

CHAPTER – 10

AGRICULTURE & RURAL DEVELOPMENT

The contribution of the agriculture sector has been reduced in the NCT of Delhi due to rapid urbanisation and the growth of trade and industry sector in Delhi. 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.

- 1.2 The percentage distribution of Gross State Value Added (GSVA) of Delhi at 2011-12 prices showed a declining trend of agriculture and the allied sector. More clearly, the percentage contribution of the agriculture sector to GSVA of Delhi at current prices reduced from 0.94 per cent in 2011-12 to 0.49 per cent in 2018-19.

2. Land Holding Pattern

- 2.1 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: 2010-11 & 2015-16 (Phase I Provisional Results)

S. No.	Details	Agricultural Census 2010-11	Agricultural Census 2015-16 (Phase I Provisional Results)
1.	Operational Holdings (Number)		
	a. Individual	8195 (39.98)	7960 (38.50)
	b. Joint	11358 (55.41)	11575 (55.99)
	c. Institutional	944 (4.61)	1140 (5.51)
	Total	20497 (100.00)	20675 (100.00)
2.	Operational Area (in Hectares)		
	a. Individual	7087.95 (23.92)	6886.76 (23.79)
	b. Joint	21341.82 (72.03)	20063.22 (69.31)
	c. Institutional	1198.44 (4.05)	1995.94 (6.90)
	Total	29628.21 (100.00)	28945.92 (100.00)

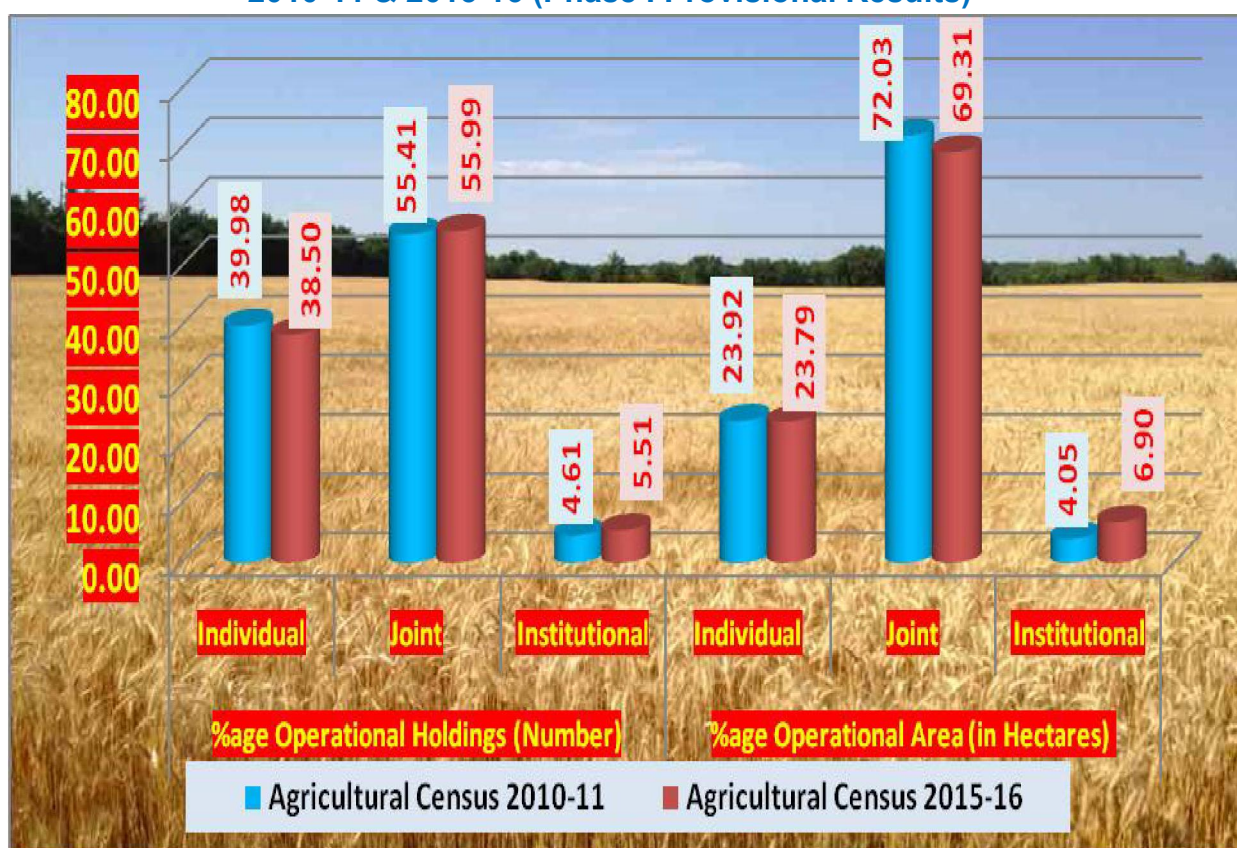
Sources: Agricultural Census 2010-11 & 2015-16 (Phase I Provisional Results)

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 increased from 20497 in 2010-11 to 20675 in 2015-16. The increase in land holdings in Delhi worked out at 0.17 per cent per annum. The operational area of Delhi decreased from 29628.21 hectares during 2010-11 to 28945.92 hectares during 2015-16. The reduction in operational area during the last two agricultural censuses in Delhi was worked out at 0.46 per cent per annum. The land holdings and operational area of Delhi during the last two agricultural census are depicted in Chart 10.1.

Chart 10.1

**LAND HOLDINGS & OPERATIONAL AREA IN DELHI:
2010-11 & 2015-16 (Phase I Provisional Results)**



2.3 As per Agriculture Census 2015-16, out of 20675 total operational holdings in the State, 81.20 per cent operational holdings belonged to marginal and small farmers with land holding less than or equal to two hectares. Only 0.58% of operational holdings were under the category of large holdings whose size was above ten hectares. Area operated in agriculture in Delhi was highest in

medium and semi-medium size and it constitutes about 56 per cent area operated.

3. Land Use Pattern in Delhi

- 3.1 The total cropped area during 2000-01 was at 52817 hectares which reduced to 34750 hectares in 2017-18. The reduction of the cropped area during this period was worked out at 1.91 per cent per annum. Simultaneously, the percentage of the cropped area from the total area (Excluding Forest Area) was also reduced during this period. 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 a reduction in the agriculture area in Delhi are due to fast urbanization and the shift in occupational pattern, especially during the last two decades. This results in the reduction of the share of this sector to the Gross State Domestic Product of Delhi. The information regarding the land use pattern of Delhi during the last Nineteen years is presented in Table 10.1.

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. Crop intensity, therefore, refers to raising a number of crops from the same field during one agricultural year. The index of crop 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 crop intensity has a direct correlation with assured irrigation which enables farmers to go in for multiple cropping and use a 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 a role in affecting crop intensity. The information regarding the crop intensity of Delhi during the last 19 years is presented in Statement 10.2.

Statement 10.2
CROP INTENSITY OF DELHI DURING 2000-01 TO 2018-19

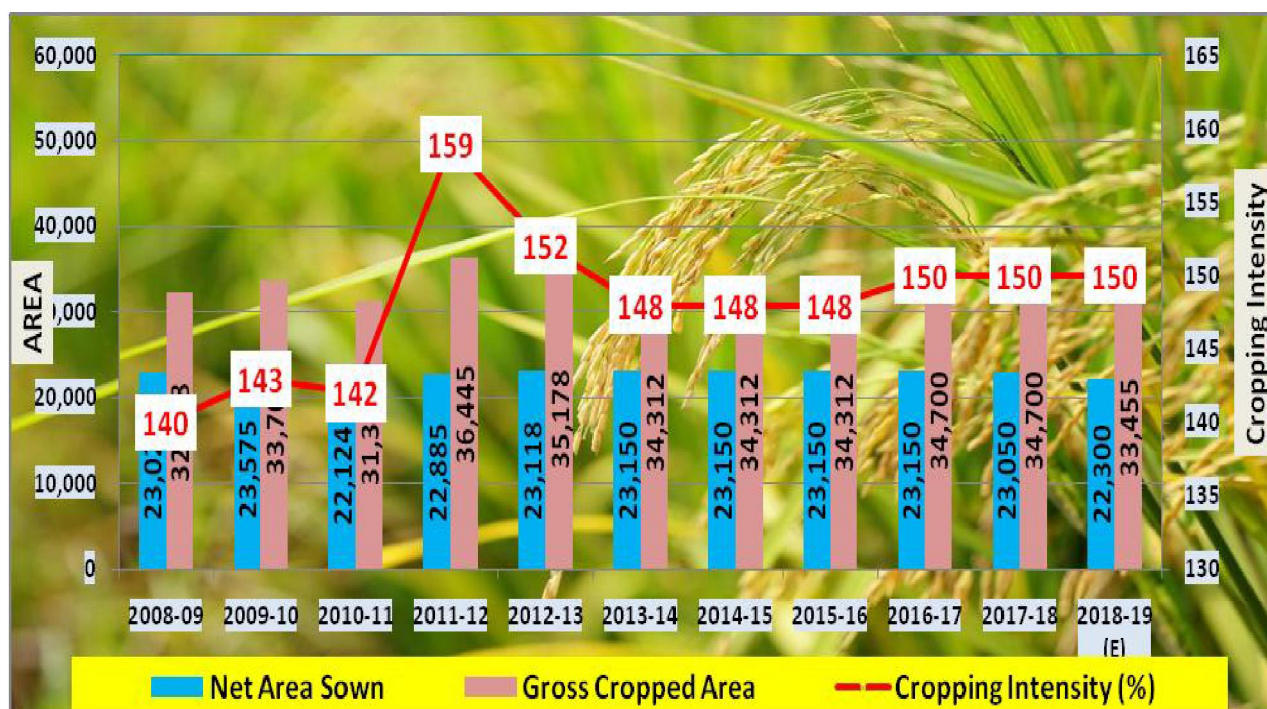
(in hectares)

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	34,312	148
15.	2014-15	23,150	34,312	148
16.	2015-16	23,150	34,312	148
17.	2016-17	23,150	34,750	150
18.	2017-18	23,050	34,700	150
19.	2018-19 (Estimated)	22,300	33,455	150

Source: Development Department, Govt. of NCT of Delhi

- 4.2 It may be observed from Statement 10.2 that the cropping intensity was highest at 166% during 2001-02 and lowest at 134% during 2004-05. The crop intensity of Delhi during 2018-19 is estimated at 150%. In addition, the 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 a continuous process throughout the year. The information regarding the area, production and yields of some of the selected crops in Delhi during 2017-18 is presented in Statement 10.3.

Statement 10.3
AREA, PRODUCTION & YIELD OF CROPS IN DELHI 2017-18*

S. N.	Name of the Crops	Area (Hectare)	Production (Metric Ton)	Yield (Kg. per Hectare)
1.	Wheat	19,671	88,053	4,476
2.	Barley	70	190	2,714
3.	Bajra	1,502	3,327	2,215
4.	Maize	36	179	4,972
5.	Jowar	3,201	3,095	967
6.	Paddy	6,003	26,150	4,356
7.	Gram	25	53	2,120

Source: Development Department, Govt. of NCT of Delhi

*Estimated

- 5.2 It may be observed from Statement 10.3 that wheat was the main food crop in Delhi during 2017-18. Area, Production and Yield of Wheat were recorded at 19671 hectares, 88053 MT and 4476 Kg/ Hect. respectively. During 2017-18, the yield of Barley, Bajra, Maize, Jowar, Paddy and Gram was at 2714, 2215, 4972, 967, 4356 & 2120 kg per hectare respectively. The information regarding the production and yield of food-grain in Delhi from 2005-06 to 2017-18 is presented in Table 10.2.
- 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.

6. Irrigation in Delhi

- 6.1 Irrigation in Delhi mainly depends upon groundwater and partly upon surface water. Irrigation from the groundwater is provided through the 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 the 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 data 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 2010-11 TO 2017-18

(Area in hectares)

S. No	Sources	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18*
1.	Canals	2241	2225	2225	2225	2225	2218	2240	2246
2.	Wells	21742	19561	19561	19561	19561	19533	19727	19777
3.	Area Irrigated	23982	18581	21786	21786	21786	21751	21967	22023
4.	Area irrigated under more than one crop	8309	7875	7875	7875	7900	7678	7756	7775
5.	Gross area Irrigated	32291	29661	29661	29661	29661	29429	29723	29798

Source: Revenue Department & Development Department

* Estimated

- 6.3 It may be inferred from the statement 10.4 that gross area irrigated reduced from 32291 hectares during 2010-11 to 29798 hectare during 2017-18 indicating a decline of 7.72% during the last eight years likewise, area irrigated through wells, which was the main source of irrigation, also reduced from 21742 hectares during 2010-11 to 19777 hectare during 2017-18 recording a decrease of 9.04% during the same period.
- 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 eleven years in Delhi especially in the months of July, August and September is presented in Statement 10.5.

Statement 10.5
RAINFALL 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
12.	2016	292.50	122.70	75.00
13.	2017	170.5	173.0	158.50

Source:- Regional Metrological Centre, New Delhi

- 6.5 It may be observed from the 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, labour, 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 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 2007-2012)	Per annum
1.	Cow	91589	107730	86433	- 19.77	- 3.95
2	Buffalo	230552	266626	162142	- 39.19	- 7.84
3	Sheep	3377	5896	932	- 84.19	-16.84
4	Goat	16779	21176	30470	43.89	8.79
5	Others	32481	21891	86420	294.77	58.95
	Total	374778	423319	360397	- 14.86	-2.97

7.2 It may be inferred from statement 10.6 that the livestock in Delhi decreased from 4.23 lakh in 2007 to 3.60 lakh in 2012 recording a negative annual growth at -2.97 per cent. The highest growth of livestock was reported at 58.95% per annum in case of 'Others' Category of livestock. Similarly, the growth of 8.79% per annum was recorded in the case of goats. On the other hand, the highest negative growth was recorded at -16.84% per annum in the case of sheep. The negative growth also reported at -7.84% per annum and - 3.95% per annum in buffaloes and cows respectively. The main reason for the decline in livestock number may be attributed to the decline in agricultural and allied activities and rapid urbanization in Delhi.

8. Veterinary Facilities

8.1 There are 49 govt. veterinary hospitals, 26 veterinary dispensaries, 1 laboratory/research centre and 1 veterinary polyclinic for providing veterinary facilities in Delhi. The number of animals treated in Govt. Veterinary Hospitals/Dispensaries increased from 3.64 lakh during 2000-01 to 4.69 lakh during 2017-18. It may be due to the enhancement of education and

awareness among the farmers. The information regarding veterinary services in Delhi is presented in Statement 10.7.

Statement 10.7

VETERINARY SERVICES IN DELHI DURING 2000-01 TO 2017-18

S. No.	Years	Veterinary Facilities (No.)			Animal treated
		Hospitals (inc. one Vety. Poly. Clinic)	Dispensaries	Labs/ Research Centres	
1	2000-01	48	27	2	363555
2	2001-02	48	27	2	364592
3	2002-03	48	27	2	376734
4	2003-04	48	27	2	390023
5	2004-05	48	27	2	405009
6	2005-06	48	27	2	506017
7	2006-07	48	27	2	470879
8	2007-08	47	27	2	485501
9	2008-09	48	29	2	462778
10	2009-10	45	29	2	406878
11	2010-11	46	27	2	483709
12	2011-12	46	28	2	415986
13	2012-13	47	28	1	391152
14	2013-14	47	28	2	378359
15	2014-15	47	28	2	367518
16	2015-16	47	28	2	412363
17	2016-17	47	28	2	438504
18	2017-18	49	26	2 (1 Lab & 1 Vet. Polyclinic)	469474

Statement 10.8
Physical Achievements 2017-18

S. No.	Activity	Target 2017-18	Achievement	Target 2018-19
i	Treatment of Sick animals cases	4.00 Lakh	469474	5.00 Lakh
ii	Vaccination against Haemorrhagic Septicaemia and FMD Disease	H.S- 2.00 Lakh F.M.D- 2 Lakh	80025 230654	H.S- 1.5 Lakh F.M.D-1.5 Lakh
iii	A-I with Frozen Semen in cow	20000 Nos.	13309	15000 Nos.
iv	Animal husbandry training-cum-treatment camps for farmer village level	50 Nos.	53	50 Nos.
v	Anti Rabies Vaccination of Dogs	50000 Nos.	42226	50000 Nos.
vi	Animals to be benefited in Gosadans/ Goshalas.	20000 Nos.	8896	20000 Nos.
vii	Treatment of Sterility Cases	22000 Nos.	23662	25000 Nos.
viii	Training to SC/ST candidates in Modern poultry Farming	200	211	200

9. Fisheries

9.1 Fishery activities have been decreased sharply in Delhi due to rapid urbanization but still, there is a good scope for fish farming in available water bodies. The Fisheries Unit surveyed/identified 24 water bodies in rural areas of North-west district for leasing out to the fish farmers. Another 34 and 93 water bodies are being developed by I&FC department and Delhi Jal Board respectively. All these water bodies will also be utilized for fishery activities. The Government has also stressed upon fish culture which will help in harvesting Delhi waters for increasing fish production. Besides, there is ample scope for high-tech fishery like Cage Culture, Re-circulatory Aquaculture System, (RAS) Pearl Culture, ornamental fish breeding/farming, Shrimp Culture, Aquarium making etc. These activities will enhance the farmers' income significantly through the high production of high-value fishes and allied items in the defined land area. This will also help in employment generation for local educated youth, fisherman, SC/ST communities and entrepreneurs in Delhi. Accordingly, the department has introduced projects worth ₹ 344 lakh on Cage Culture, Re-circulatory Aquaculture System, (RAS) and Shrimp farming in Delhi under 'Blue Revaluation' Scheme during the year 2017-18 for

sustainable growth of the sector and open avenues for employment generation/ entrepreneurship development.

9.2 The Fisheries Unit regulates fishing under the Punjab fisheries Act 1914, and the 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 2017-18 the fish seeds production in Delhi was 20 lakh (No's) and fish production was 0.80 thousand tons. The year wise information regarding the production of fish seed and fish is presented in Statement 10.9

Statement 10.9

FISH SEED AND FISH PRODUCTION IN DELHI 2002-03 TO 2017-18

S. No	Years	Fish Seed Production (lakh)	Fish Production (Tons)
1.	2002-03	23.3	2300
2.	2003-04	20.0	2100
3.	2004-05	17.2	1400
4.	2005-06	13.50	800
5.	2006-07	12.00	700
6.	2007-08	12.40	700
7.	2008-09	13.30	700
8.	2009-10	13.90	720
9.	2010-11	12.95	820
10.	2011-12	13.00	740
11.	2012-13	15.25	690
12.	2013-14	18.25	680
13.	2014-15	16.20	675
14.	2015-16	16.20	710
15.	2016-17	16.15	740
16	2017-18	20.00	801

10. Rural Development

- 10.1 As per Population Census 2011, the 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 a rural area. As an economy moves towards a progressive state, rural area automatically converted into an 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 10.10

Statement 10.10
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, 2018

11 Delhi Village Development Board

- 11.1 A new advisory board namely 'Delhi Village Development Board (DVDB)' has been constituted in place of Delhi Rural Development Board (DRDB) vide Order dated 20.12.2017 as per cabinet decision no. 2520 dated 13.11.2017. The DVDB has been set up for integrated development of both rural and urban villages in Delhi. Earlier, Delhi Rural Development Board (DRDB) was reconstituted in the month of May 2015.
- 11.2 Delhi Village Development Board shall advise the Government on issues connected with the infrastructure development works in all rural and urban villages of Delhi. Its function would be to consider requests for infrastructure development of the area of the residents in consultation with elected representatives (MPs/MLAs), recommend and prioritize the projects and ensure time-bound implementation etc. and also to meet at regular intervals

for evaluation of developmental projects recommended by the board. The functions of the Board would be as under:

- (a) To study the deficiencies in the existing infrastructure in Delhi rural areas.
- (b) To consider and recommend the prioritization of projects and schemes for implementation.
- (c) To examine the nature and extent of overlapping functions, if any, so as to secure an improvement in the provision of services and quicker redressal of public grievances.
- (d) To review, from time to time, the implementation of the projects and the schemes and recommend measures for effecting coordination amongst the organizations and Departments of the Government in the matter of implementation of such projects and schemes.
- (e) To review the progress of the implementation of the schemes and to recommend to the government of Delhi the quantum of financial assistance required for the execution or implementation of any project or scheme in the area plan, or to be included, for the subsequent fiscal year.
- (f) The following nature of works are being recommended by the DVDB in the rural and urban villages of NCT of Delhi in Lal Dora areas, sizar roads and public utilities on Govt. land, except in unauthorized colonies of any status and resettlement colonies and JJ bastis falling under the jurisdiction of DUSIB:
 - i) Construction of approach roads/ link roads/ village roads.
 - ii) Construction of drainage facilities.
 - iii) Development of Cremation Grounds, Parks, Playgrounds, Vyamshalas, Village Libraries etc.
 - iv) Development of Ponds/ Water Bodies.
 - v) Construction/repair/maintenance of Chaupals, Barat Ghars, Community Centres.
 - vi) Other need-based works like drinking water facility, street lights etc.

11.3 The works will be executed by the land/asset owning agency as far as possible. Works will be carried out by the Executing Agency which had done it earlier or by any other agency only after obtaining the NOC from land/asset owning agency/ previous Executing Agency, as the case may be.

- 11.4 So far, six meetings of the DVDB have been held and the details of project proposals of Hon'ble MPs/MLAs, approved by the Board are given as under:-

S.No.	Date of Meeting	Numbers of approved project proposals	Amount (₹ in Crore)
1	21.12.2017	104	120.26
2	19.01.2018	349	434.17
3	12.02.2018	380	309.72
4	13.04.2018	132	126.71
5	23.05.2018	104	143.59
6	23.08.2018	278	211.58
	Total	1347	1346.03

These works, proposed by the Hon'ble MPs/MLAs in Rural and Urban villages of NCT of Delhi and approved by the DVDB in various meetings, have been recommended in Lal Dora areas, sizar roads, public utilities on Govt. land including the Gram Sabha land.

- 11.5 For the financial year 2017-18, a sum of ₹ 100 crore was allotted to the RD unit (in RE). 133 sanctions amounting to ₹ 115.84 Crore were issued by the RD unit in favour of Executing Engineering Agency i.r.o. project schemes approved by DRDB/ DVDB. An amount of ₹ 98.64 Crore was spent by the Executing Agency during 2017-18. For the financial year 2018-19, a sum of ₹ 200 crore was allotted to RD unit (BE). RD unit has sanctioned 215 projects/schemes amounting to ₹ 216.84 crores (up to 17.09.18) during 2018-19. An amount of ₹ 56.21 crore (up to 30.11.18) has been spent by the Executing Agency in 2018-19.

11.6 Village Development Committees (VDCs)

To assist the DVDB in carrying out a baseline survey of the villages to assess the facilities available, facilities required and identifying the priority areas in the villages where holistic development of the rural/ urban villages is required, the DVDB may constitute a Village Development Committees (VDCs) for each rural and urban villages of Delhi. After the approval of DVDB, constitution order of 201 Nos. of VDCs, duly recommended by Hon'ble MLAs, have been issued by the RD Unit so far.