

7. WATER SUPPLY & SANITATION

Overview

Human Health and productivity depend on the provision of safe drinking water and sanitation. During successive plan periods, the water supply sector has received high priority which is reflected on the impressive coverage achieved so far. The widening gap between demand and supply, scarce resources and sustainability issues are the present major challenges in the sector.

Tamil Nadu is dependant on rainfall for its water supply. It has no perennial rivers and geologically too, the State is mostly covered by hard rock formations where the availability of ground water is uncertain. The population of the State as per 2001 census is 62.11 million out of which 27.24 million is urban and 34.87 million is rural population. The decadal growth stands at 11.19%. With fast urbanisation and increasing expectancy of the people, the demand for water is on the increase but the available resource is scarce. This calls for more efficient use of resources and more reliable delivery system.

Drinking Water Supply Problem

Chennai City - Drinking Water Supply Position in 2004

During the severe drought in 2004 i.e. upto October 2004, since all the sources supplying water to the Chennai City were dry and there was no water received from Kandaluru under the Telugu Ganga Project, about 100 MLD of water was transported from distant sources like Gummidipoondi, Minjur, Tamaraipakkam, Periyapalayam, Poonamallee, Mamandur-Palur, Thiruporur, Karunguzhi etc. covering a distance of about 120 to 150 km. and the total quantity transported was 23,439.79 ML during the period from 27.6.2003 to 9.11.2004. Water supply to Chennai City was maintained through mobile tankers, by way of filling 14,602 No. of stationary tanks and street supplies daily. The Government undertook this massive and onerous task of distribution through the Chennai Metropolitan Water Supply and Sewerage Board at a cost of Rs.196.69 crore during the year 2004-05.

The New Veeranam Project which was launched in February 2003 at an estimated cost of Rs.720.00 crores was commissioned by October 2004 and provided a life line for the city. The full supply of 180 MLD of water to Chennai City through the New Veeranam Project commenced on 13.10.2004.

Present Water Supply Position

In the catchments area of the main city water supply sources viz. Poondi, Cholavaram and Redhills, the rainfall during the year 2004 was 1171 mm against the normal rainfall of 1400mm. The storage of water available in the main surface sources of Chennai City as on 1.1.2005 was 1,859 Mcft against the total capacity of 7,412 Mcft. On the same day last year. i.e. in 2004, the storage was only 272 Mcft. In Chembarambakkam Tank which is a supplementary source to Chennai City water supply, the storage as on 1.1.2005 was 405 Mcft against the capacity of 3,645 Mcft. Consequent of improvements in the water level, after the rainfall during Oct-Dec 2004, the ground water from the Well Fields was extracted upto 95 ML per day.

Anticipating that Chennai city may face another water scarcity since the storage in the reservoirs supplying water to the city had not improved after the

South-West monsoon in 2004, Tamil Nadu has requested Andhra Pradesh to ensure Krishna Water Supply to Chennai City as per the agreement already entered into. However, till 28.2.2005, only about 2.702 TMC feet of water has been received, as against the 12 TMC feet of water to be released.

With the water available in the surface sources and receipt of water from Kandaleru Reservoir under the Telugu Ganga Project and also water received from the New Veeranam Project, the city water supply is maintained at an average of 600 ML on alternate days, besides 60 ML being supplied to the Manali Industries and Bulk consumers daily. Water is received by consumers through the pipeline covering about 89% of the city area. Further, for the streets where water is not reaching through the pipeline, mobile water supply through tankers is being organised by making 2,650 trips (each of 9 K L) per trip.

Desalination -Sea Water Desalination Plant

Keeping in view the chronic problem of water scarcity in Chennai and adjoining areas due to frequent failure of the monsoons, Government decided to set up a sea water desalination plant as a viable source for all seasons for supply of potable water to the residents of Chennai and adjoining areas. Accordingly CMWSS Board has proposed to construct a Sea Water Desalination Plant of 100MLD/200MLD capacity at Minjur on Design, Build, Own, Operate and Transfer (DBOOT) basis with any of bidders technology from their own funds. The required land of 60 acres has also been identified at the northern outskirts of Chennai City near Minjur.

Accordingly tender was floated on 18.11.2004 fixing the due date as 16.2.2005, and 4 bids were received. The technical bids were opened and evaluation of the bids is under process. After completion of technical/financial evaluation, the responsive bidders by the consultants decision on the capacity of the plant to be built will be taken by the Competent Authority and the work order will be issued to the successful developer. The successful developer has to construct and commission the plant in stages within 15 months from the date of issue of work order.

Drinking Water Supply Problem outside Chennai

The normal service level norms for drinking water supply to the rural and urban population are as follows:

Civic Status	Per capita supply
Corporations	110 lpcd
Municipalities	90 lpcd
ErstwhileTown Panchayats	70 lpcd
Rural Villages	40 lpcd

The drinking water supply to the people of the State is effected through surface as well as sub surface sources. The sources for most of the water supply schemes are dependant on the surface and sub surface flows of seventeen major rivers flowing within the state. Ground water sources like bore wells, open wells, etc are the main water sources for most of the water supply schemes for rural habitations. The details are as follows:

Civic Status	Total No.	Served from Ground water source	Served from River source
Rural habitations	81787	69652	12135
ErstwhileTown Panchayats	611	231	380
Municipalities	102	21	81
Corporations	5 (excl. Chennai)	0	5

Continuous failure of monsoon successively in the last four years have led to inadequate surface and sub surface flows leading to the scarcity situation in the State.

Rural water supply programme

Water Supply Schemes to all the 66,631 habitations in Tamilnadu have been completed as per 1992 resurvey. However the factors like over exploitation of available ground water resources, quality degradation, monsoon failure etc. causing slippage in the coverage status of water supply. Hence a fresh survey to assess the status of water supply in rural areas was carried out in 2003 as per the guidelines of Government of India. The status of water supply in rural areas as per the resurvey was as under.

Total number of habitations	81,787
Fully covered (40 lpcd & above)	29,067
Partially covered (10 to 39 lpcd)	40,930
Not covered (0 to 9 lpcd)	11,790

From the year 2003 - 2004 water supply schemes to rural areas have been taken up based on the results of resurvey 2003. Accordingly the status of water supply in rural areas as on 1-4-2004 was as under.

Total number of habitations	81,787
Fully covered (40 lpcd & above)	35727
Partially covered (10 to 39 lpcd)	36777
Not covered (0 to 9 lpcd)	9283

During the year 2004 -2005 the following water supply schemes have been taken up in rural areas at an outlay of Rs. 660.00 crores

- 6520 partially covered and not covered habitations have been covered through individual power pump schemes and combined water supply schemes.
- To relieve the stress and strain that women folk face in extracting water through hand pumps, 10,000 Mini Power Pump schemes have been provided in rural areas.
- Under Hon'ble PM's announcement Programme, 7784 hand pump scheme have been completed and 9772 traditional drinking water sources have been revived
- Under "SWAJALDHARA" programme with community participation 1170 schemes were implemented.

- To ensure sustainability of water supply sources, 400 recharge structures have been taken up under PMGY programme and Accelerated Rural Water supply Programme.

Urban water supply programme

The following are the norms adopted for the provision of water supply to urban towns

Civic Status	Status of water Supply		
	Good	Average	Poor
Corporation	110 & above	70 to 109	Below 70
Municipalities	90 & above	50 to 89	Below 50
ErstwhileTown Panchayats	70 & above	40 to 69	Below 40

Adopting the above norms the status of water supply in urban towns as on 1-4-2004 was as follows.

Civic Status	Total Nos.	Status of water Supply		
		Good	Average	Poor
Corporation	5	--	5	--
Municipalities	102	50	28	24
ErstwhileTown Panchayats	611	275	190	146
Total	718	325	223	170

During the financial year 2004-2005, water supply schemes to 110 urban towns have been continued apart from taking up improvement schemes to 50 urban towns at an outlay of Rs.200.00 crores. Water supply scheme to 55 urban towns have been completed including 11 towns completed under Accelerated Urban Water Supply Programme.

Sanitation

According to Census 2001, the position in regard to distribution of Households by type of latrine within the House, Percentage of Households having water closet facility, and Households not having latrine is set out in the table below:

Distribution of Households by Type of Latrine within the House

Sl. No.	Total number of households	Total	%	Rural	%	Urban	%
	Type of Latrine within the house						
S.1	Total	14,173,626	100.0	8,274,790	100.0	5,898,836	100.0
S.2	Pit latrine	1,035,315	7.3	377,122	4.6	658,193	11.2
S.3	Water closet	3,291,248	23.2	609,067	7.4	2,682,181	45.5
S.4	Other latrine	656,257	4.6	201,730	2.4	454,527	7.7
S.5	No latrine	9,190,806	64.8	7,086,871	85.6	2,103,935	35.7

Percentage of Household having water closet facility, Households not having latrine

Sl.No.	Name	% of Households having water closet facilities	% of Households not having latrine
[1]	[2]	[3]	[4]
	INDIA	18.02	63.59
	TAMIL NADU	23.22	64.84
1.	Thiruvallur	29.97	48.50
2.	Chennai	67.01	10.22
3.	Kancheepuram	30.11	53.84
4.	Vellore	20.33	68.41
5.	Dharmapuri	10.92	81.24
6.	Tiruvannamalai	9.99	83.54
7.	Viluppuram	8.24	85.30
8.	Salem	16.51	73.02
9.	Namakkal	15.55	74.87
10.	Erode	21.21	67.60
11.	The Nilgiris	26.64	57.82
12.	Coimbatore	32.62	52.68
13.	Dindigul	14.75	75.75
14.	Karur	16.32	75.86
15.	Tiruchirappali	26.72	63.21
16.	Perambalur	6.18	88.12
17.	Ariyalur	6.15	89.58
18.	Cuddalore	18.57	73.91
19.	Nagapattinam	18.41	74.41
20.	Thiruvarur	18.13	74.30
21.	Thanjavur	24.09	67.63
22.	Pudukottai	11.91	80.41
23.	Sivaganga	17.26	74.23
24.	Madurai	31.16	53.40
25.	Theni	16.18	72.99
26.	Virudhunagar	13.36	77.40
27.	Ramanathapuram	14.08	76.93
28.	Thoothukkudi	25.30	65.08
29.	Tirunelveli	21.26	69.29
30.	Kanniyakumari	32.24	34.85

Urban Sanitation

Apart from the Solid Waste Management issues gripping the urban local bodies, inadequate sanitation is a serious problem in urban areas of Tamil Nadu and the people living below the poverty line are the most affected and deprived of this basic services in this regard. Shortage of sanitation facilities is a common problem to all; however, it is more serious for women and children.

Realizing the need for improved sanitation facilities in urban areas, schemes for Integrated Sanitation Complexes have been taken up for implementation by the Government of Tamil Nadu with financial assistance of under TNUDP-II in order to provide public sanitation facilities viz. toilets with bathing and washing areas. The facilities have been planned for those who are living below poverty line in slum areas or where open area defecation is a problem. All Municipal Corporations (Except Chennai) and all the Municipalities and Town Panchayats (Erstwhile) are implementing the scheme. The programme also envisages support from the existing community organisations and structures to provide the maintenance. The special feature of the programme is active participation of the user group and this is ensured from the preliminary stages of the programme viz. selection of project sites till handing over the sanitary complex to user groups for maintenance by them.

Based on the feedback and response from the elected representatives, Commissioners of Municipal Corporations and Municipalities, it was decided to construct small sanitary complexes with 10 seats in lesser extent of spaces so that more number of slums can be covered.

To promote personal hygiene and community hygiene and to stop the obnoxious practice of open defecation and to improve the toilet habits of school going children, a Society viz., Tamil Nadu Society for Awareness Creation in areas of Urban Hygiene and Sanitation was created, with a corpus fund of Rs.2.5 crores by the Government. This Society is working to improve the awareness on urban hygiene and sanitation and to eradicate the obnoxious practice of open defecation / Urination.

Rural Sanitation

The Hon'ble Chief Minister launched a "Clean Village Campaign" in Tamil Nadu which triggered a revolution in rural sanitation and led to the State winning encomiums at national level. The Panchayat Raj Institutions of Tamil Nadu cornered maximum number of the coveted Nirmal Gram Puraskar Awards worth Rs.48 lakhs. 15 Village Panchayats received Clean Village Campaign Awards in the State. 12 Village Panchayats and one Block Panchayat consisting of 10 panchayats, received Nirmal Gram Puraskar Awards at the National level. Melpuram Block in Kanniyakumari District was the only Block selected at the national level for the award.

Tamil Nadu received 35% of the first ever Nirmal Gram Puraskar Awards announced by the Government of India. His Excellency, the President of India proclaimed that Tamil Nadu is progressing as a model State in Sanitation and quoted the achievement of Keerampalayam Village Panchayat in Cuddalore District and Gandhi Nagar Special Village Panchayat in Vellore District as examples of excellence in sanitation. The whole country hailed Tamil Nadu's achievement in rural sanitation. The Clean Village Campaign Award and Nirmal Gram Puraskar Award have become unique examples in empowering the Panchayat Raj Institutions (PRIs) socially, culturally and economically. All these efforts have contributed in achieving an increase in rural sanitation coverage in the State from 15% in 2001 to 54% in 2005. The status of rural sanitation has been dealt in Chapter 3.1 (Rural Development)

Other Programmes

National River Action Plan

Under National River Action Plan, the abatement of pollution in river Cauvery in Tiruchy, Erode, Bhavani, and Kumarapalayam towns have been continued at a cost of Rs.25.05 Crores under Government of India Assistance. The work in respect of Tiruchy was completed, The works in respect of Erode and Kumarapalayam stretch will be completed by June 2005. Detailed Project Report for Interception and Diversion works for Bhavani town at a cost Rs. 2.64 crores and detailed project report for Pallipalayam town at a cost of 7.72 crores are awaiting sanction from Government of India.

National River Conservation Programme

Under National River Conservation Programme, the Underground Sewerage Schemes in Tirunelveli, Thanjavur, Mayiladuthurai, Tiruchy, Karur and Inam-Karur, have been taken up for implementation at a cost of Rs. 292.51 crore. The schemes are implemented on cost sharing basis by both the central and state Government, beneficiary urban local body, and public contribution.

National Lake Conservation Programme

Under National Lake Conservation Programme, the revival of Kodaikanal Lake has been taken up at a total cost of Rs. 9.13 crores. The interceptions, diversion and construction of STP works at a cost of Rs. 3.47 crores is taken up by TWAD Board. The revival of lake with "bio remediation process" is implemented by PWD Authorities at a cost of Rs. 4.65 crores. The other components viz. Low Cost Sanitation and Community Toilet works are done by Local Body at a cost of Rs. 1.01 crores. However this scheme is kept in abeyance due to Court's stay order.

Underground Drainage Scheme to District Head Quarter Towns

The Tamil Nadu Urban Sewerage Master Action Plan with the objective of providing under ground sewerage schemes to 5 Corporation, 102 Municipalities, and 367 urban town panchayats (erst while) has been prepared at a tentative estimated cost of Rs. 4500.00 crores. It has been programmed to take up the works in phases. Accordingly as I phase all the district head quarters will be given priority and detailed project reports have been prepared and sent to Commissioner of Municipal Administration for submissions to Government.

Tenth Five Year Plan - Objectives, Outlay and Programmes

The main objectives of the Tenth Five Year Plan are:

Rural Water Supply

- Full coverage of all the rural habitations in the State with a minimum of 40 lpcd supply and 55 lpcd where ever possible
- Full and independent coverage of habitations where socially marginalised groups live
- Sustainability of the systems and sources
- Water quality monitoring and surveillance through a Catchment Area approach
- Cost effective technology to the quality affected habitations
- Introduction of dual water supply schemes
- On site treatment

- House Services Connection
- Adoption of demand driven approach, user participation and cost recovery
- Coverage of schools, anganwadis, noon meal centres and primary health centres with water supply
- Awareness campaign on the use of safe drinking water, water conservation, ground water management
- Redefining the role of the Government/ Governmental agencies from 'provider' to 'facilitator'
- Rain water harvesting, establishment of ground water recharge structures for source sustainability

Rural Sanitation

- Shift from allocation based approach to demand driven approach
- Coverage of the rural population with individual/cluster toilets
- Abolition of manual scavenging by converting dry latrines into pour flush latrines
- Safe disposal of domestic liquid and solid waste integrated with disposal of night soil
- Coverage of rural schools with sanitation facilities
- Intensive IEC campaign and human resource development
- Facilitating setting up of Rural Sanitary Marts at nearest points
- Introduction of cost effective technologies in the construction of sanitary facilities
- Soft loans through institutional finance for the construction of rural latrines
- Extending house service connections in the rural areas

Urban Water Supply

- To cover the towns with poor service level on a priority basis
- Toning up of the existing water supply scheme to derive full benefit
- Waste water management including recycling and reuse of waste water
- Energy audit to improve the performance of electrical installations
- Improved accounting improvements
- Knowledge upgradation
- Sustainability through rain water harvesting and recharging techniques and conservation of water
- Standardisation of operation and maintenance procedures
- Periodical water quality monitoring

Urban Sewerage

- Integrating sanitation with water supply programme
- Steps to treat effluent before it enters the water courses.
- Master Plan to cover the urban towns with underground sewerage scheme. Adoption of alternate technology for safe disposal and recycling of waster water

State Budgetary Support for the Tenth Five Year Plan

(Rs. in Crores)

Sl. No.	Departments/ Institutions	State Outlay	Extra Budgetary Provisions		Total
			Loan Component	Externally Aided Projects	
1.	2.	3.	4.	5.	6.
1.	CMWSSB	252.36	656.49	96.37	1005.22
2.	TWAD Board				
	Rural Water Supply	750.00	300.00	703.63	1753.63
	Rural Sanitation	-	50.00	-	50.00
	Urban Water Supply	400.00	204.65	500.00	1104.65
	Urban Sanitation	200.00	100.00	-	300.00
	Total	1350.00	654.65	1203.63	3208.28
3.	NRAP/NRCP Schemes (TWAD)	586.50	-	-	586.50
Grand Total		2188.86	1311.14	1300.00	4800.00

Annual Plan 2002-03

An amount of Rs.88273.11 lakhs was proposed for Water Supply and Sewerage Sector for the year 2002-03. Against this the actual expenditure incurred was Rs.66245.32 lakhs.

Annual Plan 2003-04

An amount of Rs.75235.01 lakhs was proposed for the year 2003-04 for the Water Supply & Sewerage Sector. As against this, the expenditure was anticipated to be around Rs.63011.91 lakhs.

Annual Plan 2004-05

An amount of Rs.75878.09 lakhs was proposed for the year 2004-05 for the Water Supply & Sewerage Sector. As against this, the anticipated expenditure is estimated at Rs.100143.40 lakhs.

Annual Plan 2005-06

For the year 2005-06 an amount of Rs.68195.25 lakhs was proposed. The department wise details are as follows:

Chennai Metropolitan Water Supply & Sewerage Board

Chennai Water Supply Augmentation Project-I

Chennai Water Supply Augmentation Project - I (New Veeranam Project) to draw 190 mld raw water from Veeranam Lake located in Cuddalore District, treat and convey 180 mld treated water for a distance of about 230 km and distribute to Chennai City was implemented at an estimated cost of Rs.720 crore under five different packages.

The treated water pipeline was commissioned by pumping water from the bore wells drilled in the Neyveli Aquifer under the Drought Contingency Plan to meet the water scarcity in Chennai City and 60 to 75 mld of water was drawn from April 2004 to June 2004, using the New Veeranam pipeline,. The quantity was later stepped up to 90 mld in stages. A total quantity of 7546 ML was extracted and supplied from April 2004 to 13th October 2004 from these bore wells. From 13.10.2004 onwards raw water is being drawn from Veeranam Lake at the rate of 190 mld and after treatment 180 mld of water is conveyed and distributed to Chennai City and it is being continued till date without any interruption. Total quantity of water drawn from Veeranam lake from 13.10.2004 to 28.02.2005 is 871 mcft. From this date (13.10.2004), water drawal from bore wells in Neyveli Aquifer was stopped.

In regard to quality of water, the total dissolved solids (TDS) level is only ranging from 100 to 600 PPM. Hence, the quantity of water in the Neyveli Aquifer is well within the drinking water standard and there is no change in the quality even after pumping.

The New Veeranam Scheme has been executed and commissioned as a fast track project in record time. The New Veeranam Project would be an useful additional water supply source to Chennai City for all the time.

Second Chennai Water Supply Project

The Second Chennai Water Supply Project was taken up during February, 1996, with the World Bank Assistance. The revised cost of Project is Rs.7787.89 million with a World Bank Loan Assistance of U.S.\$ 86.50 million. The financing pattern for the project is as follows: i) IBRD Loan 65.50% of the project cost, ii) Govt. of Tamil Nadu Grant 17.25% of the project cost and iii) Board's internal generation 17.25% of the project cost. The project was granted extension and the revised scheduled date of closing was fixed as 31.3.2004. The components are i) Improvements to the 16 sewage pumping stations, ii) Construction of water distribution stations (7 Nos.), iii) Transmission main to convey water to the various water distribution stations (36 Kms.), iv) Strengthening of existing water distribution system in 11 Zones for a length of 660 Kms. v) Water conservation - Leak detection and Rectification in the water distribution system (in three Phases-3, 4 & 5), (vi) Technical assistance & Training - Consultancy Services. All the works have been completed except house hold pilot metering.

Chennai Water Supply Augmentation Project - II

The objective of this project is to augment the city water supply by intercepting the rain water runoff into the sea by the construction/rehabilitation of Checkdams across Cooum, Adyar and Palar Rivers and transport the water to city from Kolavoy lake and Vayalur checkdam. This project consist of 6 Nos. of scheme components. The works envisaged under this project are to be implemented by PWD and CMWSSB. The components of the works done by respective Departments are as follows.

The components of the scheme in respect of CMWSSB are : (1) Laying pipe line to convey 20 MLD raw water from the intake point at Vayalur Checkdam upto the collection sump at Mangalam WTP for a distance of about 20 Km., (2) Laying pipe line to convey 20 MLD raw water from the intake point at Kolavoy lake upto the

collection sump at Mangalam WTP for a distance of about 20 Km. and (3) Construction of water treatment plant for the treatment of 40 MLD of raw water.

The components of the scheme in respect of PWD are (1) Construction of 4 checkdams across Adyar river at Nandampakkam, Manapakkam, Anakaputhur and Cowl bazaar. At present it has been decided to take up the construction of checkdams only at two places i.e., at Nandampakkam and Manapakkam, (2) Construction of checkdam across Palar river at Vayalur and (3) Rehabilitation of checkdams at Kannapalayam and Paruthipattu across Cooum river.

PWD has furnished the DPRs for the following works (i) Construction of Checkdams across Adyar at Nandambakam and Manapakkam. (ii) Construction of Checkdams across Palar at Vayalur. (iii) Rehabilitation of Checkdams across Cooum at Paruthipattu and Kannapalayam. The DPRs are under Scrutiny by CMWSSB. CMWSSB has completed the preliminary investigation and survey works for drawal of water from Kolavoy lake and also from Vayalur Checkdam. PWD has informed that only 5 mld of water can be drawn only for 90 days from Kolavoy lake. As this is not cost effective, Government are being addressed to drop this component. PWD has furnished the action plans for all the other Checkdam works. The detailed estimates for drawal and conveyance of water from Vayalur checkdam to Mangalam Treatment Plant for Water Treatment Plant at Mangalam have been prepared. Tenders are being called for for the above Works.

Chennai Water Supply Augmentation Project – I -Extention Works (Drawal of Sub-Surface Water From The River Kollidam)

Foreseeing the possibility that Veeranam lake not having adequate storage during years of below normal rainfall, it was proposed to implement a scheme to tap sub-surface water from Kollidam river bed and pump the same to city by utilizing the infrastructures constructed under New Veeranam Project. The detailed project report was prepared and the major works involved are finalized at an estimated cost of about Rs.300 crore. The works involved are construction of 6 collector wells, providing turbine pumpsets, construction of collection sump and common sump, supply and laying of pipeline from the collector wells to the collection sumps and then to a common sump and the conveying main to Sethiathope. The total length of pipe laying work involved within the Kollidam River is about 43 Km. Further, the total length of pipeline to be laid from the common sump upstream of Lower Anicut to Sethiathope is about 67 Km.

The water pumped from the 6 collector wells through the pumping and conveying system to Sethiathope would be conveyed through the Chennai Water Supply Augmentation Project's infrastructures created under the New Veeranam project from Sethiathope to Chennai, which is now functioning. By this arrangement, it is expected that 150 MLD to 180 MLD of water will be made available continuously by suitable operating methodology by drawing water from Veeranam lake whenever sufficient water is available and when water is not available in the Veeranam lake, water will be drawn from the sub-surface of river Kollidam under the proposed project and also by operating the Bore wells installed in Neyveli Aquifer to meet the water supply needs of Chennai City.

530 mld Water Treatment Plant at Chembarambakkam

Two Water Treatment Plants one at Redhills of 300 mld capacity and another at Kilpauk of 270 mld capacity were functioning in the City region. From September/October 2004 the 180 mld capacity Water Treatment Plant at Vadakuthu is added under CWSAP (New Veeranam Project) and the total treatment capacity is 750 mld. Krishna Water from Andhra Pradesh is to be treated in two different locations. For treating the first stage of Krishna Water, one treatment plant of 300 mld capacity has been constructed at Redhills and commissioned in 1996. In order to treat additional water to be received from Krishna River, under Telugu Ganga Project, additional treatment capacity of 530 mld is under construction at Chembarambakkam with part assistance from French Government. It is expected that this Plant will be commissioned by July.2005.

Prevention of overflow into City Water Ways

The main objective of this project is to prevent sewage water entering into the storm water drain, river courses and water ways. The various works involved to arrest sewage over flows into the city water ways are rerouting, diversion and shifting of sewer main, providing sewer main, forcemain, construction of road side pumping station and providing house sewer connections. The total project cost for 24 works is Rs. 488.10 lakhs. All works completed except one road crossing work.

Rerouting of 900 mm dia water main from Gangadeeswarar Koil Street to Harris Road junction of Pantheon Road

The work of rerouting of 900mm dia CI water main from Gangadeeswarar Koil Street to Harris Road contains laying of water main for a length of 1600m. So far 92% of the work has been completed. The work will be completed by March 2005.

Valasaravakkam Sewerage Scheme

Govt. of Tamil Nadu had entrusted the consultancy work of formulating a sewerage system in Valasaravakkam panchayat in March 1998. The work was completed

Valasaravakkam water supply scheme

Government have accorded administrative approval for Rs.21.92 crores providing water supply facilities to various local bodies by utilising borrowing funds from TNUDF and accordingly works have been carried out in the adjacent 12 urban local bodies. Work will be completed by March 2005.

Effluent conveyance system

This component originally envisaged pumping of secondary treated sewage from Koyambedu and conveying it to Kodungaiyur through a 900mm dia DI pipe line to be laid over distance of 16.4 km to Kodungaiyur where TT/RO Plant was proposed for sewage renovation and supply the permeate to industries at Manali. All works completed

Permeate conveyance system

The Permeate from the Sewage Renovation Plant (Territory Treatment/Reverse Osmosis) would be conveyed to the 12 industries at Manali for their use for various purposes such as cooling, process, boiler teed and others. 100 mld of permeate could be conveyed through mains of size 200mm dia to 1000mm dia to be laid for length of about 3.9 km. Work completed except hydro testing

Third Chennai Project

The CMWSSB has proposed to take up further systemic improvement projects in water supply, both for Chennai city and Adjacent Urbanised Local Bodies as a "Third Chennai Project" with World Bank assistance. In order to improve further the sources, works are proposed for deepening and desilting of Ambattur tank, Korattur tank and Madhavaram tank and for Rehabilitation of Porur tank besides formation of Checkdams. It is also proposed to install water meters to all the consumers to achieve sustainable revenue.

The following are the components of works envisaged in the project costing Rs.7500.00 Millions (or) US\$ 150 Millions

Sl. No.	Component	Cost	
		Rs. in Million	US\$ in Million
1.	Strengthening of Water Distribution System in the left out 5 zones	1500.00	30.00
2.	Infrastructure facility to draw additional ground water from Araniyar Kortaliar Basin	1500.00	30.00
3.	Information System & Technology Planning (ISTP)	100.00	2.00
4.	Geographic Information System (GIS)	300.00	6.00
5.	Unaccounted for water in the left out areas in Chennai city	950.00	19.00
6.	Water supply infrastructure facilities in the Adjacent Urbanised Areas (AUA) and Distant Urbanised Areas (DUA)	165.00	3.30
7.	Sewage Treatment Plants in Seven Urban Local Bodies	485.00	9.70
8.	Construction of Checkdam across Kortalayar river near Thirukandalam and Refurbishment of Vallur Anaicut across Kortalaiyar river and provision of regulators	875.00	17.50
9.	Deepening and desilting of Ambattur tank, Korattur tank and Madhavaram tank Rettaieri	75.00	1.50
10.	Rehabilitation of Porur tank under city water supply augmentation project-II	50.00	1.00
11.	Installation of Water meters to all consumers to achieve sustainable revenue	1200.00	24.00
12.	Improvements to the existing three conduits from Redhills reservoir to Kilpauk Treatment Plant.	300.00	6.00
	TOTAL	7500.00	150.00

Plan Outlay

The Plan programmes proposed the year 2005-06 under the Head 'Water Supply and Sanitation' are as follows:

		(Rs. in lakhs)
Sl. No.	Name of the Programme	Outlay for 2005-06
1.	Loan for Third Chennai Water Supply Project	0.01
2.	Water Supply Sewage Scheme through assistance from HUDCO and TUFIDCO	500.00
3.	Share Capital Assistance for Chennai Water Supply Augmentation Project - I	7000.00
4.	Share Capital Assistance for Chennai Water Supply Augmentation Project - II	3133.00
5.	Share Capital Assistance for Desalination Plant	0.01
6.	Grant to Tamil Nadu Water Investment Corporation Limited for Desalination Project	25.00
7.	Grants to Third Chennai Project	0.01
8.	Water Supply to Chennai City Scheme	25.50
Total		10683.53

Tamil Nadu Water Supply and Drainage Board

Rural Water Supply

The status of water supply in rural areas as on 1-4-2005 is as follows:

Total number of habitations	81,787
Fully covered (40 lpcd & above)	42,227
Partially covered (10 to 39 lpcd)	32,319
Not covered (0 to 9 lpcd)	7,241

During the year it has been decided to implement following schemes under Rural water supply programme, assigning Priority to habitations which falls under the category of having service level less than 10 lpcd and partially covered habitation. Schemes to ensure sustainability of the sources will also be taken up for implementation. For quality affected habitations, where there is no reliable source nearby, onsite treatment plant will be provided in order to provide potable water to fulfill the minimum needs. The outlay proposed for the year 2005-2006 for rural water supply programme would be around Rs. 600.00 crores.

- 6500 rural habitations will be covered either with IPP and through CWSS
- 5000 Mini power pumps will be installed in rural areas.
- To ensure sustainability of drinking water sources 1250 recharge structures will be provided.
- Under *Swajaldhara* programme it is proposed to take up 362 schemes with community contribution.
- It is programmed to complete 40 combined water supply scheme and 52 new combined water supply scheme which are under formulation.
- Installation of onsite treatment to treat and provide potable water to habitations for which the sources are affected by quality parameters.

The anticipated expenditure for the year 2005-06 for the above programmes would be around Rs.600.00 crores.

Urban Water Supply

There 6 Corporations, 151 Municipalities, and 562 special grade village panchayats. in the state. Of these as of now, 51 Municipalities and 292 special grade village panchayats are fully covered and the remaining 5 Corporations excluding Chennai, 100 Municipalities, and 270 Special grade village panchayats are partially covered.

During the year 2005-2006 ongoing schemes in 110 towns comprising 1 Corporation, 14 Municipalities, and 95 erstwhile town panchayats (now special grade village panchayats) including the works taken up under Accelerated Urban Water Supply Programme, will be continued apart from taking new water supply improvement schemes to 50 urban towns. It has been programmed to complete the works and commission the water supply improvement scheme for 60 towns.

The outlay proposed for Urban water supply programme for the year 2005-2006 , would be Rs. 200.00 crores which includes a provision of Rs. 25.00 crores for the schemes under implementation under Accelerated Urban Water Supply Programme.

Urban Sewerage

The programme for the year 2005-2006 in respect of urban sewerage schemes is as under. The outlay proposed for urban sewerage scheme is Rs. 300.00 crores.

- Continuing the ongoing works under National River Action Plan for the abatement of Pollution in river Cauvery, in Kumarapalayam, Bhavani and Pallipalayam towns. It is programmed to Complete the works in these towns during 2005-06.
- Continuing the ongoing works in Tirunelveli, Thanjavur, Mayiladuthurai, Trichy, Karur and Inam Karur under National River Conservation programme.
- It is programmed to complete the works in all the above Towns, during 2005-06, continuing the ongoing works of the revival of Kodaikanal Lake under National River conservation Programme. The Project is programmed to be completed during 2005-06.
- Taking up Under Ground Sewage Scheme(UGSS) to 5 towns namely Ambur, Ranipet, Walajapet, Tiruchendur and Rameshwaram under NRCD.
- To take up UGSS to 24 district Headquarter towns during 2005-06.

Plan Outlay

The Plan programmes proposed the year 2005-06 under the Water Supply and Sanitation Sector are as follows:

		(Rs. in lakhs)
Sl. No.	Name of the Programme	Outlay for 2005-06
1.	Implementation of Tamil Nadu Water Supply Project for Rural Areas	0.01
2.	Capital grant to TNUDF for implementing underground drainage project under National River Conservation Project	560.51
3.	Repayment of principle to TUFIDCO Rural Water Supply	0.01
4.	Grants for the execution of accelerated Urban Water Supply Programme	1250.00
5.	Rural Water under PMGY Scheme	1100.00
6.	Rural Water Supply under MNP	27400.00
7.	Grants for implementation of Tamil Nadu Water Supply and Sanitation Projects in Rural Areas under World Bank Assistance	6250.03
8.	Provision for Rain Water Harvesting Facilities	0.01
9.	Share Capital Assistance for repayment of principle to LIC towards Rural Water Supply Scheme	0.01
10.	Share Capital Assistance for repayment of principle to HUDCO towards Rural Water Supply Scheme	0.01
11.	Upgradation of standard of Administration recommended by 12 th Finance Commission for Augmentation of traditional water sources	0.01
12.	Rural Water Supply under MNP-SCP Component	13700.00
Total		50260.60

Municipal Administration Department

The overall administration of 6 Municipal Corporations, 102 Municipalities and 49 Third Grade Municipalities is the responsibility of Municipal Administration Department. The Department's activities and programmes have been set out in detail in Chapter 6.2. (Urban Development).

Chennai Metropolitan Development Plan

In order to upgrade the infrastructure on a fast track mode, CMDA has prepared an infrastructure investment plan for Chennai Metropolitan Area and the plan is implemented since 2003. In the sectors of Transport, Electricity, Housing, Water Supply and Sewerage, Drainage and Solid Waste Management etc., infrastructure is planned to be provided / upgraded. An amount of Rs.300.00 lakhs is proposed for sewage facilities in Chennai Region. An amount of Rs.800.00 lakhs is also proposed as Capital Grant to CMA for assistance to Local Bodies in Chennai Region for Solid Waste Management.

Capital Grant to ULBs for Water Supply Scheme

An amount of Rs.2154.03 lakhs has been proposed as Capital Grant to Urban Local Bodies for Water Supply Scheme.

Programme for Cleaning Water bodies in Municipal Areas

It has been proposed to undertake improvement and augmentation of water sources in lake/ tank in 7 Municipalities viz. Vellore, Avadi, Ambattur, Tindivanam, Karaikudi, Paramakudi, Mayiladuthurai at an estimated cost of Rs.500.00 lakhs.

Loans to New Tiruppur Area Development Corporation Limited (NTADCL)

A token provision of Rs.1000/- is made in the Annual Plan 2005-06 as loan to New Tiruppur Area Development Corporation Limited, Chennai.

Plan Outlay

The Plan programmes proposed the year 2005-06 under Water Supply and Sanitation Sector are as follows:

(Rs. in lakhs)		
Sl. No.	Name of the Programme	Outlay for 2005-06
1.	CMDP - Capital grants to CMDP - CMA for sewage facilities in Chennai Region	300.00
2.	CMDP - Capital grants to CMA for Assistance to local bodies in Chennai Region for solid waste mangement	800.00
3.	Capital grants to Urban Local Bodies for Water Supply Scheme	2154.03
4.	New Tiruppur Water Supply Scheme	0.01
5.	Programme for cleaning water bodies in Municipal Areas	500.00
6.	Subordinate debt to Tamil Nadu Water Investment Corporation Limited for investment in NTADCL as equity	0.01
7.	Loans to Municipal Corporation and Municipalities for Water Supply Schemes	0.01
Total		3754.06

Public Works Department (Krishna Water)

The Government of Tamil Nadu entered into a historical agreement with the Government of Andhra Pradesh on 18.4.1983 for meeting the drinking water requirement in the Chennai City according to which the Government of Andhra Pradesh shall deliver 12 TMC ft. of water excluding the transmission loss of 3 TMC ft. of water at the Tamil Nadu Border over a period of 8 months in a year. The component of the project falling within Tamil Nadu limit is called "Krishna Water Supply Project" and that in Andhra Pradesh limits is called "Telugu Ganga Project".

Within the Tamil Nadu border, Krishna Water Supply Project was started in 1983 at an estimated cost of Rs.196.04 Crore and implemented in 1991.

Plan Outlay

The Plan programmes proposed the year 2005-06 under the 'Water Supply and Sanitation' Sector are as follows:

(Rs. in lakhs)		
Sl. No.	Name of the Programme	Outlay for 2005-06
1.	Construction of Dam for storage of Krishna Water	1000.00
2.	Formation of canal for brining water from Krishna River	0.01
3.	Water Supply to Chennai City from Krishna River	138.19
Total		1138.20

Special Village Panchayats Department

The Tamil Nadu Panchayats Act, 1994 has been amended on 1st October 2004, to bring into being, a category of Special Village Panchayats covering 562 erstwhile Town Panchayats. The amendment has taken care to ensure that the special character of these local bodies are retained while they are given an

opportunity to avail themselves of the resources and become eligible for funding under various rural development programmes of the rural sector.

117 Special Village Panchayats provided water supply by creating additional sources to the tune of Rs.9.23 crores which contributed also to mitigating the drought situation.

720 Integrated Sanitation Complexes for women and children with toilet, washing and bathing facilities were constructed at appropriate locations to meet the needs of economically disadvantaged sections of the society at a cost of Rs.18.72 Crores. These complexes are being maintained by the "User Groups".

Plan Outlay

The Plan programmes proposed the year 2005-06 under 'Water Supply and Sanitation' Sector are follows:

(Rs. in lakhs)		
Sl. No.	Name of the Programme	Outlay for 2005-06
1.	Sampoorna Grameen Rozgar Yojana for Special Village Panchayat	1787.98
2.	Indira Awwas Yojana for Special Village Panchayat	194.31
3.	Improvement of Kutcha houses which are unable to dwelt in under Indira Awwas Yojana for Special Village Panchayat	85.10
4.	Indira Awwas Yojana under Special Component plan for Special Village Panchayat	291.47
Total		2358.86

Annual Plan 2005-06 outlay for 'Water Supply and Sanitation' Sector

A sum of Rs.68195.25 lakhs has been proposed for "Water Supply and Sanitation" as shown below for the year 2005-06.

(Rs. in lakhs)					
Name of the Department	Sewerage Schemes	Urban Water Supply Schemes	Rural Water Supply Schemes	Other Schemes (Including SCP)	Total
1. Chennai Metropolitan Water Supply & Sewerage Board		10683.53			10683.53
2. Tamil Nadu Water Supply and Drainage Board	560.52	2350.01	33650.03	13700.04	50260.60
3. Municipal Administration Department	1100.00	2654.06			3754.06
4. Public Works Department (Krishna Water)		1138.20			1138.20
5. Special Village Panchayats Department			2358.86		2358.86
Total	1660.52	16825.80	36008.89	13700.04	68195.25

Centrally Sponsored Schemes

The following Centrally Sponsored Schemes have been proposed for the year 2004-05: (a) Accelerated Rural Water Supply Programme (ARWSP) (Outlay Rs.4000.00 lakh) (b) Accelerated Rural Water Supply Programme (ARWSP) for SC/ST habitations (Outlay Rs.1000.00 lakh) (c) Grants to TWAD Board for the execution of Accelerated Urban Water Supply Programme (Outlay Rs.2500.00 lakhs).