

CHAPTER – 10

AGRICULTURE & RURAL DEVELOPMENT

Contribution of agriculture sector has been reduced in NCT of Delhi due to rapid urbanisation and the growth of trade and industry sector in Delhi. Further very fast growth of services sector is making agriculture and rural economic activities less attractive. As a result, the contribution of agriculture and allied activities in the Gross State Value Added (GSVA) at current prices in Delhi has increased from 0.71% in 2015-16 to 0.75% in 2016-17. As per census of 2011 rural population in Delhi was 4.19 Lakhs (2.50% of the total population of 167.88 lakh). Around 25% of the total area of NCT, as per 2011 census, was in rural and the remaining 75% in urban. The number of rural villages in Delhi reduced from 214 in 1981 to 112 in 2011. Agriculture being a state subject, the primary responsibility for increasing agricultural production and productivity, exploiting untapped potential and enhancing income of the farming community rest with state government.

2. Land Holding Pattern

- 2.1 As economy is moving along-with rapid urbanization, the agriculture holdings in Delhi is also reducing at a speedy rate. This is evident as per the Agricultural Census. The information regarding the agricultural land holding pattern and area operated for agricultural purposes in Delhi, during the last two agricultural censuses is presented in Statement 10.1.

Statement 10.1

LAND HOLDINGS & OPERATIONAL AREA IN DELHI: 2005-06 & 2010-11

S. No.	Details	Agricultural Census 2005-06	Agricultural Census 2010-11
1.	Operational Holdings (Number)		
	a. Individual	11741 (46.39)	8195 (39.98)
	b. Joint	12624 (49.87)	11358 (55.41)
	c. Institutional	946 (3.74)	944 (4.61)
	Total	25311 (100.00)	20497 (100.00)
2.	Operational Area (in Hectares)		
	a. Individual	10590.95 (28.04)	7087.95 (23.92)
	b. Joint	25977.85 (68.78)	21341.82 (72.03)
	c. Institutional	1201.49 (3.18)	1198.44 (4.05)
	Total	37770.29 (100.00)	29628.21 (100.00)

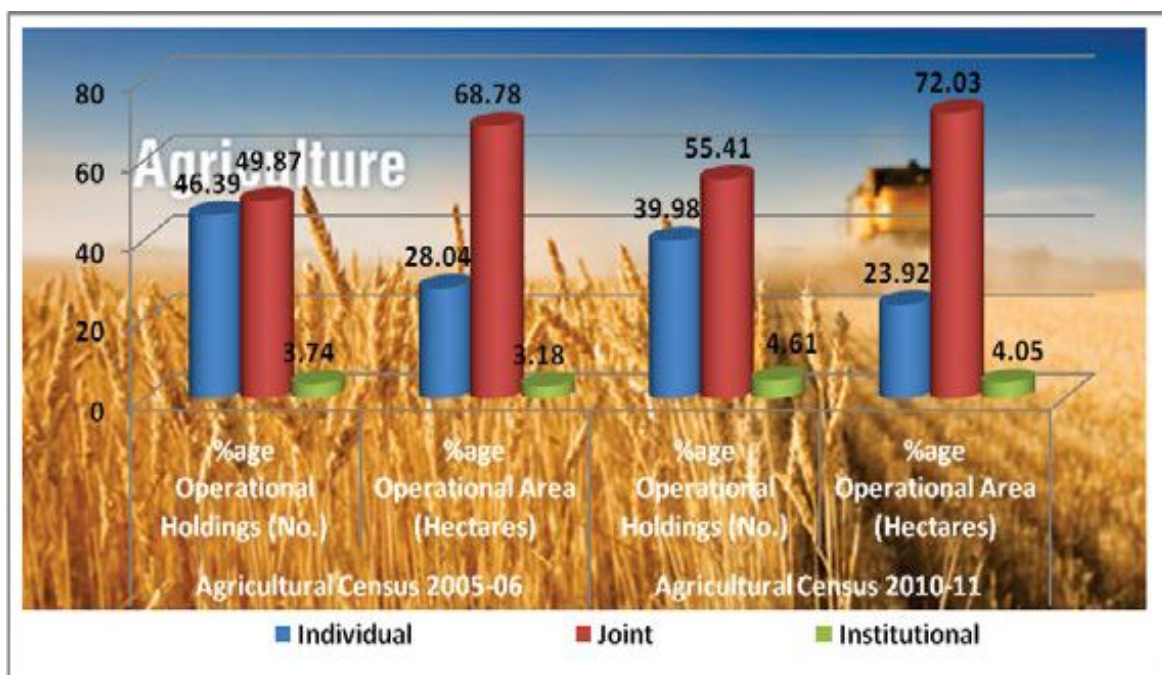
Sources: - Agricultural Census 2005-06 & 2010-11

Note: - Figures in parenthesis relate percentage to total

2.2 It may be inferred from Statement 10.1 that the number of operational holdings in Delhi reduced from 25311 in 2005-06 to 20497 in 2010-11. The reduction in land holdings in Delhi worked out at 3.80 per cent per annum. The reduction of operational holdings by the individual category was highest at 6.04 per cent per annum; while the same in joint and institutional category at 2.01 per cent and 0.04 per cent per annum respectively. The operational area of Delhi decreased from 37770.29 hectares during 2005-06 to 29628.21 hectares during 2010-11. The reduction in operational area during the last two agricultural censuses in Delhi was worked out at 4.31 per cent per annum. The reduction in operational area of institutional category during the same period was highest at 6.62 per cent per annum. The same in case of joint and institutional category was worked out at 3.57 per cent per annum and 0.05 per cent per annum respectively. The land holdings and operational area of Delhi during the last two agricultural census is depicted in Chart 10.1.

Chart 10.1

LAND HOLDINGS & OPERATIONAL AREA IN DELHI: 2005-06 & 2010-11



2.3 As per Agriculture Census 2010-11, out of 20497 total operational holdings in the State, 77.21 per cent operational holdings belonged to marginal and small farmers with land holding less than or equal to two ha. Only 0.73% of operational holdings were under the

category of large holdings which size was above ten hectares. Area operated in agriculture in Delhi was highest in medium and semi-medium size and it constitutes about 57 percent area operated. The information regarding number and area of operational holdings all social groups in Delhi are presented in Table 10.1.

3. Land Use Pattern in Delhi

3.1 The total cropped area during 2000-01 was at 52816 hectares which reduced to 34750 hectares in 2015-16. The reduction of cropped area during this period was worked out at 2.28 per cent per annum. Simultaneously, the percentage of cropped area from total area (Excluding Forest Area) was reduced from 35.81 per cent in 2000-01 to 23.26 per cent in 2015-16. The remaining areas of the Delhi are being used for various other uses such as non-agricultural purposes, forest, fallow land, uncultivable land, etc. The main reasons behind such reduction in agriculture area in Delhi are due to the fast urbanization, and shift in occupational pattern especially during the last two decades. This results in reduction of share of this sector to the Gross State Domestic Product of Delhi. The information regarding the land use pattern of Delhi during the last fifteen years is presented in Table 10.2.

4. Crop Intensity

4.1 Crop intensity is an index of agriculture development and is directly related to irrigation facilities. It is the percentage ratio of gross cropped area to net area sown. It may be measured by the formula-gross cropped area/net sown area x 100. The intensity of cropping, therefore, refers to raising a number of crops from the same field during one agricultural year. The index of cropping intensity is 100 if one crop has been grown in a year and it is 200 if two crops are raised. Higher the index, greater is the efficiency of land use. The cropping intensity has direct correlation with assured irrigation which enables farmers to go for multiple cropping and use higher dose of fertilizers and HYV seeds. Hence, besides irrigation fertilisers, early maturing high yielding variety of seeds, selective mechanization such as the use of tractors, pumping sets and seed drills, etc., plant, protection measures through the use of insecticides, pesticides etc. do have role in affecting the intensity of cropping. The information regarding crop intensity of Delhi during the last 15 years in presented in Statement 10.2.

Statement 10.2

CROP INTENSITY OF DELHI DURING 2000-01 TO 2015-16

(in hectares)

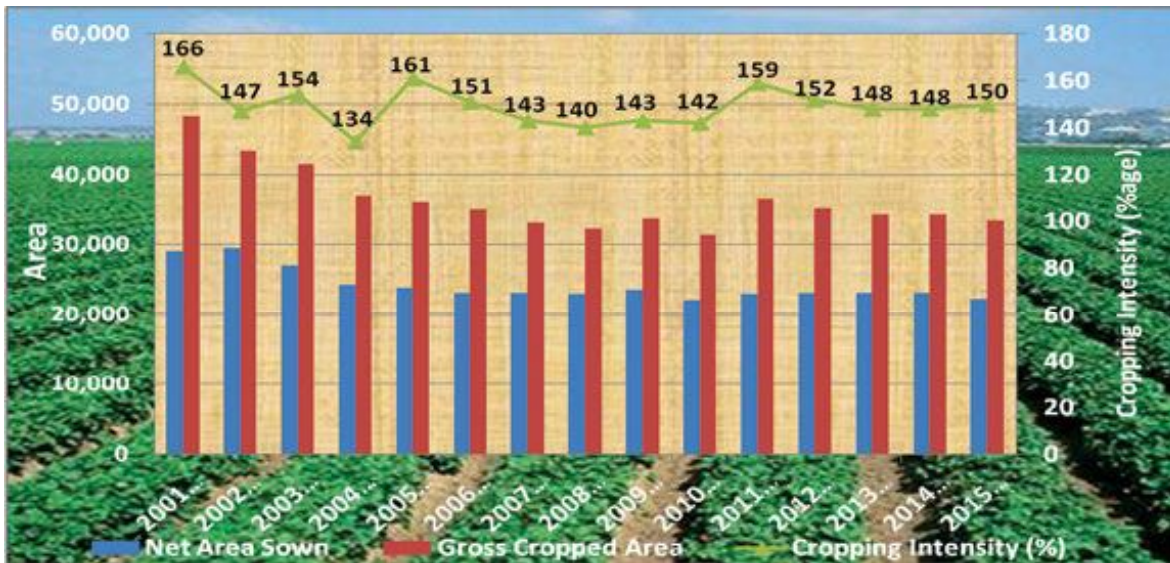
S.No.	Year	Net Area Sown	Gross Cropped Area	Cropping Intensity (%)
1.	2000-01	34,034	52,816	155
2.	2001-02	29,116	48,445	166
3.	2002-03	29,477	43,391	147
4.	2003-04	26,971	41,509	154
5.	2004-05	24,214	36,957	134
6.	2005-06	23,809	36,041	161
7.	2006-07	23,109	34,981	151
8.	2007-08	23,056	33,078	143
9.	2008-09	23,025	32,288	140
10	2009-10	23,575	33,700	143
11	2010-11	22,124	31,366	142
12	2011-12	22,885	36,445	159
13	2012-13	23,118	35,178	152
14	2013-14	23,150	34,341	148
15	2014-15	23,150	34,312	148
16	2015-16	22,300	33,454	150

Source: Development Department, Govt. of NCT of Delhi

- 4.2 It may be observed from Statement 10.2 that the crop intensity was highest at 166% during 2001-02 and lowest at 134% during 2004-05. The crop intensity of Delhi during 2015-16 is estimated at 150%. In addition, area under the food-grain crops have been decreased during this period but the same in vegetables increased being one of the fast growing mega cities in India, showing the importance of agriculture activity with the limited available land. The same is also depicted in chart 10.2.

Chart 10.2

CROPPING INTENSITY OF DELHI



5. Cropping Pattern

5.1 Cropping pattern is the sequential arrangement of crops on a piece of land. Paddy, Jowar and Bajra during Kharif and Wheat and Mustard crops during the Rabi seasons are the major crops in Delhi. The cultivation of vegetables is in continuous process throughout the year. The information regarding the area, production and yields of some of the selected crops in Delhi during 2015-16 is presented in Statement 10.3.

Statement 10.3

AREA, PRODUCTION & YIELD OF CROPS IN DELHI 2015-16

S. N.	Name of the Crops	Area (Hectare)	Production (Metric Ton)	Yield (Kg. per Hectare)
1.	Wheat	19,050	83,419	4,379
2.	Barley	62	181	2,919
3.	Bajra	1,482	3,256	2,197
4.	Maize	34	174	5,118
5.	Jowar	3,161	3,035	960
6.	Paddy	5,854	25,256	4,314
7.	Gram	25	53	2,120
8.	Mustard	3,593	4,527	1,260

Source:- Development Department, Govt. of NCT of Delhi

- 5.2 It may be observed from Statement 10.3 that wheat was the main food crop in Delhi during 2015-16. Area, Production and Yield of Wheat were recorded at 19050 hectare, 83419 MT and yield 4379 Kg/Hect. respectively. During 2015-16, the yield of Barley, Bajra, Maize, Jowar, Paddy, Gram and Mustard was at 2919, 2197, 5118, 960, 4314, 2120 and 1260 kg per hectare respectively. The information regarding production and yield of food-grain in Delhi during 2015-16 is presented in Table 10.3.
- 5.3 The returns from traditional agriculture are presently less attractive as compared to the high value of commercial horticulture and other high value added agriculture activities. The Govt. of NCT of Delhi is therefore encouraging farmers to take-up vegetables, floriculture production, mushroom cultivation etc. The area under floriculture has been increased from 5,479 hectares in 2005-06 to 12,638 hectares during the year 2015-16.

6. Irrigation in Delhi

- 6.1 Irrigation in Delhi mainly depends upon ground water and partly upon surface water. Irrigation from the ground water is provided through shallow cavity and the deep cavity state tube-wells, whereas surface irrigation provided by way of utilizing treated effluent available from existing sewage treatment plants located at coronation pillar, Okhla and Keshopur. Water from Western Yamuna Canal system under the control of Haryana Govt. is also utilized for irrigation purpose.
- 6.2 Due to fast urbanization taking place in the rural areas of Delhi, cultivable command area under irrigation is getting reduced day by day. In Master Plan of 2021 for Delhi, Delhi Development Authority has also proposed complete urbanization of Delhi. Hence any increase in the command area in future is not possible. The information regarding the source-wise irrigated area in Delhi during the last eight years is presented in Statement 10.4

Statement 10.4

SOURCE-WISE IRRIGATED AREA IN DELHI 2008-09 TO 2015-16

(Area in hectares)

S. No	Sources	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16*
1.	Canals	2245	2238	2241	2225	2225	2225	2225	2218
2.	Wells	21492	21205	21742	19561	19561	19561	19561	19561
3.	Area Irrigated	23737	23443	23982	18581	21786	21786	21786	21751
4.	Area irrigated under more than one crop	7370	7310	8309	7875	7875	7875	7875	7678
5.	Gross area Irrigated	31107	30753	32291	29661	29661	29661	29661	29429

Source: Revenue Department & Development Department

* Estimated

- 6.3 It may be inferred from the statement 10.4 that gross area irrigated reduced from 31107 hectares during 2008-09 to 29429 hectare during 2015-16 indicating a decline of 5.39% during the last eight years likewise, area irrigated through wells which was main source of irrigation also reduced from 21492 hectare during 2008-09 to 19561 hectare during 2015-16 recording a decrease of 8.00% during the same period. The information recording area irrigated by different sources in Delhi during 2008-09 to 2015-16 is presented in Table 10.4.
- 6.4 Rainfall is also one of the other main sources of irrigation in Delhi. Generally rainfall in Delhi is concentrated in three months viz. July, August and September. The detail of rainfall during the last nine years in Delhi especially in the months of July, August and September is presented in Statement 10.5.

Statement 10.5

RAIN FALL IN DELHI (JULY - SEPTEMBER)

(in mm)

S.No.	Details	July	August	September
1.	Normal	210.60	247.70	125.40
2.	2006	313.30	98.00	129.60
3.	2007	163.10	214.30	85.60
4.	2008	146.20	301.70	165.40
5.	2009	161.20	216.60	191.20
6.	2010	239.60	455.10	332.90
7.	2011	111.70	190.30	225.80
8.	2012	94.80	378.80	54.80
9.	2013	340.50	321.40	94.40
10.	2014	103.00	139.10	82.60
11.	2015	235.20	181.60	22.00

Source:- Regional Metrological Centre, New Delhi

- 6.5 It may be observed from above statement that the rainfall in Delhi during 2010 was higher than the normal rainfall in Delhi. Normal rainfall relates to the norms of the Metrological Department of Govt. of India.

7. Animal Husbandry

- 7.1 Animal husbandry is the occupation which takes care of domestic animals that are used primarily as food or product source. The word "Livestock" is an umbrella term used for

domesticated animals raised in an agricultural environment, with the intent of providing food, textiles, labor, or fertilizer to their owners. Common examples of livestock are horses, pigs, goats, buffaloes cows etc. Raising livestock is an important source of livelihood of the people all over the world. It is an important component in the agriculture sector which affects the development of the economy directly and indirectly. The information regarding the livestock Census in Delhi during 2003, 2007 and 2012 is presented in Statement 10.6.

Statement 10.6

LIVESTOCK IN DELHI AND ITS GROWTH: 2003, 2007 AND 2012

S. No.	Livestock	Livestock Census (Number)			Growth (%)	
		2003	2007	2012	Per cent (during 2003-2012)	Per annum
1.	Cow	91589	107730	86433	- 5.63	- 0.62
2	Buffalo	230552	266626	162142	- 29.67	- 3.30
3	Sheep	3377	5896	932	- 72.40	-8.04
4	Goat	16779	21176	30470	81.60	9.07
5	Others	32481	21891	86420	166.06	18.45
	Total	374778	423319	360397	- 3.84	-0.43

- 7.2 It may be inferred from statement 10.6 that the livestock in Delhi decreased marginally from 3.75 lakh in 2003 to 3.60 lakh in 2012 recording a negative annual growth at -0.43 per cent. The highest growth of livestock was reported at 18.45% per annum in case of Others Category of the livestock. Similarly, growth of 9.07% per annum was recorded in case of Goats. On the other hand, the highest negative growth was recorded at -8.04% per annum in the case of sheep. The negative growth also reported at -3.30% per annum and -0.62% per annum in buffaloes and cows respectively. The main reason for decline in number of live stock may be attributed to decline in agricultural and allied activities and rapid urbanization in Delhi.
- 7.3 The important livestock products in Delhi are milk, eggs and meat. The production of milk which was 296.00 MT during 2002-03 declined to 281.04 MT during 2014-15 indicating a decline of 5.06 % during the period of the last decade mainly due to decline in number of cows and buffaloes as a result of rapid urbanization in Delhi. The production of meat which was 32380 MT during 2002-03 increased significantly to 70391 MT during 2014-15 recording an increase of 118 %.

8. Veterinary Facilities

- 8.1 There are 49 Govt. Veterinary hospitals, 26 Veterinary Dispensaries, 2 laboratory/research centre for providing veterinary facilities in Delhi. The number of Govt. Veterinary Hospitals and Dispensaries almost remained unchanged in Delhi during the last one decade. The number of animals treated in Govt. Veterinary Hospitals/Dispensaries increased from 3.64 lakh during 2000-01 to 4.12 lakh during 2015-16. It may be due to enhancement of education and awareness among the farmers. The information regarding veterinary services in Delhi is presented in Table 10.5.

9. Fisheries

- 9.1 Fishing as an occupational activity is decreasing sharply in Delhi due to rapid urbanization, and resultant non-availability of water bodies suitable for fish culture. The Fisheries Unit surveyed/identified 24 water bodies in rural areas of North-west district which are to be leased out to the fish farmers by Panchayat/ Revenue Department. Delhi Cabinet and Hon'ble LG have emphasized to start fish culture which will help in harvesting the water and also increase the fish production in Delhi. The Fisheries Unit regulates fishing under the Punjab fisheries Act 1914, and Indian fisheries Act 1897, and prevent destructive practices and unscrupulous fishing. The Fisheries unit performs the dual function of producing fish seed as well as fish for consumption purpose. During the year 2015-16 the fish seeds production in Delhi is remains same as 16.20 lakh (No.s) during 2014-15 as recorded. On the other hand, the fish production increased to 0.71 thousand tons during 2015-16 from 0.68 thousand tons during 2014-15. The information regarding production of fish seed and fish is presented in Statement 10.7.

Statement 10.7

FISH SEED AND FISH PRODUCTION IN DELHI 2002-03 TO 2015-16

S. No	Years	Fish Seed Production (lakh)	Fish Production (Thousand Tons)
1.	2002-03	23.3	2.30
2.	2003-04	20.0	2.10
3.	2004-05	17.2	1.40
4.	2005-06	13.50	0.80
5.	2006-07	12.00	0.70
6.	2007-08	12.40	0.70
7.	2008-09	13.30	0.70
8.	2009-10	13.90	0.72
9.	2010-11	12.95	0.82
10.	2011-12	13.00	0.74
11.	2012-13	15.25	0.69
12.	2013-14	18.25	0.68
13.	2014-15	16.20	0.68
14.	2015-16	16.20	0.71

10. Rural Development

10.1 As per Population Census 2011, total area of Delhi was 1483 Sq. Km out of which rural area of Delhi was 369.35 Sq. Km (24.91%). 2.5% population of Delhi was residing in rural area. As an economy moves towards a progressive state, rural area automatically converted into urban area, consequently reduces the number of villages and the rural population. The number of villages in Delhi reduced from 304 in 1951 to 112 in 2011. The information regarding the villages, rural population during the last seven decades is presented in Statement 10.8.

Statement 10.8

RURAL POPULATION OF DELHI: 1951-2011

S. No	Years	Villages (Number)	Population		
			Rural	Total	% of Rural to total
1	1951	304	306938	1744072	17.60
2.	1961	276	299204	1658612	11.25
3.	1971	243	418675	4065698	10.30
4.	1981	214	452206	6220406	7.27
5.	1991	199	949019	9420644	10.07
6.	2001	165	944727	13850507	6.82
7.	2011	112	419042	16787941	2.50

Source:- Delhi Statistical Hand Book, 2016

11 Delhi Rural Development Board

- 11.1 Delhi Rural Development Board (DRDB) is re-constituted from time to time with the aim to formulate a unified area plan for rural areas of Delhi and to monitor projects and schemes being implemented by all agencies such a Municipal Corporation of Delhi, Irrigation and Flood Control Department, Development Deptt. It is recently reconstituted in the month of May, 2015. The Board's function is to advise the Government on issues connected with the infrastructure development for securing planned growth of rural area of Delhi under Integrated Development of Rural Villages Scheme. The Board meets at regular intervals to review the progress of the implementation of the schemes/works relating to rural area development under Integrated Development of Rural Villages Scheme (IDRV).
- 11.2 During the Financial Year 2015-16; 536 proposals (including old proposals of financial year 2014-15) and 91 proposals have been approved by the DRDB under the Chairmanship of Hon'ble Minister of Development, Govt. of NCT of Delhi. Total 627 proposals amounting to ` 831 crore was approved by DRDB during the financial year 2015-16 out of which 196 works amounting to ` 235.10 crore were sanctioned and AA & ES were issued during 2015-16, during the current financial year 2016-17, eleven numbers of schemes have been approved and AA/ES issued for ` 9.62 crore. An outlay of ` 100 crore was approved for the year 2015-16 for the execution of Rural Development works out which an expenditure of ` 97.66 crore has been incurred on various works. During the current financial year 2016-17 the fund were also allotted under Revenue head for repairs of IDRV works (Gen. & SCSP head).
- 11.3 In the rural area 78 Multi Purpose Community Centres (MPCCs) were constructed under the mini master plan for development of rural villages. All the MPCCs with complete

management and maintenance thereof have been transferred to the concerned Dy. Commissioner (DMs) under the Revenue Department, Govt. of NCT of Delhi vide order No.F/PDRD/Estate/Mgmt of MPCC/2004/3121-3132 dated 16.08.2004 & subsequent F5(166)/Misc./AC/ 2005/Div.Comm/Nr/2496-2501 dated 16.06.2014.