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Households With Drainage Facilities in India - 2001



September, 2006

**Socio Economic and Monitoring Division
Town & Country Planning Organisation
Ministry of Urban Development
Government of India**

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PREFACE

Drainage is an important facility that needs to be provided in each and every city. Cities without proper drainage system face problems of water-logging on roads, streets and bylanes during rainfall and the resultant traffic jams, polluted atmosphere, insanitary conditions, spread of various water-borne diseases, etc. In fact, cities without proper drainage facilities give an ugly appearance and are eyesores. Even an open drainage system is preferred to having none. A closed drainage system in a city with proper maintenance will go a long way in making it a “healthy” city. However, drainage in itself is also not enough. What is more important is that all the households should be connected with it, as drainage is a determinant of the quality of life and requires utmost attention.

What is the scenario in India? How many households have access to closed drainage system and how many have open or none? To answer these questions, the instant document has been brought out. The analysis carried out in the document is based on the data of Census of India, 2001, which, *inter alia*, provides data pertaining to distribution of households by availability of type of drainage connectivity for wastewater outlet. The drainage connectivity has been classified into three types, viz., ‘closed drainage’, ‘open drainage’ and ‘no drainage’. The census data does not include institutional households.

The document contains four chapters. It has been brought out by Sh. J. Nagarajan, Senior Social Scientist., assisted by Shri K.L. Buttan, Research Officer and Shri P.P.Tuteja. Sh. C.A. Lokesh carried out the drafting of the report in the prescribed format. He also undertook computerization and processing of data to generate the required analytical tables along with Sh. T.Tete. Sh. B.K. Bharti, Senior Research Officer, was responsible for supervising the work.

The present document is the third in the series of the documents that have been brought out by TCPO during the past few months relating to access of households to various facilities, the other two being related to 'drinking water' and 'toilet' facilities.

It is hoped that this document would prove useful for policy-makers, administrators, urban planners, researchers and academicians.

September, 2006
New Delhi

(J.B. Kshirsagar)
Chief Planner

CHAPTER I

Households With Drainage Facilities All India Scenario At A Glance

The distribution of households by availability of drainage facilities in the country as a whole, as per the Census of India, 2001, may be seen in Table 1 (Figure 1). The important findings from this table are given below :

I. Percentage distribution of households by availability of Type of Drainage Connectivity for Waste Water Outlet - Total

No drainage	:	53.6
Open drainage	:	33.9
Closed drainage	:	12.5

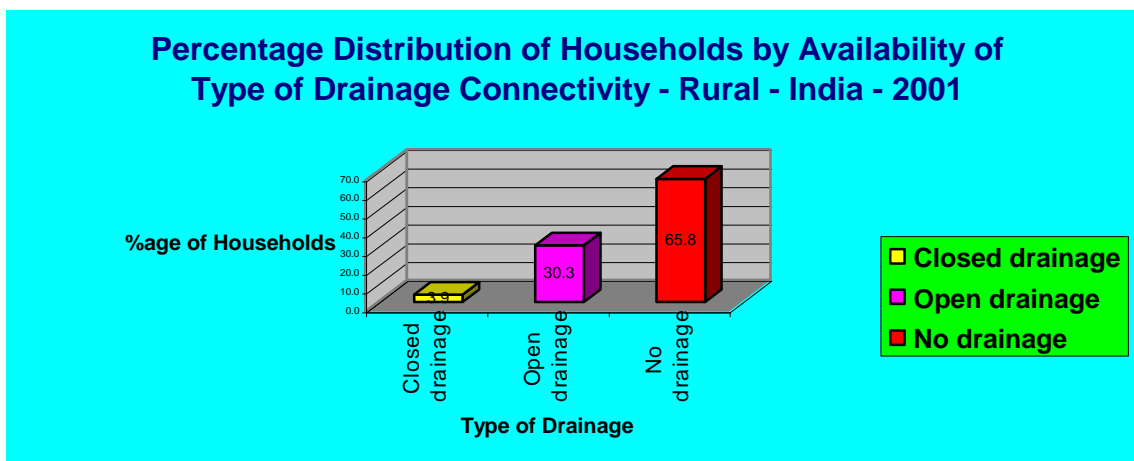
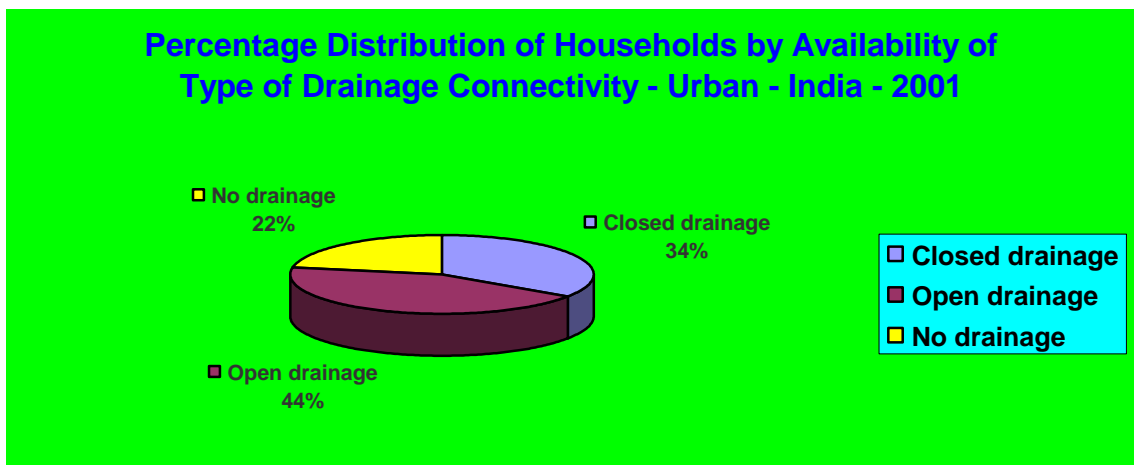
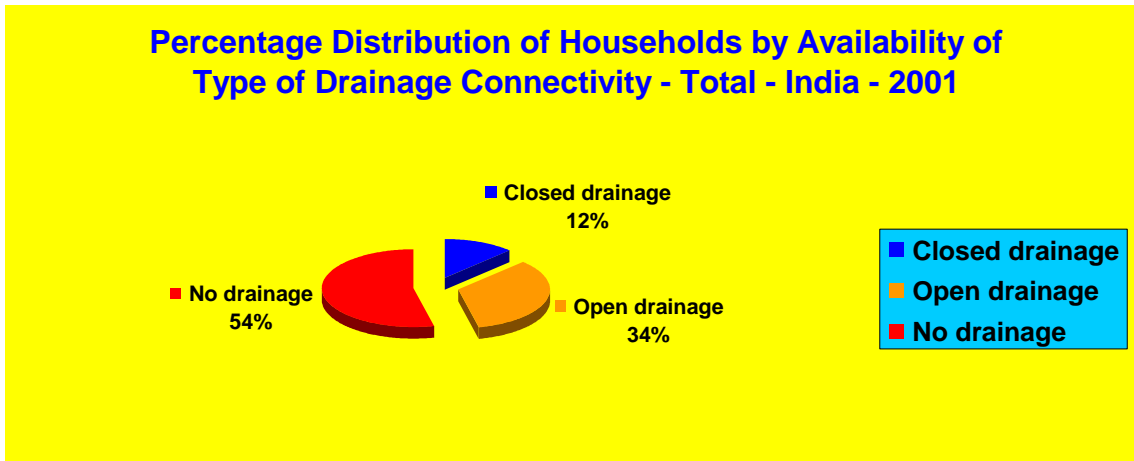
II. Percentage distribution of households by availability of Type of Drainage Connectivity for Waste Water Outlet - Urban

No drainage	:	22.1
Open drainage	:	43.4
Closed drainage	:	34.5

III. Percentage distribution of households by availability of Type of Drainage Connectivity for Waste Water Outlet - Rural

No drainage	:	65.8
Open drainage	:	30.3
Closed drainage	:	3.9

Table 1						
Distribution of Households by Availability of Type of Drainage Connectivity for Waste Water Outlet - India - 2001						
Type of Connectivity	Total		Urban		Rural	
	No. of households	%	No. of households	%	No. of households	%
Closed drainage	23,925,761	12.5	18,523,082	34.5	5,402,679	3.9
Open drainage	65,142,354	33.9	23,284,582	43.4	41,857,772	30.3
No drainage	102,895,820	53.6	11,884,712	22.1	91,011,108	65.8
Total	191,963,935	100.0	53,692,376	100.0	138,271,559	100.0
<i>Source : Census of India, 2001</i>						



CHAPTER II

Households With Closed Drainage Facilities

The absolute number and the percentage of households having connectivity to closed drainage for waste water outlet, in the country as a whole and in various states; for total, urban and rural areas separately, as per the Census of India, 2001; can be seen in Tables 2 A, 2 B and 2 C respectively. In these tables, the states have been arranged in ascending order of the respective percentage furnished in the table. The important findings from the data furnished in the tables are given below.

I. All India - Percentage of households having connectivity to closed drainage for waste water outlet

Total	:	12.5
Urban	:	34.5
Rural	:	3.9

II. State having the highest percentage of households having connectivity to closed drainage for waste water outlet

Total	:	Chandigarh (71.7)
Urban	:	Chandigarh (77.2)
Rural	:	Chandigarh (24.9)

III. State having the lowest percentage of households having connectivity to closed drainage for waste water outlet

Total	:	Manipur (2.0)
Urban	:	Manipur (2.9)
Rural	:	Assam (0.9)

IV. States whose percentages are higher than or equivalent to the national average of households having connectivity to closed drainage for waste water outlet

Total		Urban		Rural	
State / UT	%	State / UT	%	State / UT	%
Haryana	12.9	Tamil Nadu	34.6	Punjab	4.2
Sikkim	13.6	Haryana	35.0	Karnataka	4.3
Andhra Pradesh	13.7	Andhra Pradesh	36.0	Tamil Nadu	4.3
Tamil Nadu	16.9	Goa	38.1	Uttaranchal	4.5
Karnataka	17.3	Karnataka	41.6	Maharashtra	5.1
Punjab	18.5	Himachal Pradesh	43.5	Uttar Pradesh	5.3
Pondicherry	21.1	Punjab	45.0	Kerala	5.8
Maharashtra	22.0	Maharashtra	45.1	Andhra Pradesh	6.3
Daman & Diu	24.0	Daman & Diu	45.9	Himachal Pradesh	6.5
Goa	24.7	Delhi	51.7	Gujarat	6.8
Gujarat	27.2	Sikkim	57.9	Sikkim	7.3
Delhi	49.2	Gujarat	59.3	Goa	11.5
Chandigarh	71.7	Chandigarh	77.2	Daman & Diu	11.8
				Delhi	13.6
				Chandigarh	24.9

V. States whose percentages are lower than the national average of households having connectivity to closed drainage for waste water outlet

Total		Urban		Rural	
State / UT	%	State / UT	%	State / UT	%
Lakshadweep	0.0	Lakshadweep	0.0	Lakshadweep	0.0
Manipur	2.0	Manipur	2.9	Assam	0.9
Assam	2.2	Tripura	6.8	Mizoram	1.4
Tripura	2.7	Mizoram	8.5	West Bengal	1.4
Chhattisgarh	4.4	A & N Islands	9.1	Chhattisgarh	1.4
Bihar	4.5	Assam	9.8	Jharkhand	1.5
Orissa	4.9	Nagaland	12.1	Manipur	1.7
Mizoram	5.0	Arunachal Pradesh	12.9	Tripura	1.8
Meghalaya	5.1	Kerala	14.9	Madhya Pradesh	1.9
A & N Islands	5.2	Meghalaya	15	Meghalaya	2.4
Nagaland	5.3	Chhattisgarh	17.1	Pondicherry	2.5
Arunachal Pradesh	5.5	Orissa	19.6	Orissa	2.6
Jharkhand	6.4	West Bengal	21.8	Bihar	2.6
West Bengal	7.3	Bihar	22.1	Rajasthan	3.0
Madhya Pradesh	7.7	Jharkhand	23.8	Haryana	3.2
Rajasthan	7.9	Rajasthan	24.1	Arunachal Pradesh	3.3

Kerala	8.0	Madhya Pradesh	24.5	D & N Haveli	3.3
Jammu & Kashmir	8.9	Jammu & Kashmir	25.5	Jammu & Kashmir	3.3
Uttar Pradesh	9.5	Uttar Pradesh	26.5	A & N Islands	3.4
Uttaranchal	10.4	Uttaranchal	28.4	Nagaland	3.6
Himachal Pradesh	10.8	Pondicherry	31.0		
D & N Haveli	11.2	D & N Haveli	34.0		

VI. Distribution of states by percentage of households having connectivity to closed drainage for waste water outlet

i. Total

Percentage Range	No. of States	%age to total	Names of States
Below 5	7	20.0	Lakshadweep, Manipur, Assam, Tripura Chhattisgarh, Bihar, Orissa
5 - 10	12	34.3	Mizoram, Meghalaya, A & N Islands, Nagaland, Arunachal Pradesh, Jharkhand, West Bengal, Madhya Pradesh, Rajasthan, Kerala, J & K, U. P.
10 - 15	6	17.1	Uttaranchal, Himachal Pradesh, D & N Haveli, Haryana, Sikkim, Andhra Pradesh
15 - 20	3	8.6	Tamil Nadu, Karnataka, Punjab
20 - 25	4	11.4	Pondicherry, Maharashtra, Daman & Diu, Goa
25 - 30	1	2.9	Gujarat
30 & above	2	5.7	Delhi, Chandigarh
Total	35	100.0	

ii. Urban

Percentage Range	No. of States	%age to total	Names of States
Below 10	6	17.1	Lakshadweep, Manipur, Tripura, Mizoram, Andaman & Nicobar Islands, Assam
10 - 20	6	17.1	Nagaland, Arunachal Pradesh, Kerala, Meghalaya, Chhattisgarh, Orissa

20 - 30	8	22.9	West Bengal, Bihar, Jharkhand, Rajasthan, Madhya Pradesh, Jammu & Kashmir, Uttar Pradesh, Uttaranchal
30 - 40	6	17.1	Pondicherry, D & N Haveli, Tamil Nadu, Haryana, Andhra Pradesh, Goa
40 - 50	5	14.3	Karnataka, Himachal Pradesh, Punjab, Maharashtra, Daman & Diu
50 & above	4	11.4	Delhi, Sikkim, Gujarat, Chandigarh
Total	35	100.0	

iii. Rural

Percentage Range	No. of States	%age to total	Names of States
Below 2	9	25.7	Lakshadweep, Assam, Mizoram, West Bengal, Chhattisgarh, Jharkhand, Manipur, Tripura, Madhya Pradesh
2 - 4	11	31.4	Meghalaya, Pondicherry, Orissa, Bihar, Rajasthan, Haryana, Arunachal Pradesh, D & N Haveli, Jammu & Kashmir, A & N Islands, Nagaland
4 - 6	7	20.0	Punjab, Karnataka, Tamil Nadu, Uttaranchal, Maharashtra, Uttar Pradesh, Kerala
6 - 8	4	11.4	Andhra Pradesh, Himachal Pradesh, Gujarat, Sikkim
8 - 10	0	0	Nil
10 & above	4	11.4	Goa, Daman & Diu, Delhi, Chandigarh
Total	35	100.0	

Table 2 A				
Statewise Total Number of Households having Connectivity to Closed Drainage for Waste Water Outlet in India - 2001				
S.No.	State / UT	Total no. of households	No. of households (total) having access to closed drainage	
			Number	%
1	Lakshadweep	9,240	0	0.0
2	Manipur	397,656	7,822	2.0
3	Assam	4,935,358	107,509	2.2
4	Tripura	662,023	17,962	2.7
5	Chhattisgarh	4,148,518	182,827	4.4
6	Bihar	13,982,590	623,258	4.5
7	Orissa	7,870,127	386,215	4.9
8	Mizoram	160,966	7,992	5.0
9	Meghalaya	420,246	21,580	5.1
10	A & N Islands	73,062	3,810	5.2
11	Nagaland	332,050	17,625	5.3
12	Arunachal Pradesh	212,615	11,594	5.5
13	Jharkhand	4,862,590	309,494	6.4
14	West Bengal	15,715,915	1,148,754	7.3
15	Madhya Pradesh	10,919,653	841,846	7.7
16	Rajasthan	9,342,294	741,161	7.9
17	Kerala	6,595,206	530,486	8.0
18	Jammu & Kashmir	1,551,768	138,529	8.9
19	Uttar Pradesh	25,760,601	2,456,926	9.5
20	Uttaranchal	1,586,321	164,438	10.4
21	Himachal Pradesh	1,240,633	133,405	10.8
22	D & N Haveli	43,973	4,907	11.2
23	Haryana	3,529,642	454,047	12.9
24	Sikkim	104,738	14,212	13.6
25	Andhra Pradesh	16,849,857	2,300,450	13.7
26	Tamil Nadu	14,173,626	2,393,257	16.9
27	Karnataka	10,232,133	1,766,563	17.3
28	Punjab	4,265,156	787,431	18.5
29	Pondicherry	208,655	44,081	21.1
30	Maharashtra	19,063,149	4,202,901	22.0
31	Daman & Diu	34,342	8,226	24.0
32	Goa	279,216	68,997	24.7
33	Gujarat	9,643,989	2,627,140	27.2
34	Delhi	2,554,149	1,255,574	49.2
35	Chandigarh	201,878	144,742	71.7
India		191,963,935	23,925,761	12.5
<i>Source : Census of India, 2001</i>				

Table 2 B
Statewise Number of Urban Households having Connectivity
to Closed Drainage for Waste Water Outlet in India - 2001

S.No.	State / UT	Total no. of urban households	No. of urban households having access to closed drainage	
			Number	%
1	Chandigarh	180,576	139,446	77.2
2	Gujarat	3,758,028	2,227,031	59.3
3	Sikkim	13,015	7,542	57.9
4	Delhi	2,384,621	1,232,435	51.7
5	Daman & Diu	12,251	5,624	45.9
6	Maharashtra	8,069,526	3,637,125	45.1
7	Punjab	1,489,694	669,867	45.0
8	Himachal Pradesh	143,113	62,278	43.5
9	Karnataka	3,556,960	1,481,056	41.6
10	Goa	138,461	52,758	38.1
11	Andhra Pradesh	4,173,639	1,503,538	36.0
12	Haryana	1,075,179	376,438	35.0
13	Tamil Nadu	5,898,836	2,038,758	34.6
14	Dadra & Nagar Haveli	11,190	3,810	34.0
15	Pondicherry	136,456	42,312	31.0
16	Uttaranchal	390,164	110,656	28.4
17	Uttar Pradesh	5,170,527	1,368,308	26.5
18	Jammu & Kashmir	390,411	99,644	25.5
19	Madhya Pradesh	2,794,858	684,855	24.5
20	Rajasthan	2,185,591	527,198	24.1
21	Jharkhand	1,060,178	252,243	23.8
22	Bihar	1,322,583	292,922	22.1
23	West Bengal	4,554,045	994,933	21.8
24	Orissa	1,087,248	213,238	19.6
25	Chhattisgarh	789,440	135,121	17.1
26	Meghalaya	90,568	13,597	15.0
27	Kerala	1,652,656	245,485	14.9
28	Arunachal Pradesh	48,114	6,207	12.9
29	Nagaland	66,716	8,074	12.1
30	Assam	715,185	70,356	9.8
31	A & N Islands	23,409	2,138	9.1
32	Mizoram	81,604	6,915	8.5
33	Tripura	122,343	8,269	6.8
34	Manipur	101,302	2,905	2.9
35	Lakshadweep	3,889	0	0.0
India		53,692,376	18,523,082	34.5

Source : Census of India, 2001

Table 2 C
Statewise Number of Rural Households having Connectivity
to Closed Drainage for Waste Water Outlet in India - 2001

S.No.	State / UT	Total no. of rural households	No. of rural households having access to closed drainage	
			Number	%
1	Chandigarh	21,302	5,296	24.9
2	Delhi	169,528	23,139	13.6
3	Daman & Diu	22,091	2,602	11.8
4	Goa	140,755	16,239	11.5
5	Sikkim	91,723	6,670	7.3
6	Gujarat	5,885,961	400,109	6.8
7	Himachal Pradesh	1,097,520	71,127	6.5
8	Andhra Pradesh	12,676,218	796,912	6.3
9	Kerala	4,942,550	285,001	5.8
10	Uttar Pradesh	20,590,074	1,088,618	5.3
11	Maharashtra	10,993,623	565,776	5.1
12	Uttaranchal	1,196,157	53,782	4.5
13	Tamil Nadu	8,274,790	354,499	4.3
14	Karnataka	6,675,173	285,507	4.3
15	Punjab	2,775,462	117,564	4.2
16	Nagaland	265,334	9,551	3.6
17	A & N Islands	49,653	1,672	3.4
18	Jammu & Kashmir	1,161,357	38,885	3.3
19	Dadra & Nagar Haveli	32,783	1,097	3.3
20	Arunachal Pradesh	164,501	5,387	3.3
21	Haryana	2,454,463	77,609	3.2
22	Rajasthan	7,156,703	213,963	3.0
23	Bihar	12,660,007	330,336	2.6
24	Orissa	6,782,879	172,977	2.6
25	Pondicherry	72,199	1,769	2.5
26	Meghalaya	329,678	7,983	2.4
27	Madhya Pradesh	8,124,795	156,991	1.9
28	Tripura	539,680	9,693	1.8
29	Manipur	296,354	4,917	1.7
30	Jharkhand	3,802,412	57,251	1.5
31	Chhattisgarh	3,359,078	47,706	1.4
32	West Bengal	11,161,870	153,821	1.4
33	Mizoram	79,362	1,077	1.4
34	Assam	4,220,173	37,153	0.9
35	Lakshadweep	5,351	0	0.0
India		138,271,559	5,402,679	3.9

Source : Census of India, 2001

CHAPTER III

Households With Open Drainage Facilities

The absolute number and the percentage of households having connectivity to open drainage for waste water outlet, in the country as a whole and in various states; for total, urban and rural areas separately, as per the Census of India, 2001; can be seen in Tables 3 A, 3 B and 3 C respectively. In every table, the states have been arranged in ascending order of the respective percentage furnished in the table. The important findings from these tables are given below :

I. All India - Percentage of households having connectivity to open drainage for waste water outlet

Total	:	33.9
Urban	:	43.4
Rural	:	30.3

II. State having the highest percentage of households having connectivity to open drainage for waste water outlet

Total	:	Haryana (63.9)
Urban	:	Uttar Pradesh (65.9)
Rural	:	Punjab (73.8)

III. State having the lowest percentage of households having connectivity to open drainage for waste water outlet

Total	:	Dadra & Nagar Haveli (11.2)
Urban	:	Daman & Diu (5.0)
Rural	:	Gujarat (6.9)

IV. States whose percentages are higher than or equivalent to the national average of households having connectivity to open drainage for waste water outlet

Total		Urban		Rural	
State / UT	%	State / UT	%	State / UT	%
Karnataka	34.0	Punjab	44.8	Uttaranchal	30.5
A & N Islands	35.2	West Bengal	45.3	Karnataka	31.1
Manipur	37.0	Chhattisgarh	45.8	Manipur	31.1
Uttaranchal	37.7	Andhra Pradesh	46.3	Bihar	32.2
Andhra Pradesh	37.9	Tripura	46.3	Nagaland	35.0
Maharashtra	38.8	Bihar	46.5	Andhra Pradesh	35.1
Mizoram	39.2	Jharkhand	48.6	Maharashtra	36.0
Nagaland	40.0	Arunachal Pradesh	50.4	Uttar Pradesh	59.7
Delhi	40.8	Madhya Pradesh	51.4	Delhi	60.9
Uttar Pradesh	60.9	Haryana	53.4	Chandigarh	66.8
Punjab	63.7	Manipur	54.3	Haryana	68.6
Haryana	63.9	Mizoram	54.5	Punjab	73.8
		Rajasthan	56.1		
		Jammu & Kashmir	56.3		
		Uttaranchal	59.9		
		Nagaland	60.1		
		Meghalaya	61.6		
		A & N Islands	65.0		
		Uttar Pradesh	65.9		

V. States whose percentages are lower than the national average of households having connectivity to open drainage for waste water outlet

Total		Urban		Rural	
State / UT	%	State / UT	%	State / UT	%
Lakshadweep	0.0	Lakshadweep	0.0	Lakshadweep	0.0
D & N Haveli	11.2	Daman & Diu	5.0	Gujarat	6.9
Gujarat	11.6	Chandigarh	12.7	D & N Haveli	8.8
Kerala	11.7	Kerala	16.0	Chhattisgarh	9.9
Daman & Diu	15.4	D & N Haveli	18.1	Kerala	10.2
Orissa	15.8	Gujarat	19.0	Orissa	12.3
Chhattisgarh	16.7	Goa	30.9	Assam	14.1
Assam	18.3	Tamil Nadu	35.5	West Bengal	14.5
Chandigarh	18.4	Sikkim	36.2	Jharkhand	16.2
Jharkhand	23.3	Pondicherry	37.1	Madhya Pradesh	17.9
West Bengal	23.4	Orissa	37.9	Pondicherry	18.1
Sikkim	25.8	Karnataka	39.3	Rajasthan	20.2
Goa	26.3	Delhi	39.4	Daman & Diu	21.1

Tripura	26.4	Maharashtra	42.5	A & N Islands	21.1
Himachal Pradesh	26.5	Himachal Pradesh	42.6	Goa	21.7
Madhya Pradesh	26.5	Assam	42.8	Tripura	21.9
Tamil Nadu	28.2			Arunachal Pradesh	22.8
Rajasthan	28.6			Tamil Nadu	23.1
Arunachal Pradesh	29.0			Mizoram	23.4
Pondicherry	30.5			Jammu & Kashmir	23.4
Jammu & Kashmir	31.7			Meghalaya	23.9
Meghalaya	32.0			Sikkim	24.3
Bihar	33.6			Himachal Pradesh	24.4

VI. Distribution of states by percentage of households having connectivity to open drainage for waste water outlet

i. Total

Percentage Range	No. of States	%age to total	Names of States
Below 15	4	11.4	Lakshadweep, D & N Haveli, Gujarat, Kerala
15 - 20	5	14.3	Daman & Diu, Orissa, Chhattisgarh, Assam, Chandigarh
20 - 25	2	5.7	Jharkhand, West Bengal
25 - 30	8	22.9	Sikkim, Goa, Tripura, Himachal Pradesh, Madhya Pradesh, Tamil Nadu, Rajasthan, Arunachal Pradesh
30 - 35	5	14.3	Pondicherry, J & K, Meghalaya, Bihar, Karnataka
35 - 40	6	17.1	A & N Islands, Manipur, Uttaranchal, Andhra Pradesh, Maharashtra, Mizoram
40 & above	5	14.3	Nagaland, Delhi, U. P., Punjab, Haryana
Total	35	100.0	

ii. Urban

Percentage Range	No. of States	%age to total	Names of States
Below 15	3	8.6	Lakshadweep, Daman & Diu, Chandigarh
15 - 25	3	8.6	Kerala, Dadra & Nagar Haveli, Gujarat
25 - 35	1	2.9	Goa
35 - 45	10	28.6	Tamil Nadu, Sikkim, Pondicherry, Orissa, Karnataka, Delhi, Maharashtra, Himachal Pradesh, Assam, Punjab
45 - 55	11	31.4	West Bengal, Chhattisgarh, Andhra Pradesh, Tripura, Bihar, Jharkhand, Arunachal Pradesh, Madhya Pradesh, Haryana, Manipur, Mizoram
55 - 65	5	14.3	Rajasthan, Jammu & Kashmir, Uttaranchal, Nagaland, Meghalaya
65 & above	2	5.7	A & N Islands, Uttar Pradesh
Total	35	100.0	

iii. Rural

Percentage Range	No. of States	%age to total	Names of States
Below 10	4	11.4	Lakshadweep, Gujarat, Dadra & Nagar Haveli, Chhattisgarh
10 - 20	7	20.0	Kerala, Orissa, Assam, West Bengal, Jharkhand, Madhya Pradesh, Pondicherry
20 - 30	12	34.3	Rajasthan, Daman & Diu, A & N Islands, Goa, Tripura, Arunachal Pradesh, Tamil Nadu, Mizoram, Jammu & Kashmir, Meghalaya, Sikkim, Himachal Pradesh
30 - 40	7	20.0	Uttaranchal, Karnataka, Manipur, Bihar, Nagaland, Andhra Pradesh, Maharashtra
40 - 50	0	0	Nil
50 - 60	1	2.9	Uttar Pradesh
60 & above	4	11.4	Delhi, Chandigarh, Haryana, Punjab
Total	35	100.0	

Table 3 A
Statewise Number of Households (Total) having Connectivity
to Open Drainage for Waste Water Outlet in India - 2001

S.No.	State / UT	Total no. of households	No. of households (total) having access to open drainage	
			Number	%
1	Lakshadweep	9,240	0	0.0
2	Dadra & Nagar Haveli	43,973	4,914	11.2
3	Gujarat	9,643,989	1,118,792	11.6
4	Kerala	6,595,206	770,183	11.7
5	Daman & Diu	34,342	5,273	15.4
6	Orissa	7,870,127	1,246,340	15.8
7	Chhattisgarh	4,148,518	694,186	16.7
8	Assam	4,935,358	901,628	18.3
9	Chandigarh	201,878	37,099	18.4
10	Jharkhand	4,862,590	1,131,148	23.3
11	West Bengal	15,715,915	3,685,306	23.4
12	Sikkim	104,738	27,034	25.8
13	Goa	279,216	73,336	26.3
14	Tripura	662,023	174,866	26.4
15	Himachal Pradesh	1,240,633	328,170	26.5
16	Madhya Pradesh	10,919,653	2,891,926	26.5
17	Tamil Nadu	14,173,626	4,000,944	28.2
18	Rajasthan	9,342,294	2,669,793	28.6
19	Arunachal Pradesh	212,615	61,731	29.0
20	Pondicherry	208,655	63,617	30.5
21	Jammu & Kashmir	1,551,768	492,155	31.7
22	Meghalaya	420,246	134,569	32.0
23	Bihar	13,982,590	4,697,088	33.6
24	Karnataka	10,232,133	3,475,862	34.0
25	A & N Islands	73,062	25,714	35.2
26	Manipur	397,656	147,229	37.0
27	Uttaranchal	1,586,321	597,929	37.7
28	Andhra Pradesh	16,849,857	6,386,496	37.9
29	Maharashtra	19,063,149	7,387,127	38.8
30	Mizoram	160,966	63,090	39.2
31	Nagaland	332,050	132,924	40.0
32	Delhi	2,554,149	1,041,655	40.8
33	Uttar Pradesh	25,760,601	15,700,507	60.9
34	Punjab	4,265,156	2,716,983	63.7
35	Haryana	3,529,642	2,256,740	63.9
India		191,963,935	65,142,354	33.9

Source : Census of India, 2001

Table 3 B
Statewise Number of Urban Households having connectivity
to Open Drainage for Waste Water Outlet in India - 2001

S.No.	State / UT	Total no. of urban households	No. of urban households having access to open drainage	
			Number	%
1	Lakshadweep	3,889	0	0.0
2	Daman & Diu	12,251	608	5.0
3	Chandigarh	180,576	22,878	12.7
4	Kerala	1,652,656	265,079	16.0
5	Dadra & Nagar Haveli	11,190	2,029	18.1
6	Gujarat	3,758,028	715,250	19.0
7	Goa	138,461	42,825	30.9
8	Tamil Nadu	5,898,836	2,091,773	35.5
9	Sikkim	13,015	4,717	36.2
10	Pondicherry	136,456	50,571	37.1
11	Orissa	1,087,248	411,813	37.9
12	Karnataka	3,556,960	1,398,895	39.3
13	Delhi	2,384,621	938,447	39.4
14	Maharashtra	8,069,526	3,430,112	42.5
15	Himachal Pradesh	143,113	60,909	42.6
16	Assam	715,185	305,951	42.8
17	Punjab	1,489,694	667,452	44.8
18	West Bengal	4,554,045	2,062,876	45.3
19	Chhattisgarh	789,440	361,947	45.8
20	Andhra Pradesh	4,173,639	1,931,098	46.3
21	Tripura	122,343	56,643	46.3
22	Bihar	1,322,583	614,475	46.5
23	Jharkhand	1,060,178	514,919	48.6
24	Arunachal Pradesh	48,114	24,230	50.4
25	Madhya Pradesh	2,794,858	1,437,251	51.4
26	Haryana	1,075,179	574,086	53.4
27	Manipur	101,302	54,974	54.3
28	Mizoram	81,604	44,493	54.5
29	Rajasthan	2,185,591	1,225,513	56.1
30	Jammu & Kashmir	390,411	219,858	56.3
31	Uttaranchal	390,164	233,637	59.9
32	Nagaland	66,716	40,120	60.1
33	Meghalaya	90,568	55,829	61.6
34	A & N Islands	23,409	15,214	65.0
35	Uttar Pradesh	5,170,527	3,408,110	65.9
India		53,692,376	23,284,582	43.4

Source : Census of India, 2001

Table 3 C				
Statewise Number of Rural Households having connectivity to Open Drainage for Waste Water Outlet in India - 2001				
S.No.	State / UT	Total no. of rural households	No. of rural households having access to open drainage	
			Number	%
1	Lakshadweep	5,351	0	0.0
2	Gujarat	5,885,961	403,542	6.9
3	Dadra & Nagar Haveli	32,783	2,885	8.8
4	Chhattisgarh	3,359,078	332,239	9.9
5	Kerala	4,942,550	505,104	10.2
6	Orissa	6,782,879	834,527	12.3
7	Assam	4,220,173	595,677	14.1
8	West Bengal	11,161,870	1,622,430	14.5
9	Jharkhand	3,802,412	616,229	16.2
10	Madhya Pradesh	8,124,795	1,454,675	17.9
11	Pondicherry	72,199	13,046	18.1
12	Rajasthan	7,156,703	1,444,280	20.2
13	Daman & Diu	22,091	4,665	21.1
14	A & N Islands	49,653	10,500	21.1
15	Goa	140,755	30,511	21.7
16	Tripura	539,680	118,223	21.9
17	Arunachal Pradesh	164,501	37,501	22.8
18	Tamil Nadu	8,274,790	1,909,171	23.1
19	Mizoram	79,362	18,597	23.4
20	Jammu & Kashmir	1,161,357	272,297	23.4
21	Meghalaya	329,678	78,740	23.9
22	Sikkim	91,723	22,317	24.3
23	Himachal Pradesh	1,097,520	267,261	24.4
24	Uttaranchal	1,196,157	364,292	30.5
25	Karnataka	6,675,173	2,076,967	31.1
26	Manipur	296,354	92,255	31.1
27	Bihar	12,660,007	4,082,613	32.2
28	Nagaland	265,334	92,804	35.0
29	Andhra Pradesh	12,676,218	4,455,398	35.1
30	Maharashtra	10,993,623	3,957,015	36.0
31	Uttar Pradesh	20,590,074	12,292,397	59.7
32	Delhi	169,528	103,208	60.9
33	Chandigarh	21,302	14,221	66.8
34	Haryana	2,454,463	1,682,654	68.6
35	Punjab	2,775,462	2,049,531	73.8
India		138,271,559	41,857,772	30.3

Source : Census of India, 2001

CHAPTER IV

Households With No Drainage Facilities

The absolute number and the percentage of households having no drainage connectivity for waste water outlet, in the country as a whole and in various states; for total, urban and rural areas separately, as per the Census of India, 2001; can be seen in Tables 4 A, 4 B and 4 C respectively. In every table, the states have been arranged in ascending order of the respective percentage furnished in the table. The important findings from these tables are given below :

I. All India - Percentage of households having no drainage connectivity for waste water outlet

Total	:	53.6
Urban	:	22.1
Rural	:	65.8

II. State having the highest percentage of households having no drainage connectivity for waste water outlet

Total	:	Lakshadweep (100.0)
Urban	:	Lakshadweep (100.0)
Rural	:	Lakshadweep (100.0)

III. State having the lowest percentage of households having no drainage connectivity for waste water outlet

Total	:	Chandigarh (9.9)
Urban	:	Sikkim (5.8)
Rural	:	Chandigarh (8.4)

IV. States whose percentages are higher than or equivalent to the national average of households having no drainage connectivity for waste water outlet

Total		Urban		Rural	
State / UT	%	State / UT	%	State / UT	%
Nagaland	54.7	Meghalaya	23.3	Goa	66.8
Tamil Nadu	54.9	Madhya Pradesh	24.1	Daman & Diu	67.1
Mizoram	55.8	A & N Islands	25.9	Manipur	67.2
Jammu & Kashmir	59.4	Jharkhand	27.6	Sikkim	68.4
A & N Islands	59.6	Nagaland	27.8	Himachal Pradesh	69.2
Sikkim	60.6	Tamil Nadu	30.0	Tamil Nadu	72.6
Daman & Diu	60.7	Goa	31.0	Jammu & Kashmir	73.2
Manipur	61.0	Bihar	31.4	Meghalaya	73.7
Gujarat	61.2	Pondicherry	31.9	Arunachal Pradesh	73.9
Bihar	62.0	West Bengal	32.9	Mizoram	75.2
Himachal Pradesh	62.8	Arunachal Pradesh	36.7	A & N Islands	75.5
Meghalaya	62.8	Mizoram	37.0	Tripura	76.3
Rajasthan	63.5	Chhattisgarh	37.0	Rajasthan	76.8
Arunachal Pradesh	65.5	Orissa	42.5	Pondicherry	79.5
Madhya Pradesh	65.8	Manipur	42.9	Madhya Pradesh	80.2
West Bengal	69.2	Tripura	46.9	Jharkhand	82.3
Jharkhand	70.4	Assam	47.4	Kerala	84.0
Tripura	70.9	D & N Haveli	47.8	West Bengal	84.1
D & N Haveli	77.7	Daman & Diu	49.1	Assam	85.0
Chhattisgarh	78.9	Kerala	69.1	Orissa	85.1
Orissa	79.3	Lakshadweep	100.0	Gujarat	86.3
Assam	79.6			D & N Haveli	87.9
Kerala	80.3			Chhattisgarh	88.7
Lakshadweep	100.0			Lakshadweep	100.0

V. States whose percentages are lower than the national average of households having no drainage connectivity for waste water outlet

Total		Urban		Rural	
State / UT	%	State / UT	%	State / UT	%
Chandigarh	9.9	Sikkim	5.8	Chandigarh	8.4
Delhi	10.1	Uttar Pradesh	7.6	Punjab	21.9
Punjab	17.8	Delhi	9.0	Delhi	25.5
Haryana	23.2	Chandigarh	10.1	Haryana	28.3
Uttar Pradesh	29.5	Punjab	10.2	Uttar Pradesh	35.0
Maharashtra	39.2	Haryana	11.6	Andhra Pradesh	58.6
Pondicherry	48.4	Uttaranchal	11.8	Maharashtra	58.9
Andhra Pradesh	48.4	Maharashtra	12.4	Nagaland	61.4
Karnataka	48.8	Himachal Pradesh	13.9	Karnataka	64.6

Goa	49.0	Andhra Pradesh	17.7	Uttaranchal	65.0
Uttaranchal	51.9	Jammu & Kashmir	18.2	Bihar	65.1
		Karnataka	19.0		
		Rajasthan	19.8		
		Gujarat	21.7		

VI. Distribution of states by percentage of households having no drainage connectivity for waste water outlet

i. Total

Percentage Range	No. of States	%age to total	Names of States
Below 15	2	5.7	Chandigarh, Delhi
15 - 30	3	8.6	Punjab, Haryana, Uttar Pradesh
30 - 45	1	2.9	Maharashtra
45 - 55	7	20.0	Pondicherry, Andhra Pradesh, Karnataka, Goa, Uttaranchal, Nagaland, Tamil Nadu
55 - 70	14	40.0	Mizoram, Jammu & Kashmir, A & N Islands, Sikkim, Daman & Diu, Manipur, Gujarat, Bihar, Himachal Pradesh, Meghalaya, Rajasthan, Arunachal Pradesh, Madhya Pradesh, West Bengal
70 - 85	7	20.0	Jharkhand, Tripura, D & N Haveli, Chhattisgarh, Orissa, Assam, Kerala
85 & above	1	2.9	Lakshadweep,
Total	35	100.0	

ii. Urban

Percentage Range	No. of States	%age to total	Names of States
Below 10	3	8.6	Sikkim, Uttar Pradesh, Delhi
10 - 20	10	28.6	Chandigarh, Punjab, Haryana, Uttaranchal, Maharashtra, Himachal Pradesh, Andhra Pradesh, Jammu & Kashmir, Karnataka, Rajasthan
20 - 30	6	17.1	Gujarat, Meghalaya, Madhya Pradesh, A & N Islands, Jharkhand, Nagaland
30 - 40	8	22.9	Tamil Nadu, Goa, Bihar, Pondicherry, West Bengal, Arunachal Pradesh, Mizoram, Chhattisgarh
40 - 50	6	17.1	Orissa, Manipur, Tripura, Assam, D & N Haveli, Daman & Diu
50 - 60	0	0.0	Nil
60 & above	2	5.7	Kerala, Lakshadweep
Total	35	100.0	

iii. Rural

Percentage Range	No. of States	%age to total	Names of States
Below 25	2	5.7	Chandigarh, Punjab
25 - 40	3	8.6	Delhi, Haryana, Uttar Pradesh,
40 - 55	0	0.0	Nil
55 - 70	11	31.4	Andhra Pradesh, Maharashtra, Nagaland, Karnataka, Uttaranchal, Bihar, Goa, Daman & Diu, Manipur, Sikkim, Himachal Pradesh
70 - 85	13	37.1	Tamil Nadu, Jammu & Kashmir, Meghalaya, Arunachal Pradesh, Mizoram, A & N Islands, Tripura, Rajasthan, Pondicherry, Madhya Pradesh, Jharkhand, Kerala, West Bengal
85 & above	6	17.1	Assam, Orissa, Gujarat, D & N Haveli, Chhattisgarh, Lakshadweep
Total	35	100.0	

Table 4 A				
Statewise Number of Households (Total) having No Drainage Connectivity for Waste Water Outlet - 2001				
S.No.	State / UT	Total no. of households	No. of households (total) having no drainage connectivity	
			Number	%
1	Chandigarh	201,878	20,037	9.9
2	Delhi	2,554,149	256,920	10.1
3	Punjab	4,265,156	760,742	17.8
4	Haryana	3,529,642	818,855	23.2
5	Uttar Pradesh	25,760,601	7,603,168	29.5
6	Maharashtra	19,063,149	7,473,121	39.2
7	Pondicherry	208,655	100,957	48.4
8	Andhra Pradesh	16,849,857	8,162,911	48.4
9	Karnataka	10,232,133	4,989,708	48.8
10	Goa	279,216	136,883	49.0
11	Uttaranchal	1,586,321	823,954	51.9
12	Nagaland	332,050	181,501	54.7
13	Tamil Nadu	14,173,626	7,779,425	54.9
14	Mizoram	160,966	89,884	55.8
15	Jammu & Kashmir	1,551,768	921,084	59.4
16	A & N Islands	73,062	43,538	59.6
17	Sikkim	104,738	63,492	60.6
18	Daman & Diu	34,342	20,843	60.7
19	Manipur	397,656	242,605	61.0
20	Gujarat	9,643,989	5,898,057	61.2
21	Bihar	13,982,590	8,662,244	62.0
22	Himachal Pradesh	1,240,633	779,058	62.8
23	Meghalaya	420,246	264,097	62.8
24	Rajasthan	9,342,294	5,931,340	63.5
25	Arunachal Pradesh	212,615	139,290	65.5
26	Madhya Pradesh	10,919,653	7,185,881	65.8
27	West Bengal	15,715,915	10,881,855	69.2
28	Jharkhand	4,862,590	3,421,948	70.4
29	Tripura	662,023	469,195	70.9
30	Dadra & Nagar Haveli	43,973	34,152	77.7
31	Chhattisgarh	4,148,518	3,271,505	78.9
32	Orissa	7,870,127	6,237,572	79.3
33	Assam	4,935,358	3,926,221	79.6
34	Kerala	6,595,206	5,294,537	80.3
35	Lakshadweep	9,240	9,240	100.0
India		191,963,935	102,895,820	53.6

Source : Census of India, 2001

Table 4 B				
Statewise Number of Urban Households having No Drainage Connectivity for Waste Water Outlet - 2001				
S.No.	State / UT	Total no. of urban households	No. of urban households having no drainage connectivity	
			Number	%
1	Sikkim	13,015	756	5.8
2	Uttar Pradesh	5,170,527	394,109	7.6
3	Delhi	2,384,621	213,739	9.0
4	Chandigarh	180,576	18,252	10.1
5	Punjab	1,489,694	152,375	10.2
6	Haryana	1,075,179	124,655	11.6
7	Uttaranchal	390,164	45,871	11.8
8	Maharashtra	8,069,526	1,002,289	12.4
9	Himachal Pradesh	143,113	19,926	13.9
10	Andhra Pradesh	4,173,639	739,003	17.7
11	Jammu & Kashmir	390,411	70,909	18.2
12	Karnataka	3,556,960	677,009	19.0
13	Rajasthan	2,185,591	432,880	19.8
14	Gujarat	3,758,028	815,747	21.7
15	Meghalaya	90,568	21,142	23.3
16	Madhya Pradesh	2,794,858	672,752	24.1
17	A & N Islands	23,409	6,057	25.9
18	Jharkhand	1,060,178	293,016	27.6
19	Nagaland	66,716	18,522	27.8
20	Tamil Nadu	5,898,836	1,768,305	30.0
21	Goa	138,461	42,878	31.0
22	Bihar	1,322,583	415,186	31.4
23	Pondicherry	136,456	43,573	31.9
24	West Bengal	4,554,045	1,496,236	32.9
25	Arunachal Pradesh	48,114	17,677	36.7
26	Mizoram	81,604	30,196	37.0
27	Chhattisgarh	789,440	292,372	37.0
28	Orissa	1,087,248	462,197	42.5
29	Manipur	101,302	43,423	42.9
30	Tripura	122,343	57,431	46.9
31	Assam	715,185	338,878	47.4
32	Dadra & Nagar Haveli	11,190	5,351	47.8
33	Daman & Diu	12,251	6,019	49.1
34	Kerala	1,652,656	1,142,092	69.1
35	Lakshadweep	3,889	3,889	100.0
India		53,692,376	11,884,712	22.1
<i>Source : Census of India, 2001</i>				

Table 4 C				
Statewise Number of Rural Households having No Drainage Connectivity for Waste Water Outlet - 2001				
S.No.	State / UT	Total no. of rural households	No. of rural households having no drainage connectivity	
			Number	%
1	Chandigarh	21,302	1,785	8.4
2	Punjab	2,775,462	608,367	21.9
3	Delhi	169,528	43,181	25.5
4	Haryana	2,454,463	694,200	28.3
5	Uttar Pradesh	20,590,074	7,209,059	35.0
6	Andhra Pradesh	12,676,218	7,423,908	58.6
7	Maharashtra	10,993,623	6,470,832	58.9
8	Nagaland	265,334	162,979	61.4
9	Karnataka	6,675,173	4,312,699	64.6
10	Uttaranchal	1,196,157	778,083	65.0
11	Bihar	12,660,007	8,247,058	65.1
12	Goa	140,755	94,005	66.8
13	Daman & Diu	22,091	14,824	67.1
14	Manipur	296,354	199,182	67.2
15	Sikkim	91,723	62,736	68.4
16	Himachal Pradesh	1,097,520	759,132	69.2
17	Tamil Nadu	8,274,790	6,011,120	72.6
18	Jammu & Kashmir	1,161,357	850,175	73.2
19	Meghalaya	329,678	242,955	73.7
20	Arunachal Pradesh	164,501	121,613	73.9
21	Mizoram	79,362	59,688	75.2
22	A & N Islands	49,653	37,481	75.5
23	Tripura	539,680	411,764	76.3
24	Rajasthan	7,156,703	5,498,460	76.8
25	Pondicherry	72,199	57,384	79.5
26	Madhya Pradesh	8,124,795	6,513,129	80.2
27	Jharkhand	3,802,412	3,128,932	82.3
28	Kerala	4,942,550	4,152,445	84.0
29	West Bengal	11,161,870	9,385,619	84.1
30	Assam	4,220,173	3,587,343	85.0
31	Orissa	6,782,879	5,775,375	85.1
32	Gujarat	5,885,961	5,082,310	86.3
33	Dadra & Nagar Haveli	32,783	28,801	87.9
34	Chhattisgarh	3,359,078	2,979,133	88.7
35	Lakshadweep	5,351	5,351	100.0
India		138,271,559	91,011,108	65.8
<i>Source : Census of India, 2001</i>				

Annexure

Concepts and Definitions

1. Urban Areas

In the Census of India 2001, the definition of urban area adopted is as follows:

- a. All places with a municipality, corporation, cantonment board or notified town area committee, etc.
- b. A place satisfying the following three criteria simultaneously:
 - i. a minimum population of 5,000;
 - ii. at least 75 per cent of male working population engaged in non-agricultural pursuits; and
 - iii. a density of population of at least 400 per sq. km. (1,000 per sq. mile).

For identification of places which would qualify to be classified as 'urban' all villages, which, as per the 1991 Census had a population of 4,000 and above, a population density of 400 persons per sq. km. and having at least 75 per cent of male working population engaged in non-agricultural activity were considered.

2. Household

A 'household' is usually a group of persons who normally live together and take their meals from a common kitchen unless the exigencies of work prevent any of them from doing so. Persons in a household may be related or unrelated or a mix of both. However, if a group of unrelated persons live in a census house but do not take their meals from the common kitchen, then they are not constituent of a common household. Each such person was to be treated as a separate household. The important link in finding out whether it was a household

or not was a common kitchen. There may be one member households, two member households or multi-member households.

3. Institutional Household

A group of unrelated persons who live in an institution and take their meals from a common kitchen is called an Institutional Household. Examples of Institutional Households are boarding houses, messes, hostels, hotels, rescue homes, jails, ashrams, orphanages, etc. This category of households covers only those households where a group of unrelated persons live in an institution and share a common kitchen.

4. Connectivity of Waste Water Outlet

- i. **Connectivity to Closed Drainage:** A house is considered as having connectivity to closed drainage if it has water outlet connected to a closed drainage to carry away the wastewater generated by the household(s) living in it.
- ii. **Connectivity to Open Drainage:** A house is considered as having connectivity to open drainage if it has water outlet connected to an open drainage to carry away the wastewater generated by the household(s) living in it.
- iii. **No Drainage Connectivity:** A house where wastewater outlet is not connected to any drainage system to carry away the wastewater is included in this category.