme for development and conservation of recognized indigenous breed so as to improve the genetic makeup as well as their availability.</p> <p>The chief objective of the Program is to arrange quality AI services at Farmers' door step and to bring all breedable females under organized breeding through AI or Natural service using germplasm of High Genetic Merit. It also aims to conserve, develop and proliferate selected Indigenous Bovine breed of High Socio economic importance.</p>
2	Rashtriya Krishi Vikas Yojana (RKVY)	<p>During the year 2016-17, the total outlay under RKVY for the state was to the tune of ₹ 62.24 crore to ensure a comprehensive development in agriculture and allied sectors. The ARD Department has implemented the following projects/ schemes under RKVY during the year 2016-17.</p> <ol style="list-style-type: none"> i. Extension of Animal Health Care Services in remote areas of West Bengal through the Mobile Veterinary Clinic (MVC); ii. Livelihood improvement of poor and tribal people through livestock based enterprises in selected villages of Jhargram Block ; iii. Prani-Shakti – Tablet PC & Web-enabled Animal Resources Extension & Information Management System; iv. Purchase of new Freeze Drier Machine at IAH&VB, Belgachia; v. Setting up of the Mineral Mixture Plant by WBCMPFL; vi. Optimization of productive efficiency through organization of Animal Health Camps (Parasitic Control & Fertility Improvement) vii. Modernization and Strengthening of Bull Mother Farm, Haringhata; viii. Certificate Course on Artificial Insemination (Pranisebee); ix. Establishment of FSBS at Pedong, Darjeeling.
3	Rural Infrastructure Development Fund (RIDF)	<p>Under RIDF, the following activities were undertaken by the State during 2016-17:</p> <ol style="list-style-type: none"> i) Strengthening and modernising treatment & diagnostic facilities at Block Level ii) Modernization of Haringhata Dairy iii) Upgradation of Infrastructure Facilities of Sperm Station at Beldanga, Murshidabad iv) Establishment of Murrah Buffalo Bull Mother Farm at Turkidanga, Bishnupur, Bankura
4	Professional Efficiency Development	<p>Through this Programme, the West Bengal Veterinary Council has trained 320 (three hundred twenty) nos. of Veterinarians and provided advance knowledge in the field of Veterinary & Animal Sciences during 2016-17. The Central Government provides 50 per cent assistance for setting up and functioning of Veterinary Council.</p>





5	National Dairy Plan-I	Under NDP-I, the mandate is to strengthen the Frozen Semen Stations located at Haringhata & Salboni and increase its production by two fold. Moreover, under Bull Production Programme through imported Embryo the Project, production of pure Jersey & Holstein bulls were aimed through advanced Embryo Transfer technology.
6	Assistance to States for Control of Animal Diseases (ASCAD)	This scheme aims to control livestock diseases through conducting mass vaccination and diagnosis of diseases in the newly established DDLs to reduce the morbidity & mortality of animals. It is implemented in the state from the year 2004-05 with 75 per cent central share and 25 per cent state share
7	Establishment and Strengthening of Veterinary Hospital and Dispensaries (ESVHD)”	The West Bengal, DAIRPOUL is entrusted the responsibility of implementing of Centrally Sponsored ESVHD scheme. The corporation has renovated as well as constructed Veterinary Hospitals and Dispensaries.
8	National Animal Disease Reporting System (NADRS)	DAR&AH is implementing NADRS in West Bengal. NADRS involves computerized linking 333 block, District and the State headquarters in the State with the central project monitoring unit New Delhi to record and monitor livestock disease situation.
10	National Livestock Mission (NLM)	Under NLM, four different components were covered during 2016-17 with a total outlay of ₹ 11 85.84 lakh
	a. Risk Management and Insurance of Milch Animals	The scheme, being implemented by PGSBS, aims towards risk Management and Insurance of 143,000 nos. of Milch Animals. With 16 per cent of premium payment, the beneficiary can insure his dairy animal and Centre & State Governments bear 40 per cent and 44 per cent of premium cost respectively.
	b. Modernization and Development of Breeding Infrastructure	It proposes development of Kotulpur Fodder Farm into a Model State- of- the-Art Farm. This is being implemented by the Directorate of AR&AH, GoWB on funding pattern of 60 per cent Central & 40 per cent State share.
	c. Fodder Seed Production, Procurement & Distribution	The objective is Fodder Seed Production, Procurement & Distribution. Target is to supply of 14,000 Minikit. This is being implemented by the Directorate of AR&AH, GoWB (Funding pattern of 60:40 as CS:SS)
12	Integrated Sample Survey (ISS)	As per the guidelines of Gol, the Department of ARD regularly conduct field survey work to generate season-wise and annual estimates (district-wise & for the state) of production of milk and other other livestock products and by-products. For this purpose, 50 per cent central assistance is provided to the State.
13	Livestock Census	In addition to ISS, the Department of ARD conducts Quinquennial Livestock Census every five years to capture total livestock population, male & female bovines, milch & in-milk population.

II. STATE SCHEMES FOR ANIMAL HUSBANDRY

1	Cattle & Buffalo Development	The Scheme aims to augment milk production in the State through the following: i. Breed up-gradation / crossbreeding of low milk producing local Cattle & Buffalo through artificial insemination ii. Frozen Semen Straws production of elite bulls of Gir, Sahiwal, Jersey & Murrah (buffalo) breed iii. Infrastructure development, which are not included under NDP & NPBB iv. Maintenance and updation of e-PBGSBS Management System, a bovine Breeding management System.
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2	Establishment of Fodder Development Plot	This program aims to develop Fodder Demonstration Plot in 10 (ten) cottahs of land in farmers' field to encourage livestock farmers in production of Green Fodder
3	Enrichment of dry fodder	It aims to enrich the straw/ cellulosic waste by addition of urea for enhancing the nutritional value
4	Fodder Seed production through JV initiative	It aims to enhance the production of Certified Fodders Seeds in Government Fodder Farms, Kishan Vikas Kendra & Agriculture Universities

III. CENTRAL SCHEMES FOR DAIRY DEVELOPMENT

1	National Dairy Plan-I	In order to increase productivity of milch animals and to provide a greater access to the organised milk-processing sector to rural milk producers, NDP-I is being implement in West Bengal. The scheme provides 100 per cent grant-in-aid for animal nutrition & breeding activities, 25 per cent grant-in-aid for capital expenditure on new semen station and 50 per cent grant on cost of capital items for village milk procurement system.
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IV. STATE SCHEMES FOR DAIRY DEVELOPMENT

1	Development of Milk Co-operatives	<p>A) Developments of Milk Co-operative Societies by extending special financial assistance to meet up milk production cost to the dairy cooperative farmers through the Dist. Milk Unions.</p> <p>B) Improvement of the quality of milk and enhancement of milk yield, providing of Milk Scanner and Special Feed Additives to the members of the Milk Coop Societies to maintain quality milk supply chain and to save the milk farmers from the clutches of unscrupulous traders and to deliver good quality processed milk to the urban consumers.</p>
2	Creation of Capital Assets (Infrastructure Development)	Setting up of infrastructure for Value Added Products, expansion of basic Civil Infrastructure for installing Dairy Machineries. Keeping these factors in view, extension of Civil Infrastructure in the Dairy Plants of the Milk Unions and installation of Dairy Equipment.
3	Women Empowerment in Milk Cooperatives	Assistance towards construction of Society Building, Furniture, AMCU(s), Milk Cans for Women Dairy Cooperative Societies and Milk Pails, Cattle Insurance, Chaff Cutter, Cattle Shed for Individual Women Farmers. Involvement of rural women in restructuring of their socio-economic status and promoting of rural women empowerment as a Govt. policy.
4	Incentive for Cattle Feed Subsidy to the Milk Cooperative Farmers	Incentive for providing balanced Cattle Feed to the Milk Cooperative farmers for their cattle to maintain the health and enhancement of milk yield.
5	Fodder Development Programme	<p>A) Azolla Cultivation among the Marginal Farmers having almost no land for Fodder cultivation opted for Production Unit as an alternative source of Green Fodder. Production of raw milk after Azolla feeding increases and more milk price earned which can be considered to be profitable to the farmers as Low Cost Technology with trouble free cultivation.</p> <p>B) Fodder Seed - Due to high price rise of concentrates, farmers are now finding difficulty in maintaining cattle. Encouraging farmers in taking Green Fodder for better nutrition of cattle and thus enhancement of milk yield, steady conception and good growth by providing Green Fodder as Feed would help to minimize the cost of Milk production and execution of the same among the Dairy Cooperative Farmers through the Dist. Milk Union</p>





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.
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	: Number of females to 1,000 males in a population.
Small Ruminants	: Sum of sheep and goats.
Urbanisation	: Per cent of urban population to total population.
Wet to Dry Ratio	: Number of in-milk to dry animals.



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