

## CHAPTER - 3

### EXISTING SITUATION ANALYSIS

**3.3.1.** The State Finance Commission had evolved service Norms and Operation & Maintenance levels for core civic services and possible areas of privatisation of these services in local bodies. The details are as follows:

#### **Sample Methodology:**

**3.3.2.** A few samples of local bodies were taken on the guidelines given by the State Planning Commission wherein the districts were grouped under the following 5 major heads depending on economic character or geographical features viz. urban concentration and industrial, agricultural prosperity, trading and commercial, dry and hilly regions. Of the total 22 districts at the time of sampling, 12 were selected in this process for the study. Further, under each district various categories of local bodies i.e. Municipal Corporations, Municipalities, Town Panchayats and Panchayat Unions had been selected at random so as to have a proportionate distribution of all the categories. The districts and the number of local bodies selected under each category are given in Table 3.7.

**Table 3.7 Sample Districts and Number of Local bodies**

District/ Class	Corporation	Municipalities	Town Panayats	Panchayat Unions	Village Panchchayat	Total
Coimbatore		1	5	4	16	26
The Nilgiris		1	2	2	8	13
Madurai	1					1
Tiruchirapalli	1	1	3	7	14	26
Nagapattinam Quaide Milleth		2	2	6	17	27
PM Thevar		1	2	4	8	15
Chennai	1					1
Chengai MGR		2	4	8	16	30
Kanyakumari		1	5	2	6	14
Dharmapuri		1	2	3	9	15
Salem	1					1
North Arcot Ambedkar				2	6	8
<b>Total Selected</b>	<b>4</b>	<b>10</b>	<b>25</b>	<b>38</b>	<b>100</b>	<b>177</b>
<b>Total Existing</b>	<b>6</b>	<b>104</b>	<b>635</b>	<b>384</b>	<b>12583</b>	<b>13712</b>
<b>Sample %</b>	<b>66</b>	<b>10</b>	<b>4</b>	<b>10</b>	<b>0.79</b>	<b>1.29</b>

Note: Data was collected for 35 Panchayat Unions (covering about 1200 Village Panchayats) and 90 Village Panchayats individually.

**3.3.3.** The list of local bodies selected is given in the Appendices 95 and 96. Primary information was obtained through a structured questionnaire dealing with basic information, operation and maintenance, staffing and service levels, which was mailed to all the sample local bodies. Field visits were made and informal discussions were held with the officials of local bodies and local citizens to capture their perceptions of existing levels of services and their expectations. To substantiate primary data collected through questionnaire and visits, secondary information on various aspects were cross checked at the Directorate of Municipal Administration, Directorate of Town Panchayats, Directorate of Rural Development, TWAD Board, Tamilnadu Electricity Board, Highways and Rural Works Department and other funds utilizing departments. The shortage and nonconformity of data were made good through the SFC questionnaire and through estimation made from out of the existing service levels based on the relative parameters available.

**3.3.4.** Based on the information analyzed from the local bodies, certain service level indicators were generated with regard to physical performance, operation and maintenance for all the categories. These indicators are used as the basis for assessing the existing situation and for recommending norms for various service sectors. The sample analysis for each service is given below:

## WATER SUPPLY:

### i) Average per capita supply per day:

**3.3.5.** This has been calculated for 1995 population for the sample categories of local bodies. The average per capita supply per day varies with different categories of local bodies. Among Corporations, it is 45 LPCD in Salem and 99 LPCD in Madurai with an average supply of 74 LPCD. In the sample Municipalities, it varies between 47 LPCD and 79 LPCD with an average of 69 LPCD. In Town Panchayats, the minimum per capita supply is 30 liters and the maximum is 66 liters with an average of 42 liters whereas in case of Village Panchayats, it ranges between 6 to 29 liters with an average of 22 LPCD. The average supply level indicated above within each category of local body can be considered as an indicator of the existing supply level. In this context, it may be noted that as per the TWAD Board Standards, the minimum water supply levels should be 70 to 135 LPCD in Urban areas and 40 LPCD in rural areas.

### ii) Mode of Supply:

**3.3.6.** The general mode of water supply are by way of House Service Connection (HSC - metered or unmetered) public stand post, public hand pump and occasionally through lorry tankers. Water supply through HSC and public stand post constitutes the protected water supply. Though 100% HSC coverage is desirable both for levels of service to the public and for recovery of user charge fees, it is not possible on account of lack of adequate source and for want of strong distribution net work. In fact, Government have restrained in some cases giving additional HSCs to minimize water supply consumption. In such cases, the local bodies should provide public fountains/ stand posts and hand pumps in adequate number at the appropriate locations. The Government of Tamilnadu has prescribed norms of about 150 persons per hand pump. The dependency ratio is elaborated in the Table 3.8.

**Table 3.8**      **Dependency ratio for Water Supply**

Category	Population dependent on House Service Connection %			Persons per Standpost/Hand pump		
	Average	Minimum	Maximum	Average	Minimum	Maximum
Corporations	59	36	78	127	54	227
Municipalities	32	18	41	184	99	216
Town Panchayats	16	8	29	164	99	221
Village Panchayats	2	1	4	136	93	183

### iii) Storage Capacity Adequacy:

**3.3.7.** Table 3.9 given below helps to determine the number of times the tank/reservoir has to be filled in to meet the water demand and to time staggered supply to enable maximum and

equitable supply to the entire town. This also indicates the stand by capacity available in cases of emergency and also helps to estimate pumping machinery and power equipments. It may be noted that Central Public Health and Environmental Engineering Organization (CPHEEO) has prescribed a minimum of 15% Storage Capacity Adequacy ratio.

**Table 3.9 Storage adequacy and Distribution Network**

Category	Storage capacity to Quantity of water produced - %			Distribution Network Coverage %		
	Average	Minimum	Maximum	Average	Minimum	Maximum
Corporations	90	42	199	77	74	79
Municipalities	21	6	37	47	19	87
Town Panchayats	47	7	102	53	34	75
Village Panchayats	43	22	62	14	0	42

(Distribution / Road Length \*100)

**iv) Distribution Network Density:**

**3.3.8.** The Table 3.9 given above expressed in percentage, is a ratio of the total distribution net work length to the total road length within the local body limits. Though this is an indicator of the extent of physical coverage of the water supply distribution system, it does not give any indication as to which part of the town is poorly connected.

**v) Establishment - O&M Expenditure - per capita and per MLD**

**3.3.9.** Please see Table below 3.10. It may be noted that higher O&M expenditure per capita does not necessarily imply higher service levels, as for example, in case of Anna and MGR Districts, the average per capita supply is 32 LPCD and cost of provision of service is Rs.13.69 per capita per annum whereas for 31 LPCD in Coimbatore district the cost per capita is only Rs.3.05 per annum. In contrast, the reduced O&M expenditure per MLD water supplied definitely reveals the efficiency levels. These figures could be utilized in water pricing on quantity basis.

**Table 3.10 Water Supply Maintenance**

Category	O & M Expenditure per Capita - Rs.			O & M Expenditure per MLD of Water Supplied - Rs.Lakhs		
	Average	Minimum	Maximum	Average	Minimum	Maximum
Corporation	41	23	57	6.42	2.97	11.69
Municipalities	53	28	77	7.57	5.93	10.12
Town Panchayat	17	9	33	3.75	2.45	4.98
Village Panchayat	10	5	16	1.90	1.10	2.41

(The average normative O&M expenditure per capita per annum on water supply work is around Rs.12/- in rural areas and Rs.40-70 in urban areas.)

(The average normative O&M Expenditure per MLD of water supply per annum is around 5.90 lakhs in rural areas and Rs.10 lakhs in urban areas)

**3.3.10.** Besides the above statistical interpretation, the issues that emerged during the course of discussion in the field were of the inability of the local body to supply water regularly and of fixed quantity due to erratic power supply and low voltage. In most of the Town Panchayats and Panchayat Unions, regular maintenance staff is not available, casual staff engaged at meager salary are not reliable. Added to this are the inadequacy of sufficient public standpost, ban on house service connection, poor distribution network and shortage of water quantity.

#### **SEWERAGE AND SANITATION:**

##### **i) Households covered with a safe disposal system:**

**3.3.11.** Households having access to either Under Ground Drainage (UGD), Septic Tank, Low Cost Sanitation (LCS) or to public convenience are considered to have access to a Safe Disposal System. A sample indication is given in the table below:

**Table 3.11 Coverage with Safe disposal system**

Category	Average	Minimum	Maximum
<b>% House Holds (HHs) Covered by safe disposal system</b>			
Corporation	44	28	84
Municipalities	23	8	56
Town Panchayat	41	18	73
Village Panchayats	3	1	5
<b>% House Holds (HHs) Covered by UGD</b>			
Corporation	26	0.00	78
Municipalities	3	0.00	11
Town Panchayat	0	0.00	0
Village Panchayats	0	0.00	0
<b>% HHs Covered by Septic tanks</b>			
Corporation	16	2	32
Municipalities	13	4	35
Town Panchayat	24	14	43
Village Panchayats	0.14	0	0.48
<b>% HHs Covered by LCS</b>			
Corporation	2	0	4
Municipalities	2	1	3
Town Panchayat	13	0.35	27
Village Panchayats	0.07	0	0.15

**ii) Operation and Maintenance expenditure per capita per annum:**

**3.3.12.** This indicator of the cost of providing service to a population can be taken to arrive at the user price to be charged, which could be in the form of a surcharge on water tax or a separate component of property tax. In few of the local bodies, a separate head of account for this sector is not provided. Hence the per capita expenditure as assessed for the sample local bodies given below (Table 3.12) may not be indicative of the actual costs. For Maintenance, the average staff per 10000 population in the categories of technical, skilled and unskilled for various types of local bodies is given in Table 3.12.

**Table 3.12 Maintenance Cost for Sewerage and Sanitation**

Category	<u>Expenditure per capita per annum - Rs.</u>			<u>Average Staff per 10,000 population</u>		
	Average	Minimum	Maximum	Technical	Skilled	Unskilled
Corporations	40	15	77	0.86	1.60	11.02
Municipalities	48	3	161	0.21	0.28	0.44
Town Panchayats	15	6	28	0.20	0.25	2.13
Village Panchayats	0.20	0	0.30	0.01	NA	0.57

**3.3.13.** Other issues and observation that emerged during the course of field visits and discussion are the fact that low cost sanitation is yet to improve in design, construction and acceptability; individual septic tanks are the major mode of disposal for most urban local bodies and underground facilities is available, as per TWAD Board information, only in 19 towns and even there, the coverage is limited.

## **SOLID WASTE MANAGEMENT**

**3.3.14.** In this case, the service level has been assessed by the collection performance of waste, availability of dustbins, vehicle fleet and conservancy staff.

### **i) Per capita Waste Generation**

**3.3.15.** The quantity of solid waste generated varies among local bodies depending upon the character of the town, whether it is say, tourist, pilgrim centre, market, industrial etc. The sources of waste are generally the household kitchens, hotels, kalyana mandapams, markets, hospitals and industries.

**3.3.16.** Per capita is the total waste generated divided by the population. But except for weightment in corporations (that too, not regularly) in no other local body, it is weighed at all. In case of rural local bodies, it is mostly the household waste burnt or used as a cattle field. However, for assessing the minimum garbage collection facility, the Task force has assumed an average of 50 gms. per capita per day.

**Table 3.13 Per Capita Waste Generation and Collection Performance**

Category	Per capita waste generated per day (gms)			Collection performance (%)		
	Average	Minimum	Maximum	Average	Minimum	Maximum
Corporations	447	333	687	83	74	90
Municipalities	365	223	650	66	62	69
Town Panchayats	163	120	194	38	16	61
Village Panchayats	50	50	50	1	0	3

**ii) Collection Performance**

**3.3.17.** It is the ratio of total waste collected and disposed to the total waste generated per day in the local area. Since in most cases, the waste is not weighed, it is estimated by the number of trips made daily between the collection points and disposal yards and the capacity of vehicles. Ideally 80% collection performance is desirable.

**iii) Dustbin Spacing:**

**3.3.18** Availability of dustbins at appropriate locations saves time of the collecting staff and helps in efficient use of vehicles. Table below presents the average distance between two dustbins, and if it is very high then it results in the dumping of waste outside house and street corners resulting in unhygienic environment and also makes the collection tedious and time consuming. In urban areas, the average dustbin spacing should not be more than 100 meters. In rural areas as they exist, they are either absent or negligible.

**Table 3.14 Dustbin Spacing and Vehicle Adequacy**

Category	Distance between Dustbins (meters)			Vehicle Capacity Adequacy Ratio (%)		
	Average	Minimum	Maximum	Average	Minimum	Maximum
Corporations	816	230	2151	31	11	68
Municipality	407	172	656	34	21	58
Town Panchayat	2649	368	8638	24	0	56
Village Panchayat	-	-	-	0	0	0



#### iv) Vehicle Capacity Adequacy

**3.3.19.** Not merely availability of vehicles, but their efficient use and proper maintenance are the parameters on which collection performance depends. Most of the smaller local bodies employ animal or hand drawn vehicles. In the table above, the hand drawn vehicles have not been included. Vehicle Capacity Adequacy Ratio (%) is the total vehicle capacity available to total waste generated per day.

**Table 3.15 Road length per conservancy staff**

Category	Road length per Conservancy staff (Meters)			Conservancy Staff per 1000 Population (No.)		
	Average	Minimum	Maximum	Average	Minimum	Maximum
Corporations	280	145	364	0.53	0.43	0.59
Municipalities	423	369	533	0.45	0.35	0.61
Town Panchayats	11445	1322	34550	9.42	0.97	24.82
Village Panchayats	22231	14887	29576	0.02	0	0.05

**3.3.20.** Efficiency in street cleaning primarily depends on the number of conservancy staff. Public Health Department prescribes the norm of 400-600 meters of road length per sweeper depending on the density of population.

**3.3.21.** Also given here below are some additional information or indicators like Expenditure per Ton of Waste Collected and O&M Expenditure per capita:

**Table 3.16 Some Expenditure on Solid Waste Management**

Category	Expenditure per Ton Waste collected (Rs. in lakhs)			O&M Expenditure per Capita (Rs.)		
	Average	Minimum	Maximum	Average	Minimum	Maximum
Corporations	1.63	0.18	4.24	39.09	8.37	91.56
Municipalities	2.92	1.33	4.71	68.31	21.49	129.46
Town Panchayats	2.66	0.24	5.00	18.27	1.70	40.24
Village Panchayats	1.03	1.03	1.03	0.16	0.16	0.16

## ROADS AND STORM WATER DRAINS:

### i) Extent and Category of Roads

3.3.22. Roads as a necessary infrastructure for economic development and for traffic movement is beyond doubt. The condition of roads depend on its regular maintenance and presence of storm water drain. During the field visits, it was assessed that 30 to 50% of the BT/Concrete surfaced roads are in fair to poor condition. In Town Panchayats and Panchayat Unions, most of the roads are either mud or WBM and suffer from lack of any maintenance. The extent and grade of road in various categories of local bodies is given in the table below:

Table 3.17 Average % of BT/Concrete surface, WBM and others

Category	BT/Concrete	WBM	Others
Corporations	81	12	7
Municipalities	76	18	6
Town Panchayats	25	31	44
Village Panchayats	19	44	37
Panchayat Unions	19	36	35

### ii) Staff and O&M Expenditure per km. of Road length

3.3.23. The minimum number of staff required for maintenance of roads as per Highways and Rural Works Department standards is 3 persons per 10 km. The mix of staff would be Technical staff - 1 per 100 km; skilled - 1 per 25 km; and unskilled - 2 per 8 km. The amount spent annually on maintenance of one km. of road is as follows:

Table 3.18 O&M on Roads

Category	Staff per km. of Road Length (Nos.)			O&M Expenditure per km. of Road length (Rs. lakhs)		
	Average	Minimum	Maximum	Average	Minimum	Maximum
Corporations	0.58	0.05	1.12	0.36	0.07	0.70
Municipalities	0.11	0.03	0.27	0.15	0.06	0.33
Town Panchayats	0.01	0	0.04	0.03	0.02	0.06
Village Panchayats	0.04	0.01	0.10	0.22	0.11	0.32
Panchayat Unions	0.04	-	-	0.037	-	-

## STORM WATER DRAINAGE NETWORK

**3.3.24.** Storm Water Drains are required for channelisation of storm water. Failing this, there will be water stagnation which in turn would pose problems of water borne disease, inconvenience to traffic and pedestrian movements, besides reducing the life of the road. Atleast the main roads should be provided with drains and the minor arterial roads should be given proper gradient to enable the water flow into the drains:

**Table 3.19 Network and Types of Drains**

Category	Storm Water Drainage Network (%)			Percentage of Pucca Drains		
	Average	Minimum	Maximum	Average	Minimum	Maximum
Corporations	38	11	72	98	91	100
Municipalities	38	10	74	44	23	59
Town Panchayats	42	1	84	71	32	100
Village Panchayat s	5	0	17	-	-	-

### ii) O & M Expenditure per km. of Drain length

**3.3.25.** The major O&M expenditure is in the form of cleaning, de-siltation and minor repair every year before the monsoon. The expenditure depends upon the availability of funds apart from the physical and climatic conditions.

**Table 3.20 O & M Expenditure on Drains**

Category	O&M Expenditure per km. of Storm Water Drains (Rs.)		
	Average	Minimum	Maximum
Corporations	9685	7617	11752
Municipalities	2655	0	7596
Town Panchayats	4002	1037	9453
Village Panchayats	-	-	-

## STREET LIGHTING:

It is like a road furniture to enable better visibility at nights.

### i) Types of Streetlights and Spacing:

3.3.26. Minimum spacing required between successive lamp posts is dependent on road width, traffic volume, the use (commercial/residential or industrial) and ofcourse on the availability of funds. For a normal two lane road, preferred spacing is 30 meters.

**Table 3.21 Spacing and Types of Streetlights**

Category	Types of Streetlights (%)			Streetlight spacing (meters)		
	Sodium vapor lamps	Tube lights	Others	Average	Minimum	Maximum
Corporation	13	77	10	28	23	35
Municipality	12	87	1	39	28	49
Town Panchayat	4	91	5	55	44	63
Village Panchayat	1	89	10	59	37	109

### ii) Length per staff and O & M Expenditure per light:

3.3.27. Quality of maintenance depends upon the capacity of staff and the lights per staff is an indicator of their work load. In Town Panchayat and Panchayat Union, the maintenance is done by the State Electricity Board on behalf of the local body. On discussion with Electricity Board staff it was ascertained that the desired norm should be 90 fixtures per person (Technical staff - 1 and Helpers - 10 per 1000 fixtures). The O&M Expenditure on streetlighting is mainly current charges and replacement of spares. The average life of a tube light is 4 months and that of sodium vapor lamp is four years, under normal power supply conditions. The average annual O&M expenditure on streetlighting varies between Rs.450/- to Rs.950/- depending on the type of fixtures, including Rs.18 to Rs.39 towards the establishment.

**Table 3.22 O & M Expenditure in Streetlights**

Category	Lights per staff (nos)			O&M Expenditure per light (Rs.)		
	Average	Minimum	Maximum	Average	Minimum	Maximum
Corporations	571	70	1541	599	272	998
Municipalities	236	62	323	645	514	918
Town Panchayats	1758	699	3475	297	192	375
Panchayat Unions	3006	95	8185	68	23	127
Village Panchayats	NA	-	-	103	86	122

**3.3.28.** The Existing Situation Analysis of Core Civic Services in local bodies is completely based on the sample survey. However scientifically the samples may have been chosen and not withstanding all efforts to reflect the reality, this methodology suffers from the lacunae of over-generalization. Therefore, in the following pages, universal figures have been adapted wherever available and the inferences drawn from the sample study have been moderated by interacting and cross-checking with the line departments/agencies. It remains a fact undisputed, that perhaps for the first time an exhaustive attempt has been made to analyse all relevant socio, economic and environmental parameters related to Civic Services.