

CHAPTER 10

AGRICULTURE & RURAL DEVELOPMENT

1. Rapid urbanization and the growth of trade and industry have significantly reduced the contribution of agriculture sector in Delhi's economy. The share of agriculture and allied activities in the Gross State Domestic Product at current prices in Delhi has declined sharply from 1.40% in 1999-2000 to 0.81% in 2006-07.

LAND HOLDING PATTERN

2. As per latest Agricultural Census, 2000-01, the NCT of Delhi has a total of 28315 agricultural holdings. This includes 14309 individual holdings, 13025 joint holdings and 981 institutional holdings.
3. The total area operated by all social groups in Delhi declined by 9.37% from 47,587 hectares during 1995-1996 to 43126 hectares during 2000-01. During the same period, the area operated by marginal and small holding declined by 7.27% and area operated by semi-medium, medium and large holdings declined by 4.51%, 4.96% and 15.70% respectively. The number of holdings in all the categories has also indicated a decline. The comparative statistics on number of operational holdings and area of operated holding corroborate the trend of urbanization of Delhi and consequent conversion of agricultural land to non-agricultural uses are given in statement 10.1.

Statement – 10.1

NUMBER AND AREA OF OPERATIONAL HOLDINGS-ALL SOCIAL GROUPS

Sl. No.	Size Groups	No. of Operational Holdings				Area Operated (in ha)			
		Individual	Joint	Institutional	Total	Individual	Joint	Institutional	Total
1.	Marginal Below 1.0 ha	10128 (63.61)	5416 (34.01)	378 (2.38)	15922 (100)	3793 (56.56)	2709 (40.40)	204 (3.04)	6706 (100)
2.	Small 1.0-2.0 ha	2509 (41.63)	3037 (50.39)	481 (7.98)	6027 (100)	3399 (40.76)	4357 (52.25)	583 (6.99)	8339 (100)
3.	Semi Medium 2.0- 4.0 ha	1149 (29.72)	2628 (67.98)	89 (2.30)	3866 (100)	3194 (28.90)	7605 (68.82)	251 (2.28)	11050 (100)
4.	Medium 4.0- 10.00 ha	499 (22.41)	1699 (76.33)	28 (1.26)	2226 (100)	2760 (21.48)	9924 (77.24)	164 (1.28)	12848 (100)

Sl. No.	Size Groups	No. of Operational Holdings				Area Operated (in ha)			
		Individual	Joint	Institutional	Total	Individual	Joint	Institutional	Total
	10.00 ha	(22.41)	(76.33)	(1.26)	(100)	(21.48)	(77.24)	(1.28)	(100)
5.	Large 10.00 ha & Above	24 (8.76)	245 (89.42)	5 (1.82)	274 (100)	286 (6.84)	3750 (89.65)	147 (3.51)	4183 (100)
6.	All sizes	14309 (50.53)	13025 (46.00)	981 (3.47)	28315 (100)	13432 (31.15)	28345 (65.72)	1349 (3.13)	43126 (100)

Note: **Figures within brackets indicate percentage distribution.**

Source: **Last Agriculture Census 2000-01**

LAND UTILIZATION

4. The total area of Delhi is 1, 47,488 hectares. As per village records, the total cropped area was 41,508 hectares (28.14%) in 2003-2004, 36,948 hectares (25.05%) in 2004-05, 33,063 (22.42%) hectares in 2005-06 and 32,941 (22.33%) hectares in 2006-07. The remainder was being used either for non-agricultural purposes or remained as forest, fallow land, uncultivable land, etc. The land-use pattern in Delhi for the period from 2000-01 to 2006-07 (Table 10.1), reveals that the total cropped area has decreased from 52,817 hectares in 2000-01 to 32,941 hectares in 2006-07. In percentage terms, the total cropped area, which was 35.81% of the total available area in 2000-01, dropped to 22.33% in 2006-07 (Table 10.1). The pace of urbanization has increased significantly in the 1990s, resulting in rapid decline in agriculture's share both in GDP and employment.

CROP INTENSITY

5. Crop intensity is an index of agricultural development and is directly related to irrigation facilities. The following statement shows that crop intensity in Delhi ranged from a minimum of 121% in 1996-97 to a maximum of 166% during 2001-02 (statement 10.2). During 2005-06, the crop intensity was 161%.

Statement 10.2

[In hectares]

Year	Net Area Sown	Gross Cropped Area	Cropping
1994-95	47,409	68,613	145
1995-96	45,356	62,966	139
1996-97	40,575	48,917	121
1997-98	41,701	57,079	137
1998-99	41,495	60,231	145
1999-2000	41,386	60,886	147
2000-01	34,034	52,816	155

Year	Net Area Sown	Gross Cropped Area	Cropping
2001-02	29,116	48,445	166
2002-03	29,477	43,391	147
2003-04	26,971	41,509	154
2004-05	24,214	36,957	134
2005-06	23,809	36,041	161

Source: Delhi Statistical Hand Book 2007

CROPPING PATTERN

6. The main crops grown in Delhi are wheat, jawar, bajra and paddy. The cropping pattern in terms of production and yield per hectare for the period 2002-03 to 2007-08 is given in Table 10.2 which shows that both in terms of production and average yield, wheat was the predominant crop in Delhi throughout the period of six years, followed by paddy, bajra and Jawar. Wheat production constituted 51.62% of total grain production in Delhi in 2006-07. The yield of different crops has fluctuated significantly during these six year periods.
7. The farmers of Delhi are being encouraged to shift from traditional agriculture to high value commercial agriculture. The Agriculture /Horticulture Unit of Development Department are encouraging farmers to take up vegetables, floriculture production, Mushroom cultivation etc. About 5479 hectares of area has been brought under Floriculture during 2004-05, 5518 hectares of area during 2005-06 and about 6644 hectares of area during 2006-07.
8. Government has also taken up steps to strengthening the state grading laboratory to take up grading of fruits and vegetables and fetch remunerative prices of farmers produce. The laboratory has been certified by the National Accreditation Board for certification body under ISO 9001:2000.

IRRIGATED AREA

9. The three main sources of irrigation in Delhi are canals, wells, and tube wells including treated water from sewage treatment plants. The area irrigated by each source for the period from 1998-99 to 2006-07 is shown in Table 10.3. In 2006-07, 90.6% of the net irrigated area was irrigated by wells/tube wells.
10. During 2006-07, of the total cropped area of 32941 hectares, the net area irrigated was 24094 hectares, area irrigated more than once was 10050 hectares and the gross area irrigated was 34144 hectares, which constitutes 103.65% of the total cropped area. The details are given in the statement 10.3

Statement 10.3
IRRIGATED AREA

[Area in Hectares]

Item	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08 Estimated
Total cropped area	48,445	43,391	41,508	36,958	33,063	32,941	32,440
Net area Irrigated	28,912	25,409	22,670	22,493	24,230	24,094	23,325
Area irrigated More than once	10,495	6,323	7,438	5,660	9,967	10,050	9,725
Gross area Irrigated	39,407	31,732	30,108	28,153	34,137	34,144	33,050

Source: Delhi Statistical Handbook-2004 & Development Department

11. Although canals and tube wells are the two main sources of irrigation in Delhi, rainfall is the original source of water for canals and tube wells. In Delhi, rainfall is concentrated in the months from July to September. Details are given in the following statement: -

Statement 10.4
RAINFALL

Month	Normal Rainfall	[in mm]					
		2001	2002	2003	2004	2005	2006
July	192.3	129.7	7.2	632.2	13.8	193.9	313.3
August	192.4	233.1	115.2	156.2	274.7	132.0	98.0
September	139.6	47.4	202.6	100.2	03.0	231.6	129.6

Note: Normal rainfall refers to norms of the Metrological Deptt

Source: Delhi Statistical Handbook

ANIMAL HUSBANDRY

12. Animal husbandry is an important component of the agriculture sector. According to the last Livestock Census of 2003, the total livestock population (excluding poultry) in Delhi was 3.42 lakh. The growth rate of selected categories of animals between 1997 and 2003 is indicated in the following statement:

Statement 10.5

LIVESTOCK CENSUS DATA

Livestock	Number (Census 1997)	Number (Census 2003)	Percentage Growth
Cows / buffaloes	2,98,714	3,22,141	+ 7.84
Sheep / Goats	36,032	20,156	- 44.06
Others	33,375	32,481	-2.68
Total	3,68,121	3,74,778	+ 1.81

Source: Development Deptt.

13. The main livestock products are milk, eggs and meat. Production estimates of these three products for the period between 2000-01 to 2006-2007 are presented in Table 10.4. Milk production has increased from 292.00 thousand tones in 2000-01 to 303.44 thousand tones in 2004-05 registering a growth of 4.94% during the period of five years. In further period it was declined. The total production of eggs has fallen by 57.09% from 41.52 million in 2000-01 to 26.43 million in 2004-05. Meat production has decreased by 12.13% from 33175 tonnes in 2000-01 to 29148 tonnes in 2001-02 and increased to 33072 tonnes in 2006-07. i.e. a growth of 11.86% during the period of six years.
14. The number of veterinary hospitals and dispensaries in Delhi is 47 and 27 respectively. The number of animals that received treatment from the hospitals/ dispensaries increased from 3,63,555 in 2000-01 to 4, 70,879 in 2006-07 (Table 10.5).

FISHERIES

15. The objective of the Fisheries Unit is to regulate fishing under the Punjab Fisheries Act, 1914 and the Indian Fisheries Act, 1857, and prevent destructive practices and unscrupulous fishing. The Fisheries Unit performs the dual function of producing fish-seed as well as providing fish for consumption. Information about the production of fish-seed and fish in the seven years is presented in statement 10.6. Due to various reasons the fishing activity is getting diminished.

Statement 10.6

PRODUCTION OF FISH AND FISH SEED

Item	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07
Fish-Seed Production (in lakhs)	35	32	23.3	20.00	17.2	13.50	12.00
Fish Production (thousand tones)	4.0	3.2	2.3	2.1	1.4	0.8	0.7

Source: Development Deptt.

FORESTS

16. The total forest & tree cover of Delhi, which was 151 sq. km in 2001, has increased to 283 sq. km as per report of Forest Survey of India for the year 2005. The Green cover has increased from 10.2% to 19.08% of the total Geographical area of NCT of Delhi in 2005. The forest and tree cover of Delhi since 1993 is given in statement 10.6:

Statement 10.6

FOREST & TREE COVER OF DELHI

Forest & Tree Cover of Delhi	Forest & Tree Cover (Sq. Km)	Percentage of Geographical Area
1993	22	1.48
1995	26	1.75
1997	26	1.75
1999	88	5.93
2001	151	10.2
2003	268	18.07
2005	283	19.08

District Wise Forest Cover in Delhi

[Area in Km²]

District	Geographic Area	Forest Cover	% of Geographic Area
Central Delhi	24.68	05.20	21.07
East Delhi	63.76	02.94	04.61
New Delhi	34.90	14.54	41.66
North Delhi	59.16	04.70	07.94
North East Delhi	60.29	02.70	04.48
North West Delhi	440.31	15.47	03.51
South Delhi	249.85	40.61	09.66
South-West Delhi	420.54	78.95	31.60
West Delhi	129.52	05.06	03.91
Total	1483.00	170.17	11.46

A. ASOLA-BHATTI WILD LIFE SANCTUARY

Asola-Bhatti Wildlife Sanctuary is in South Delhi district all along Delhi-Haryana boundary of District Faridabad & Gurgaon. The sanctuary is spread over an area of 6874 acres of land comprising of 4707 acres of Asola notified during 1986 and 2167 acres of Bhatti notified during 1991. The entire Sanctuary is a part of the northern terminal of Aravali hills and biogeographically represented oldest mountain system of the world. About 23 Check dams have been constructed at Asola Wild Life Sanctuary for storing rain water. These check dams have proved to be very effective for ground water recharge and creation of water bodies for the substances of Wild Life in the Sanctuary.

Conservation Education Centre at Asola

The Forest Department has established a conservation education centre at Asola Bhatti Wild Life Sanctuary in collaboration with Bombay Natural History Society (BNHS) for imparting education in nature and wild life conservation to students, teachers and other people. In the year 2005, 8000 students, in the year 2006, 5445 students and in the year 2007, 1716 students visited the centre and were made aware of the nature & its conservation.

Reclamation of Bhatti area of Asola Bhatti Wild Life Sanctuary through ECO Task Force (ETF)

The Forest Department is implementing the project of Rehabilitation of 2100 acres of Bhatti Mines area since October 2000, which is a part of Asola Bhatti Wild Life Sanctuary. Project period was for 5 years at the cost of Rs. 8.23 crore, has been extended for a further period of 3 years upto 31.3.2007 with an additional cost of Rs. 4.93 crore. Upto 2006-07, 7.99 lakh saplings have been planted covering an area of 2500 acres. Year wise details of area and plantation raised are as follows:

Year	Area (in acre)	Plantation Raised (No.)
2001-02	300	58,800
2002-03	600	92,600
2003-04	400	1,50,000
2004-05	400	1,28,000
2005-06	400	1,30,000
2006-07	400	1,40,000
Total	2500	7,99,400

During the year 2006-07, 6.79 lakhs saplings were distributed to the public and for the year 2007-08, a target of 5.00 lakh sapling for free distribution has been fixed the Forest Department. For further improvement in Greening Delhi, Action Plan 2007-08 has been prepared under which annual targets for various greening agencies viz Forest Department, MCD, NDMC, CPWD, DDA, PWD and Army etc. are fixed. Achievements during last 7 years are given in statement 10.7 below:-

Statement 10.7

[Figures in lakhs]

Year	Target	Plantation including free distribution of saplings	Plantation by Forest Department
2000-01	9.30	9.38	3.35
2001-02	9.00	9.10	3.39
2002-03	9.85	9.16	2.69
2003-04	10.50	11.44	3.27
2004-05	12.54	13.30	3.01
2005-06	15.66	16.34	3.53
2006-07	17.11	18.58	3.50

B. Development and Management of the Ridge area

The Delhi Ridge, an extension of the Aravali Mountains acts as the green lung of the city. About 7784 ha. of the Ridge area have been notified as a Reserve Forest. The Ridge is divided in five portions as per details given below.

Sl. No.	Name of Ridge	Managing Agency	(Area in ha)
1.	Northern Ridge	DDA, MCD & Forest Deptt.	87 ha
2.	Central Ridge	Forest Deptt, DDA, Army, MCD, CPWD, NDMC	864 ha
3.	South Central Ridge (Near Mahrauli)	DDA	626 ha
4.	Nanakpura South Central	DDA	7 ha
5.	Southern Ridge	Forest, DDA, Sports Authority of India	6200 ha
	Total		7784 ha

(C) Development of City Forests

There are following 14 City Forests all over Delhi.

S.No.	Name of City Forests	Area in ha.	District
1	Nasirpur City Forest	28	South-West
2	Alipur City Forest	16.80	North
3	Hauzrani City Forest	28.80	South
4	Mitraon City Forest	40.00	South-West
5	Sultanpur City Forest	48	North-West
6	Ghumenhera City Forest	32	South-West
7	Ghoga City Forest	10.40	East
8	Shahapur Garhi City Forest	8.00	North-East
9	Mamurpur City Forest	56	North-East
10	Jindpur City Forest	47.60	North-East
11	Mukhmelpur City Forest	53	North-East
12	Bawana City Forest	32	North-West
13	Garhi Mandu City Forest	300	East
14	Anand Vihar City Forest	32	East

Creation of City Forests

Keeping the objective of having more green/tree cover in Delhi and resultant benefit on environment, Forest department proposes to raise nine more City Forests at following sites:-

S.No.	Name of Village	Area in hectare	District
1	Issapur	66.25	South-West
2	Rewla Khanpur	22.85	South-West
3	Kharkhari Jatmal	50.00	South-West
4	Sultanpur Dabas	24.76	North-West
5	Auchandi	00.50	North-West
6	Mungeshpur	13.50	North-West
7	Qutab Garh	27.77	North-West
8	Hindon Cut Ghazipur	05.00	East
9	Harewali	24.80	North-West

RURAL DEVELOPMENT

17. In 2001, the rural area in Delhi was 37.50% (556.17 sq. kms.) of the total geographical area of 1,483 sq. kms. Of the total population of 138.51 lakhs, 6.82% (9.45 lakh people) were living in the rural areas according to the 2001 Census. Over a period of time, the extension of the urban area has converted rural villages to urbanized villages. The number of rural villages has decreased from 304 in 1951 to 165 in 2001 Census. Details of the total population of Delhi, rural population and number of villages over the period of 50 years from 1951 to 2001 are given in Table 10.7. The share of rural population declined from 18% in 1951 to 10% in 1991 and further decreased in 2001 Census to 6.82%.
18. The distribution of the rural population by industry for the period 1971-2001 is presented in Table 10.8. Out of the total rural population of 9,44,727 in 2001, the total workforce in rural areas was 3,01,064 (31.87%). There was a steep increase in the rural workforce between 1981 and 2001, from 1,28,853 in 1981 to 3,01,064 in 2001.

DELHI RURAL DEVELOPMENT BOARD

19. The Delhi Rural Development Board (DRDB) was re constituted in 2004 with an aim to formulate a unified Area Plan for rural areas of Delhi & to monitor projects/schemes being implemented by various departments./agencies i.e. MCD, I&FC Department. and DSIIDC for development of rural areas. Function of the Board is to advise the Government on issues connected with the infrastructural Development of rural villages and for securing the planned growth of rural areas of Delhi (excluding the area of Trans Yamuna which is governed by the Trans Yamuna Board) and to recommend prioritize the schemes included in the Annual Plan.

20. During the Annual Plan 2006-07, an amount of Rs. 49.41 crore was incurred for the works under IDRV, Rs.10.00 crore released to MCD for Rural Road works & Rs.20.00 crore released to MCD for development of Rural Villages schemes on the recommendation of Rural Development Board Development and Rs.17.20 crore incurred by the Panchayat Department for development of Chaupals, Panchayat Ghars and protection of Gram Sabha lands. In the year 2007-08 all alone, 1045 project proposals amounting to Rs. 427.00 crore have been sanctioned. In the rural areas, 78 Multi Purpose Community Centres were constructed some time ago. However, because of various reasons including high ground rent and locational disadvantages many of the Multi Purpose Community Centres remained vacant or partly used. As such Government has decided to offer these Multi Purpose Community Centres to NGOs/Civil Society for running various socio economic activities for the benefit of local people and also for the community at large.

Conservation and Recharge of Water Bodies

21. Considering the importance of conservation and recharge of water level alongwith improvement in environmental condition in the rural areas, a major work has been taken up in the form of development and protection of water bodies in Delhi.

As per records available, there are 629 water bodies, out of which 476 are with Development Department of Govt. of Delhi and 118 water bodies are with Delhi Development Authority (DDA). The balance 35 water bodies are with various departments/organizations. Out of 476 water bodies with Development Department, a study has pointed out that 105 water bodies can not be revived. Thus only 371 water bodies are left with Development Department for revival. The major numbers of water bodies are in South -West and North- West Districts.

The Rural Development Department has assigned the task of revival of water bodies to Irrigation & Flood Control Department (I&FC) and Delhi State Industrial Infrastructure Development Corporation (DSIIDC). Under the revival scheme, a package of works are being taken up. The works are- deepening and development of water bodies which includes renewal of blockage and trapping of silt on the way. Additionally, construction of boundary walls and pathways all around the water bodies are also being taken up. Besides, plantation has also been added as essential item of work so that there is enough greening around the water bodies. A data system is also being developed for studying the impact of this work of revival of water bodies.

Another work of environmental and sanitation improvement being taken up in rural areas is to provide sewage system. In this regard Delhi Jal Board has carried out a topographical survey in 189 villages. Infrastructural Development Plan of 189 villages has been prepared wherein after grouping the villages it has been identified that oxidation ponds at 37 places covering 66 villages and Mini Sewerage Treatment Plants (STP) at 19 places covering 49 villages are possible out of 189 rural villages. The balance 74 villages would be provided sewerage system by connecting to existing sewerage. It is hoped that these works would bring a substantial improvement in the rural sanitation and resultant environmental upgradation.