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The Need for Policy Coherence  
and New Partnerships



**Institutional and Consumer Contestations over Water:  
Case of Chennai Metro Area**

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## **Abstract**

Historically, water has been a contentious issue among nations and states. From source sharing to final pricing, institutional conflicts dominate and get manifested in various forms. These conflicts deprive access to water by various segments of the population, especially the marginalized groups. Taking Chennai metropolitan area as an example, which has perennial water crisis and institutional conflicts, this paper analyses contestations over source, contestation over distribution and resultant marginalization of various population sub-groups. It probes into aspects such as urban form, territorial and institutional conflicts, regulation over water and its impact. It analyses the water policy in the context of local politics. It reviews how far the local commitment exists towards achieving MDG in drinking water. The paper argues that how in certain sectors, such as water, decentralization will not address efficiency and equity concerns, especially in favour of vulnerable groups.

**INSTITUTIONAL AND CONSUMER CONTESTATIONS OVER WATER:  
CASE OF CHENNAI METRO AREA**

- **Dr. N. Sridharan<sup>∗</sup>**  
**( SRI )**

Since the time immemorial, Chennai (formerly known as Madras) is heavily dependent on rain fed water sources for its drinking water supply. Often there were conflicts, and at times co-ordination with neighbouring states, especially with Andhra Pradesh and Karnataka. There were years when Chennai received water from Krishna River (in Andhra Pradesh) through rail tankers to meet at least the partial demand for drinking water supply of the local people. Forced by the ever increasing population and the quest for drinking water, many private companies entered into the business of drinking water provision in addition to Chennai Metro Water Supply and Sewerage Board (CMSSWB) that was set up way back in 1970s to tackle the water problems of the city dweller. Many sources have been identified over the years, there were scandals associated with the supply, there were multiple service providers supported by a party in regime, there were conflicts within the city in terms of distribution, among the states making it one of the unique city in India along with Delhi where the source of water itself raises a series of controversy. This paper tries to capture these conflicts and contestations in the provision of drinking water for the city dwellers. These conflicts and contestations does not restrict itself to service providers alone, but also extends to consumers, where there are water fights, riots and conflicts in different places of the city. This paper probes into aspects such as urban form, territorial and institutional conflicts, regulation over water and its impact, inequality in distribution, etc. Divided into various sections: urban sprawl, source conflict, institutional conflict, spatial inequality and how the people are coping up with this perennial water shortage in the city, it concludes with various means to over come these conflicts.

**Spatial Expansion of Chennai and its impact**

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Chennai expanded at a faster pace during 1990s due to heavy industrialization of its periphery and congestion of the core. City's expansion has been captured in Figure 1 given below.

Figure 1 Chennai's Expansion over Decades 1971-2001

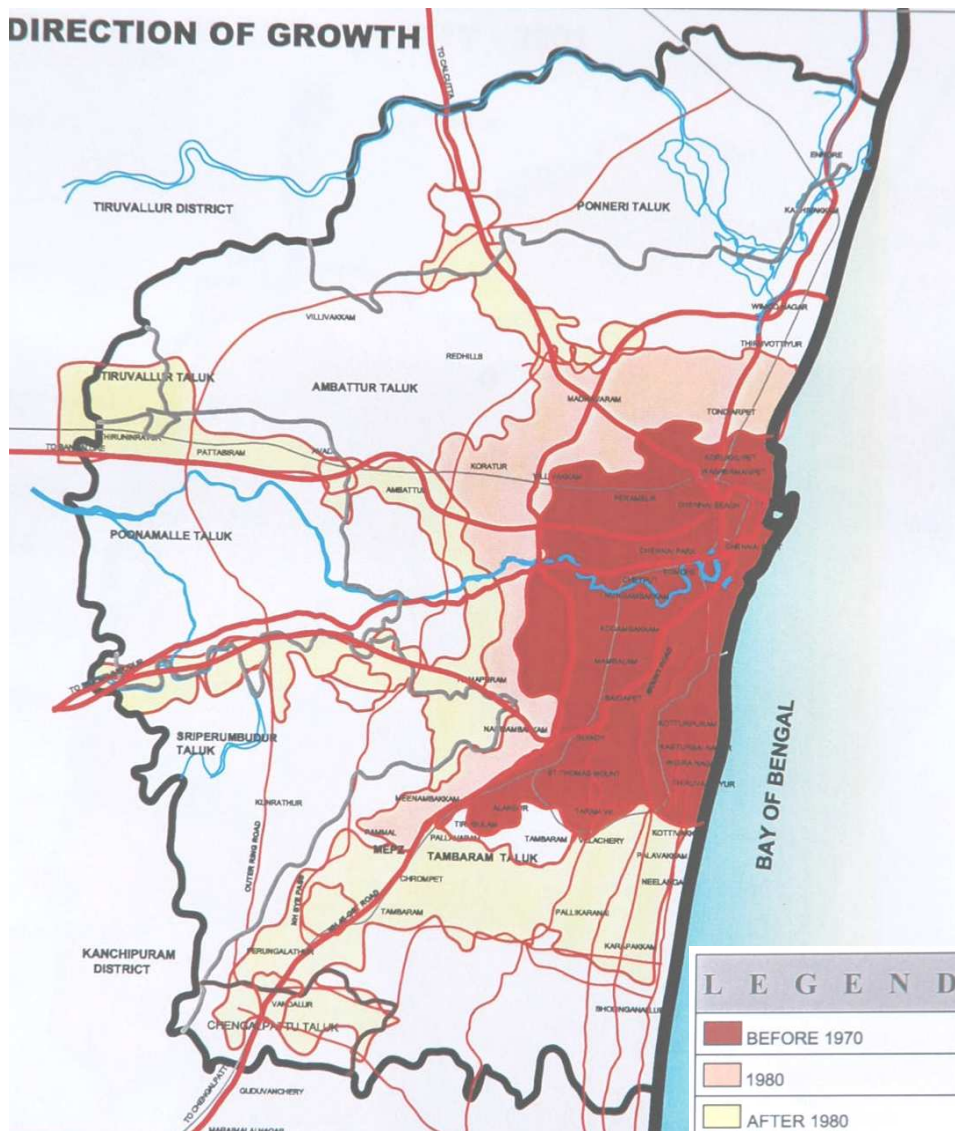
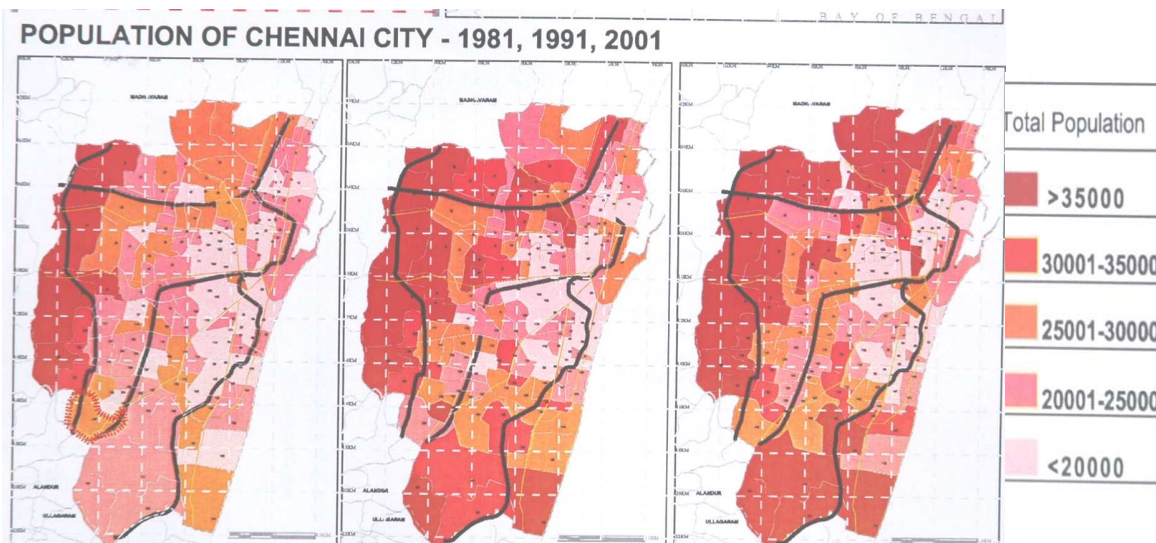


Figure 1 shows that city's expansion has occurred in the post 1990s towards West and Southern side. This is mainly due to availability of ground water. If one sees the expansion over decade it shows that peripheral areas absorbed more population than the



Source: Census of India, 1981,1991, and 2001.

Wards in the core of the city. This can be further explained through the density pattern across the city. This is shown in Figure 2 below.

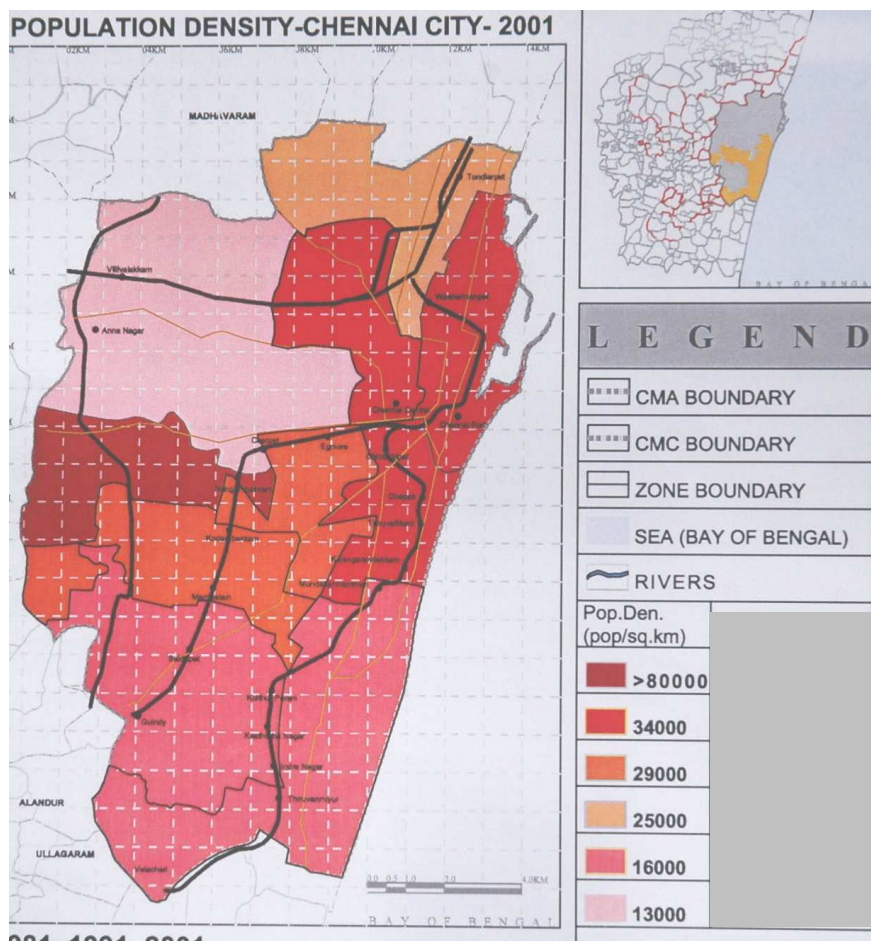
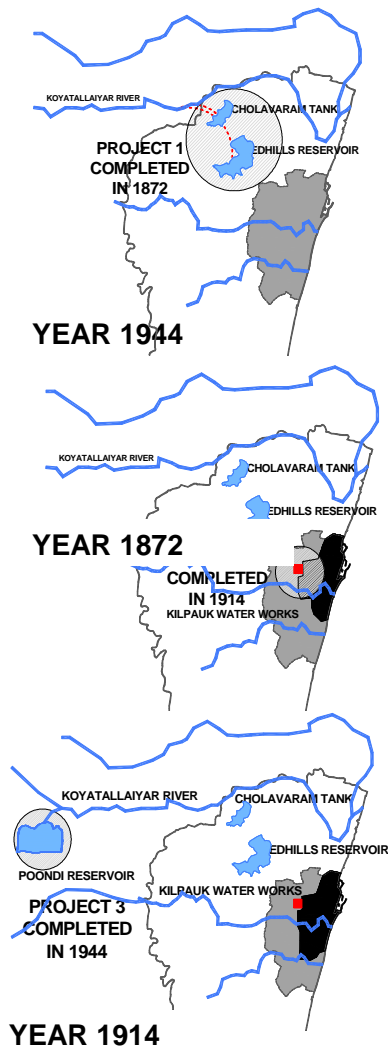


Figure 2 shows that the north west of the city near the surface water sources has lowest density, while the southern part that is equipped with ground water has high density. So also the northern part of the city has high density taking advantage of existing distribution network and ground water availability. In other words, the city expanded in those directions where the availability of ground water existed and where exploitation of the same was easy.

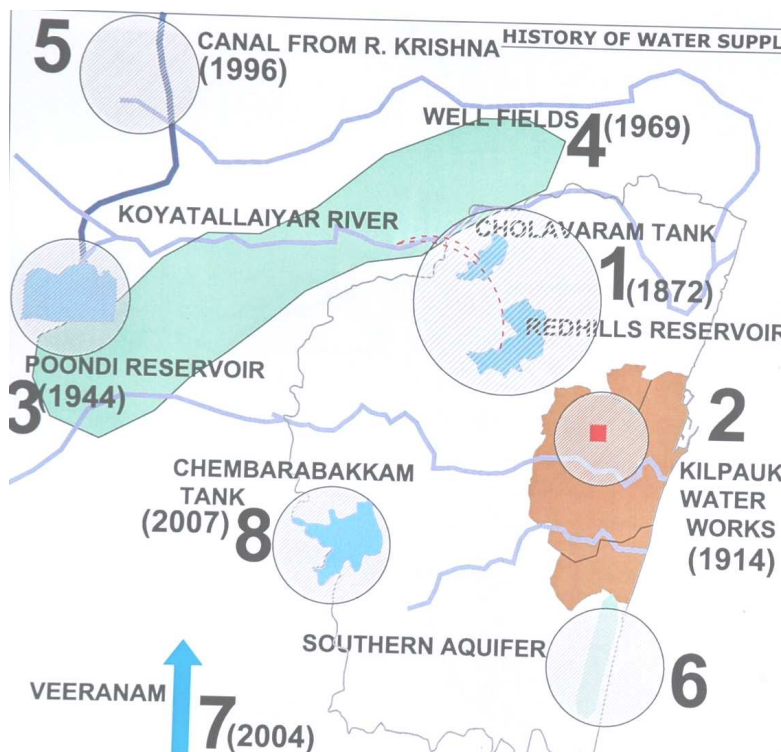
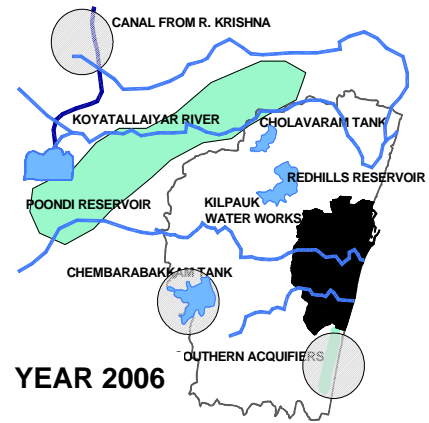
### Historical Development Of Drinking Water Sources

Chennai city is the capital of Tamil Nadu and the fourth largest city in India. The city has grown rapidly and presently the city has about 4.5 million people on an area of 170 sq.km. The metropolitan area is 1178 Sq.km. that covers the Chennai Municipal Corporation area (CMC), 16 Municipalities, 20 Special Village Panchayats, 213 Village Panchayats, 10 Panchayat Unions, four Townships and One Cantonment. This itself explains the institutional conflicts and contestation over water, when there are multiple service providers.

The water supply of Chennai was for many years obtained solely from shallow wells, and it was not until 1866 that it was decided to adopt a public supply scheme. This scheme, which combined the Chennai City Water Supply with irrigation of 3500 Ha of previously wasteland, was opened in 1872. Water was taken from the Kortalaiyar River to storage in Cholavaram and Redhills lakes. Further developments, which took place after 1907, were the construction of an outlet tower and roughing filters at Redhills, an underground conduit to convey water to the city and slow-sand filters at Kilpauk. The new works were designed to supply 160 lpcd to an estimated population of 6.6 lakhs in 1961. In the event, the population of the city in 1961 was about 18 lakhs (CMWSSB:2006).



To meet the increasing demand for water in the city, the irrigation supply was discontinued at some time during the 40's or 50's. To meet the increasing demand for water in the city, the irrigation supply was discontinued at some time during the 40's or 50's. At Poondi Groundwater continued to be drawn from shallow wells within the city boundaries, particularly in the suburbs. Further groundwater development occurred after 1968 based on a UNDP study, which recommended development of the Arani-Kortalaiyar aquifer to the northwest of the city.



**Figure 3: History of Water Supply in Chennai**

Figure 3 summarises the historic development of water sources that are still serving the growing Chennai's population.

With the increase in population and expansion of urbanised area,

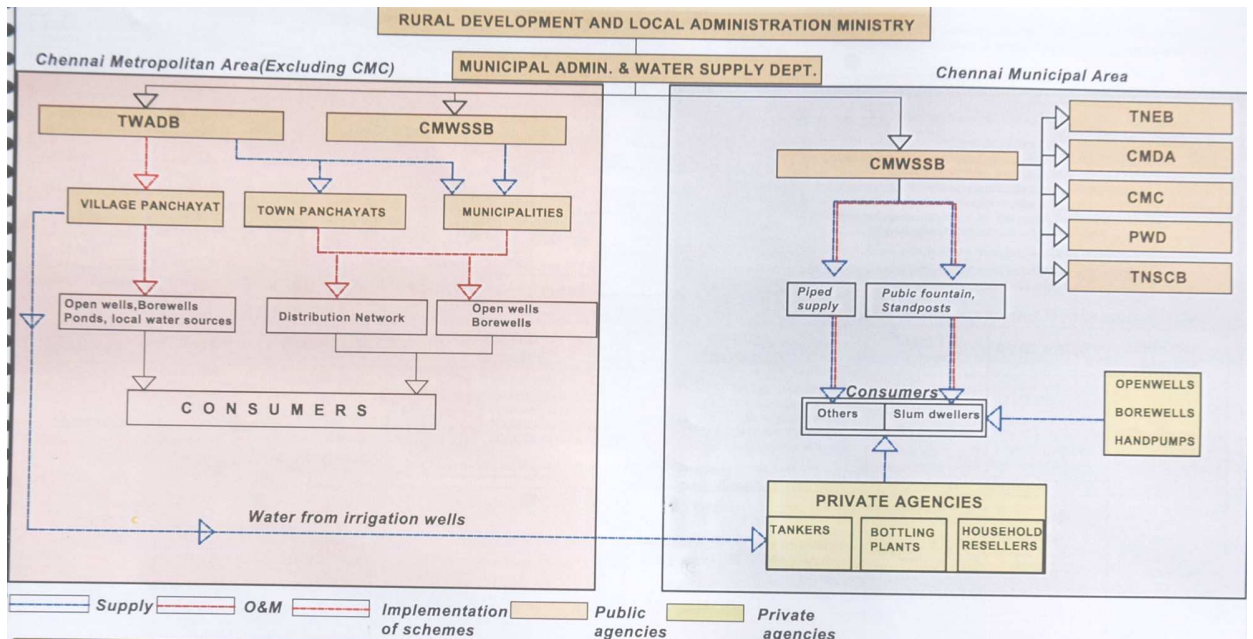
distribution lines were extended periodically and eventually led to the establishment of Zonal System of distribution in 1954. Twelve water zones were formed with an aim to supply water to the consumers equitably at adequate pressures; and trunk mains were laid.

By 1970-72, additional Head works at the following locations were commissioned.

1. Robinson Park (now called Anna Poonga)
2. Southern Head Works, and , 3. K.K Nagar.

As the requirement of the growing population, Chennai were huge and the investment required in infrastructure would be very high it was thought it would be desirable to form a separate Statutory Board to look after the water supply and sewerage system by getting institutional finance from World Bank and other sources and hence CMWSSB was formed by an Act of the Legislature of Tamil Nadu. From 1978, CMWSSB has taken on the task of consolidation and gradually expanding the water supply and sewerage systems in CMC, and certain Municipal areas outside the city limits. Tamil Nadu Water Supply and Sewerage Board (TNSSWB) set up during the same time takes care of rest of the Metropolitan area's water supply requirement along with private service providers as well as local municipalities, town panchayats and also Contonment that buys water from TNWSSB or CMWSSB. However, from the beginning the water sources are controlled and regulated by the Irrigation Department at the State level. The over all arrangement for water and the institutions involved in the CMC area and outside CMC are that is within the metropolitan area is given in the Flow Chart below (Figure 4). It shows the number of institutions involved both within the city and how it gets multiplied when it comes to metropolitan area increasing the institutional conflicts. This is true for the City area as well, as the City is increasingly depending on the surrounding Panchayats for its daily water requirements.

Figure 4: Institutional Arrangements for Water in Chennai



Source: Water and Solid Waste Management in Chennai, unpublished Studio Report, Master's in Urban and Regional Planning, School of Planning and Architecture, 2006.

Figure 4 is self-explanatory in revealing the conflicts involved in water. Without going into the source, in the distribution system itself shows the number of players in the provision of water. The Panchayats and the farmers living in these Panchayats sell water directly to the private tankers and many of them have converted their agricultural land to water production land, as it yields more money than mere paddy cultivation (Saravanan and Ruet: 2004). This ground water exploitation not only had an adverse environmental impact, it also left the peri-urban water consumers high and dry (ENVIS: 2006, Narasimhan: 2008, Adriana & others: 2006). Surface water sources have their own politics as we shall see in the following paragraphs.

## POLITICS OVER SURFACE SOURCES

### 1. Telugu Ganga Project

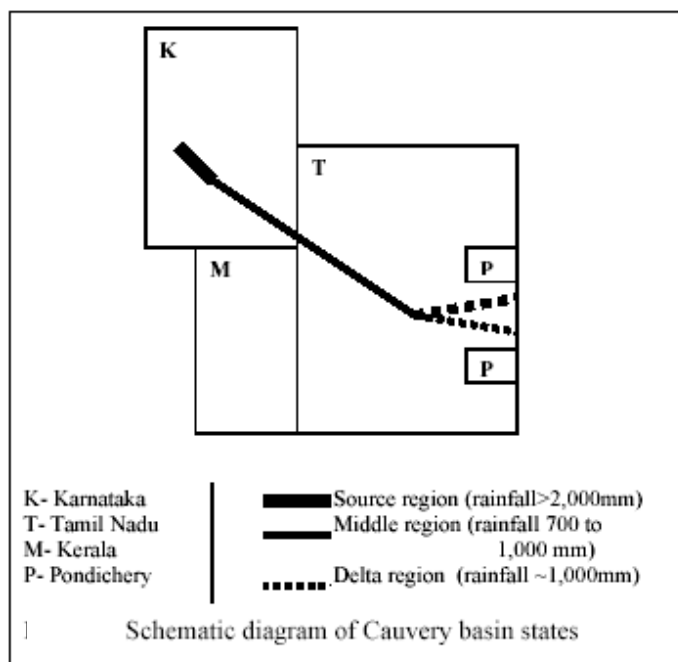
River waters in India, belongs to a state from where the river originates and runs. Due to internal political pressures, most of the states where the river runs through exploit the rivers for irrigation and drinking water purposes apart from industrial use. What ever is left over after exploitation is left for the next State where the river flows. There is always political conflict over surface water (Bhaviskar: 2007, Rohan: 2007, Biksham & Others:

2006), especially when the neighbouring states are ruled by different political parties and when the Central government supports a particular state, where the party in power is the same one as in Center. This was the case in Telegu Ganga Project that was supposed to provide drinking water for Chennai. In order to meet the growing demand for water, an agreement has been entered between the Govt. of Tamil Nadu and Andhra Pradesh on 18.04.1983. As per the agreement, Andhra Pradesh has to deliver at the border of Tamilnadu (at a constant rate of 1000 cusec.) 8 tmc of water during July to October and 4 tmc of water during January to April of every year. However, due to political conflicts between Andhra Pradesh and Tamil Nadu for many years this could not be achieved. Internal political lobbying in Andhra Pradesh, which resulted in project delay and diversion of water to irrigation within Andhra Pradesh, resulted in further complications for drinking water provision in Chennai.

## 2. Cauvery Water

Four Southern States of India are directly involved in the Cauvery dispute:Karnataka, Tamil Nadu, Pondicherry and Kerala. Use and development of Cauvery Waters were regulated by agreements of 1892 and 1924 between the erstwhile Princely State of Mysore and province of Madras. The State of Kerala was not a party to this agreement.

The 1924 Agreement expired at the end of 50 years and became open for review in the light of experience gained and further possibility of extension of irrigation etc. With the re-organisation of States in 1956, the former princely State of Coorg, which was partly in the Cauvery basin, became part of Karnataka and some areas of Malabar in Madras State in the Cauvery basin became part of Kerala. The then French territory of Pondicherry which is also served by Cauvery became a Union Territory. Thus presently, Kerala, Karnataka, Tamil Nadu and Pondicherry are interested



States for sharing the Cauvery Waters.

For Karnataka and Tamil Nadu Cauvery issue has become an emotional issue. Tamil Nadu does not control any of the Cauvery headwaters, yet it is in possession of the tributaries Bhavana and the Moyar. There is peace in times of good rains. However, when the monsoons fail, violence erupts, from streets of Karnataka and Tamil Nadu to Delhi.

Since 1974 when a 50 year old agreement between the Madras presidency and the princely Mysore state collapsed the Cauvery River Dispute has been a serious issue. The Karnataka Government asserts that the 1924 agreement entailed a discontinuation of the water supply to Tamil Nadu after 50 years. The conflict between the two States compounds a century old dispute over the vital interests of farmers in Tamil Nadu and Karnataka.

Tamil Nadu depends on agriculture as the primary means of sustenance. It relies on the Cauvery River to sustain its agricultural needs. Beyond the Cauvery, Tamil Nadu has very few resources for complex irrigation systems to maintain its water supply. The Chennai metropolitan is also drawing upon cauvery's water in the absence of any perennial source of water in vicinity. It is mandatory for Karnataka to abide by the decisions made by the Tribunal and Supreme Court. Karnataka is not above the law, and should be made to release at least 205 TMC of water to Tamil Nadu to save standing crops. Tamil Nadu asserts that water sharing is a national issue that requires the intervention of the Government of India.

Tamil Nadu is now shifting its case from the Supreme Court and Tribunal to the Parliament. Tamil Nadu Chief Minister M. Karunanidhi had threatened mass agitation if Karnataka does not comply with the Supreme Court's mandate.

Though the interim award was given in 1991, the matter remained contested until 1998. In August 1998, the federal ministry of water resources constituted two institutions as per the ISWD Act.

a) The Cauvery River Authority (CRA) with the Prime Minister as the chairperson and the chief ministers of the four states involved as members. The purpose of this authority is to implement the interim award of the tribunal.

b) The Monitoring Committee, mainly consisting of various federal and state civil servants and a few technocrats. The purpose of the monitoring committee is to collect data, monitor the implementation of the decisions of the authority and in case of any difficulty, to refer the matter to the CRA.

The authority has met six times until February 2003. As per the rules, the quorum required is 3 members (i.e., chief ministers of at least three states out of four). However, in November 2002 and again in January 2003, a meeting of the CRA had to be cancelled at the last minute due to lack of quorum. Later, the Supreme Court directed that quorum is not necessary. In February 2003, the CRA directed K to release a certain amount of water so that crops in T can be saved. Soon after the meeting, the chief minister of K said that he was “unhappy” at the decision; ironically

The chief minister of Tamilnadu also said that she was “terribly disappointed”<sup>15</sup>. The dispute persists and it was observed to be an important political issue in the recently concluded (April-May 2004) general elections to the lower house of Indian Parliament and also the state legislature of Karnataka. It is seen that the Common Minimum Programme of the United Progressive Alliance led by Congress includes the resolution of Cauvery dispute as a priority. Also, in the last week of May 2004 and first week of June 2004, delegations of members of parliament from both K and T states have been meeting with the Prime Minister seeking his intervention with regard to the release of waters.

### **3.CHENNAI city water augmentation projects**

The Chennai City Water Supply Augmentation Project-II at an estimated cost of Rs. 124 crores is being taken up in 2004 with an objective to augment water supply to the city by intercepting the rain water run-off by the construction of check dams across Veeranam, Adyar and Palar rivers. About 20 mld of water is proposed to be tapped from the above sources and the project is scheduled for completion by 2007. However due to changes in political regime within the State, this project is also delayed. Earlier, Veeranam project brought the Dravida Munnetra Kazhagam (DMK) government due to bribery and corruption involved in the project. Finally this project saw its day in 2005, when the opposition government All India Anna Dravida Munnetra Kazhagam (AIADMK) was in power. Claims and counter claims were made in the success of this project but finally in terms of distribution it is yet to achieve its full capacity.

#### **4. Desalination of Water**

One of the pet projects of the previous Government of Tamil Nadu, which was interested in bringing in foreign technology and multi-national firms to provide water for Chennai, came out with the idea of desalination of water. Locational advantages near the Sea, and flat terrain and adequate availability of electricity for pumping enabled the government to think in a non-conventional way to solve the water problem of Chennai city (Meerganz: 2006). The acute water scarcity of water warranted the CMWSSB to come up with sustainable solution for source reliability and augmentation of water supplies to the growing population of the Chennai Metropolitan area. As such at present there is a desalination plant near light house with a capacity of 2 lakh litres serving the fisherman colony. A plant is also proposed at Minjur with a capacity of 100 MLD. The plant is proposed on a Design, Built, Own, Operate and Transfer (DBOOT) basis with a heavy involvement of private sector. Cost of desalination and poor revenue collection desists the private sector to come up with a large scheme without heavy subsidy from the government side. In the earlier minor desalination plant, the government heavily subsidized the project as this was meant for politically sensitive fishermen colony where most of the vote banks of the city were located.

#### **B) Ground Water Sources**

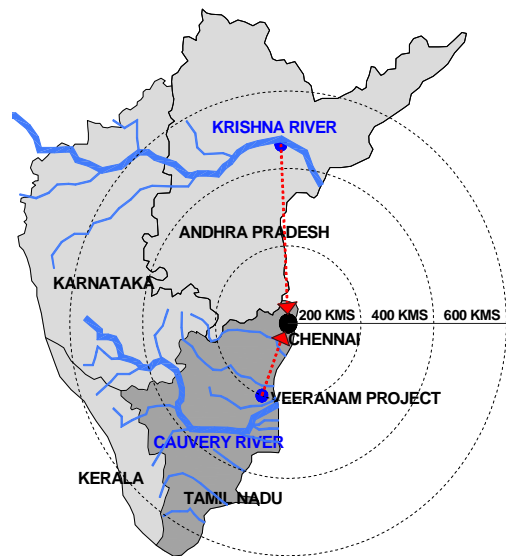
CMWSSB has developed 7 nos. of Well Fields namely, (i) Poondi, (ii) Tamaraipakkam, (iii) Flood Plains, (iv) Kannigaipair, (v) Panjetty, (vi) Minjur & (vii) Southern Coastal Aquifer in which above 74 nos. of deep bore wells are in existence. Apart from this, CMWSSB have executed water purchase agreement with private agricultural owners. From both the sources about 100 MLD water is extracted for Augment Industrial and City water supply. From April 04, 2006, Neyveli Aquifer is added as new Ground water source. The quantity of water from various sources is as given below.

<b>EXISTING WATER SOURCES OF CHENNAI</b>		
<b>SL.NO.</b>	<b>SOURCE</b>	<b>QUNTY.(mld)</b>
1	POONDI,REDHILLS & CHOLAVARAM	200
2	WATER FROM WELL FIELDS	148
3	SOUTHERN AQUIFER	10
4	METRO WATER WELLS IN URUR, PORUR & KATTUPAKKAM	20
5	TUBE WELL AND HAND PUMP	50
	<b>TOTAL</b>	<b>483</b>

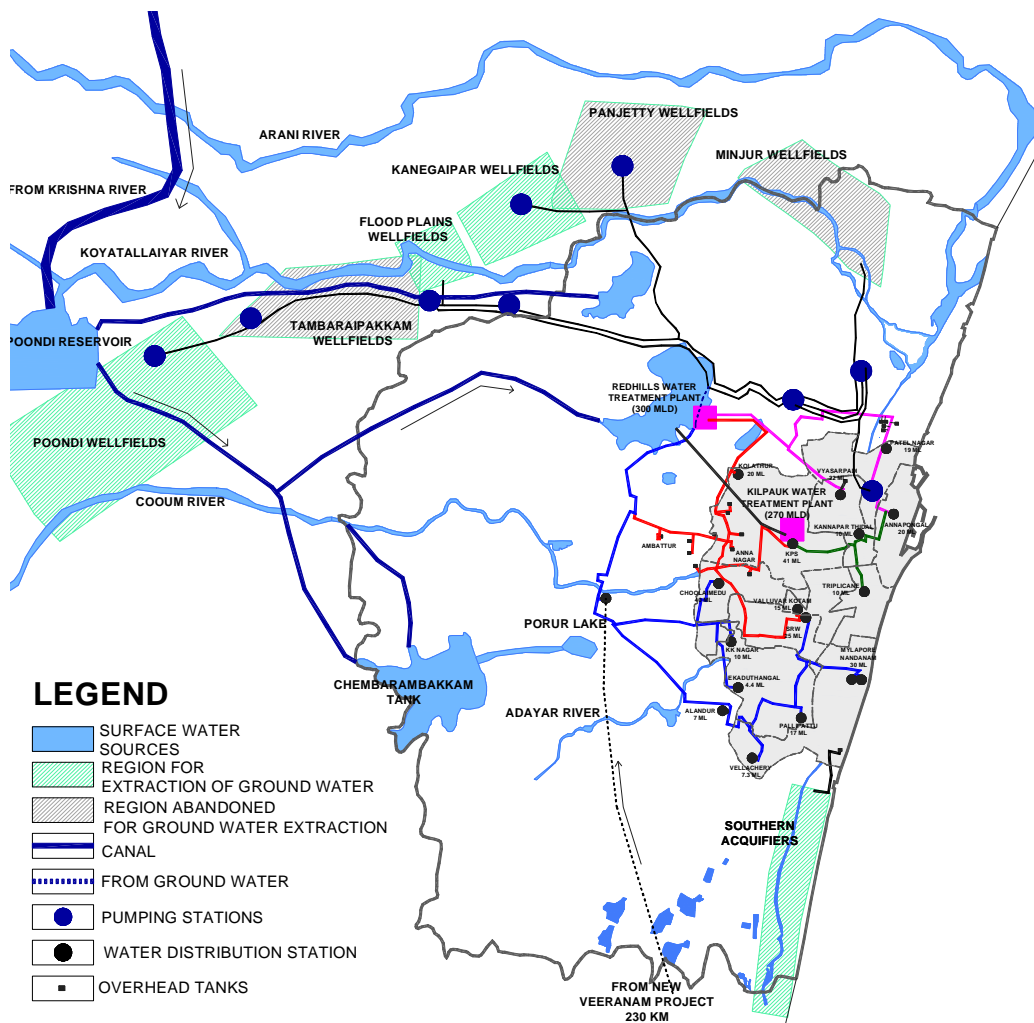
Source: CMWSSB,2006

The Veeranam Project and the Telegu Ganga Project transport water over distances of 230 kms and 500 kms to the city of Chennai. This results in high costs for the production of water.

The excess extraction of ground water from the well fields to the north have resulted in depletion of ground water and sea-water intrusion upto 13 kms in Minjur (south of Chennai). This has resulted in the need for tapping ground water further away from the city and has shifted the focus of groundwater tapping to the southern aquifers. Tamil Nadu Government's Department of Environment has observed (2006) that the excessive ground water exploitation has resulted in depletion of ground water at an alarming rate of three to four meters per annum in Chennai and its periphery. Though , Tamil Nadu Government was the first one to bring in Ground Water Extraction prohibition Act, it is only on paper and the water extraction continues in the peri-urban areas of the city of Chennai as most of it is done by groups that enjoy political patronage. What is interesting is that these groups understanding the local demand varies the price of water during peak and lean season to its customers.



## Water Distribution System



The water for Chennai city is supplied by the Chennai Metro Water Supply and Sewerage Board (CMWSSB) through its surface and ground water sources. Water from the higher reservoirs flow into the lower ones ultimately being collected for distribution to the city from the Redhills Reservoir, which is located near the city. The CMWSSB formed in 1978 is supposed to supply water to the entire region. But presently it supplies water to the Chennai city and 6 Municipalities in the region. The rest of the region depends on its own surface and ground water reserves and the supply by the TWAD Board. Figure 5 provides the Water Distribution System for Chennai.

Water once collected in the reservoir is distributed to distributing stations and then

SOURCE: CMWSSB,2006

TREATMENT PLANT	REDHILLS			KILPAUK	VEERANAM
CAPACITY	300 MLD			270 MLD	180 MLD
DISTRIBUTION MAIN	<b>NORTH CHENNAI MAIN</b>	<b>CENTRAL CHENNAI MAIN</b>	<b>SOUTH CHENNAI MAIN</b>	<b>KILPAUK MAIN</b>	<b>TO PORUR DS</b>
DISTRIBUTION STATIONS	Vyasarpadi(22ml) Patel Nagar(19ml) Annapongal(20ml)	Kolathur(20ml) SRM(25ml) KPS(41ml) Valluvar Kotam(15ml) OHTs	KK Nagar(10ml) Ekaduthangal(4.4ml) Alandur(7ml) Vellacheri(7.3ml) Pallipattu(17ml) Mylapore(30ml) Cholamedu(40ml)	Triplicane(10ml) KPS Annapongal Kannarparthidal (10ml)	
ZONES	1, 2, 3	4, 7, 8	7, 9, 10	2, 3, 4, 6	

supplied through pipe lines to individual households for residential purposes, commercial and industrial purposes. Details of the various Distribution Stations is provided in the table below:

### Distribution to Slums

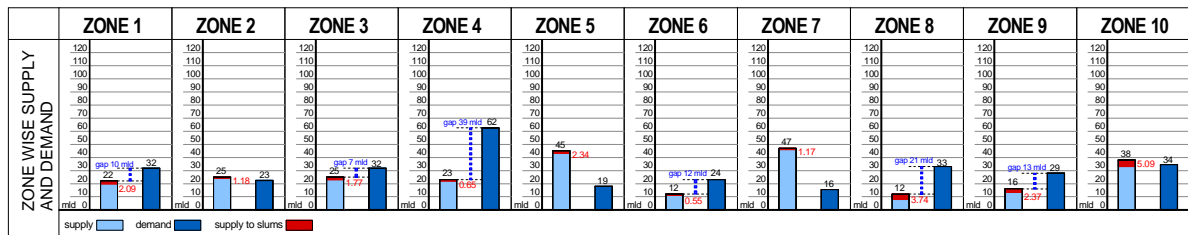
Water is supplied to the slums by the CMWSSB through tankers free of cost but the high demand has given rise to organized middle men who charge the slum dwellers for the provision of water. The CMWSSB supplies water by filling up the tanks constructed at locations accessible by the tankers. A total of 21 mld is supplied to the slums and 20 mld is supplied to the rest of the city which is charged for through tankers in areas with either

	ZONE1	ZONE2	ZONE3	ZONE4	ZONE5	ZONE6	ZONE7	ZONE8	ZONE9	ZONE10
POPULATION	33,315 (8.4%)	23,180 (7%)	34,100 (7.4%)	18,400 (2%)	25,335 (9.5%)	13,465 (3.9%)	15,015 (6.6%)	46,630 (9.9%)	41,288 (9.9%)	98,050 (20%)
WATER SUPPLY	2.09MLD	1.18MLD	1.77MLD	0.65MLD	2.34MLD	0.55MLD	1.17MLD	3.74MLD	2.37MLD	5.09MLD

no piped network or inadequate supply due to low water pressure. The water distributed in the slums along with the total population of the slums zonewise is provided in the table (SOURCE: CMWSSB, 2006).

## Spatial Variation In Distribution

The study estimates the spatial variation in the city at the zonal level. The following graphs indicate the demand-supply gap where the demand has been calculated on the basis of the water required by the population at (70 lpcd) the average water available for the city.



SOURCE: CMWSSB, 2006

Various parametres have been considered to identify the critical zones and areas within

PREDOMINANTLY OLDER AREAS										
DENSITY										
LPCD LESS THAN AVG				25 LPCD		35 LPCD		20 LPCD	37 LPCD	
LESS ACCESS TO TW										
LESS ACCESS TO GW										
LOW GW LEVEL										
	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	ZONE 7	ZONE 8	ZONE 9	ZONE 10

the city like limited access to tap and ground water connections and ground water availability have been compared with density, total water supplied by CMWSSB, historic growth and landuse to establish the critical zones and its characteristics. As per the analysis, the zones where supply becomes extremely crucial are zone 3, 4, 6, 8 and 9.

The per capita daily supply in zone 5 and 7 is 178 lts and 217 lts respectively implying a large distortion which also requires to be seen critically. The characteristics of these zones have been therefore analyzed to be able to determine the reasons for the spatial variations of supply across the city and it is presented in Appendix –I.

Figure 7 below shows the zone wise supply-demand and other characteristics. It is evident from this figure that some of the zones where the supply limited, the ground water exploitation is high. It also shows the spatial inequality in the distribution of water across zones.



### I MAPPING CMWSSB SUPPLY ACROSS ZONES



DATA SOURCE: CMWSSB, 2006

### II MAPPING THE SPATIAL VARIATIONS OF AUGMENTING CMWSSB SUPPLY



DATA SOURCE: CMWSSB, 2006  
CENSUS OF INDIA, 2001

### III MAPPING THE SPATIAL EFFECTS OF GROUND WATER EXTRACTION

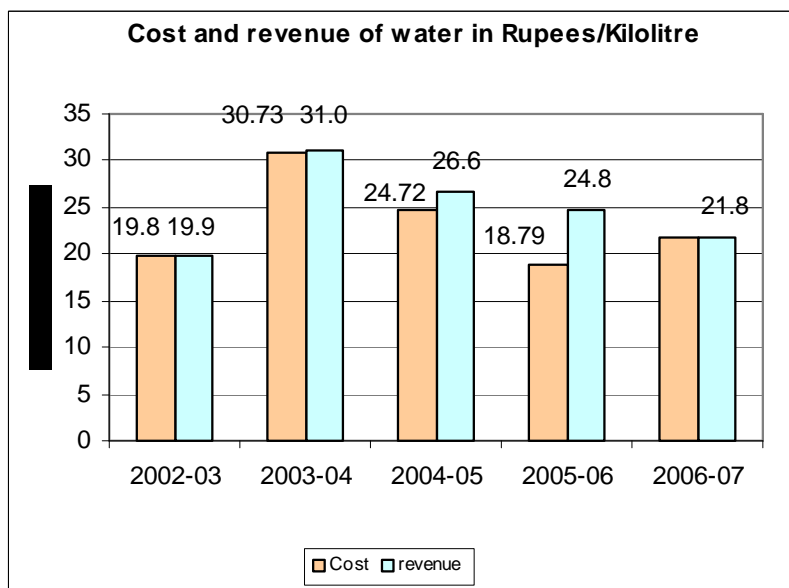


DATA SOURCE: DR. K.P.SU/DIEER, IIT, CHENNAI, 2004  
CMDA, CHENNAI 2006



## Politics of Pricing water

Drinking water, especially through tap water is priced at a lowest level in Chennai because of two political reasons. One, the State government is not in a position to increase the price per kilo liter due to political compulsions and to appease the vote banks. Second, most of the private companies and the farmers who supply ground water through tankers are political affinities to the ruling coalition. Any variations in the pricing will adversely affect the exploitative situation that these service providers enjoy. This can be viewed when one analyses the comparative pricing of water across the cities of India. Table No. 2 shows that Chennai's water pricing has been deliberately kept low as compared to Mumbai, Hyderabad, Delhi and Bangalore especially in the initial slabs and in commercial and industrial uses of water. Surprisingly the reform that occurred in the field of electricity pricing has not affected the water pricing. This low pricing policy has



adversely affected the long term piped water supply to all. More over given the limited number of metered connection in the city, with half of the meters not functioning, it affects the revenue and capital projects. In fact the Figure ? below shows that the

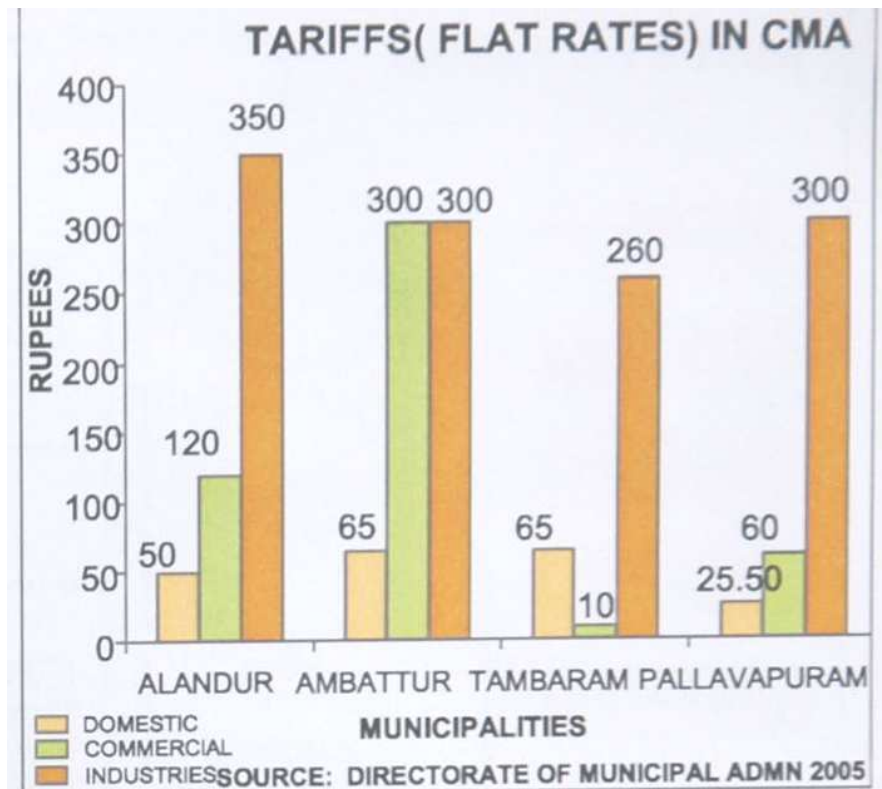
cost and revenue per kilo litre fluctuates over a period of time and has reached a point where there is no differences between cost and revenue.

Table No. 2 Price Comparisons across various Metropolitan cities of India

CHENNAI 1998	CHENNAI 2003	CATEGORY	HYDERABAD	MUMBAI	DELHI	BANGLORI
Rs 50	Rs 50	<b>DOMESTIC</b>				
		MINIMUM CHARGES	Rs 90	Rs 30-100	Rs 40-120	Rs 48-5826
0-25 KL	0-25 KL	METERED SLAB	-	-	6-40 KL	0-75 KL
Rs2.5-25 KL	Rs2.5-25 KL	METERED RATE	-	-	Rs2-10/ KL	Rs9-36/ KL
Rs 9 /KL	Rs 9 /KL	AVERAGE(25 KL)	Rs 6 -25/KL	Rs 4.8/KL	Rs 3.5/KL	Rs 13/KL
Rs 50	Rs 50	UNMETERED	Rs 90/270	Rs 30-100	Rs 40-120	Rs 90
		<b>MIXED USE</b>				
Rs 150	Rs 150	MINIMUM CHARGES	-	-	Rs 250	Rs 390-2280
0-15KL	0-15KL	METERED SLAB	-	-	0-50 KL	0-60 KL
Rs 5-25/KL	Rs 5-25/KL	METERED RATE				
Rs20/KL	Rs 20/KL	AVERAGE(50 KL)	Rs 4/KL	Rs22-35/KL	Rs10-20/KL	Rs39-51/KL
		<b>COMMERCIAL</b>				
Rs 200	Rs 400	MINIMUM CHARGES	-	-	Rs 250	Rs 90-2280
Rs 25/KL	Rs 35/KL	METERED RATE	Rs 25/KL	Rs22-35/KL	Rs10-30/KL	Rs39-60/KL
		<b>INDUSTRIAL</b>				
Rs 400	Rs 650	MINIMUM CHARGES			Rs 600	
Rs 40/KL	Rs 60/KL	METERED RATE	Rs 25/KL	Rs22-64/KL	Rs15-50/KL	Rs 60/KL
	Rs 2000-3700	CONNECTION CHARGES.	Rs 700-90000	3000-5000	2500-10000	
	250km	SOURCES		100+ km	0 km	90 km

SOURCE TARIFF:CMWSSB , HMWSSB,DJB,BMC, BWSSB WEBSITE . 2006

Water pricing also varies across space as we can see in the following figure. It shows that in the surrounding Municipalities and other villages, the price charged per kilo liter of water is different from the one



seen above. For domestic use the price varies from Rs.50/- to Rs.65/- and as low as Rs.25.50 per KL. Similarly for commercial purposes, the price per KL varies from as low as Rs.10 in Tambaram, to as high as Rs.300 in Ambattur. In the case of Industrial use of water, the price does not vary much. However, the cost of provision of water for all uses is as high as in

the case of Chennai City area.

As compared to the pricing by public agencies, the private sector supported by the political parties, exploit the demand and supply gap to arrive at a scarcity pricing. The details are given below:

#### Private Suppliers Cost and Price (Bottled Water)

Raw Water	Rs. 0.01 per Liter
If Bought	Rs. 0.02 per Liter
Transport, Treatment & Other	Rs. 6-7 per liter
Distributors	Rs. 7-8 per liter
Consumers	Rs. 10/- per liter

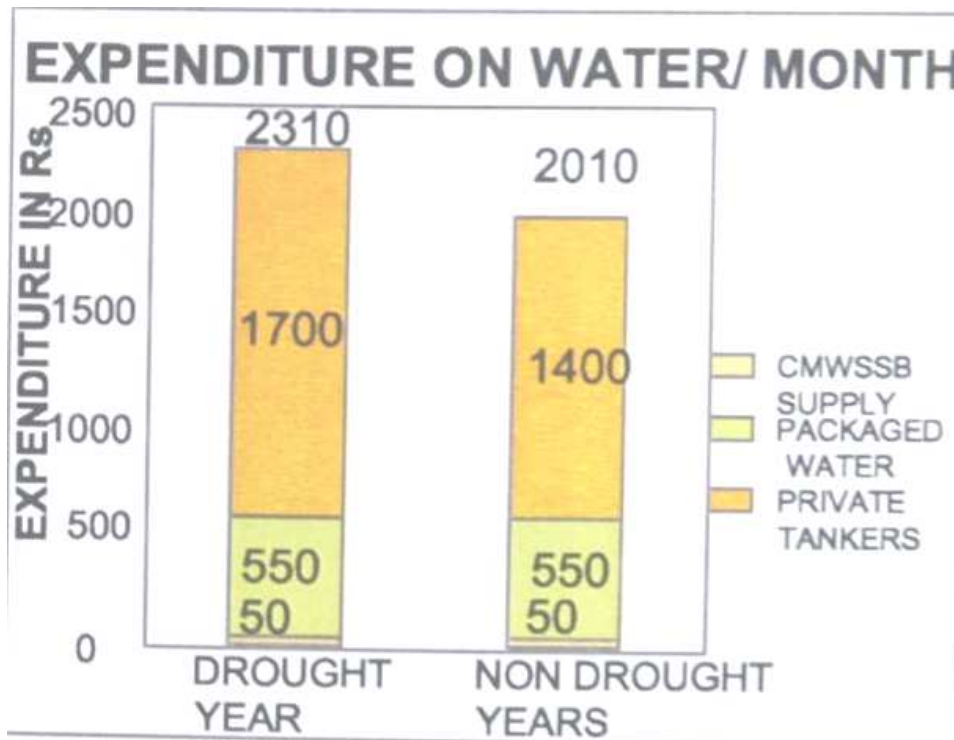
Source: Survey of Bottling Plants, 2006.

#### Private Suppliers Cost and Price (Tankers)

Raw Water	Rs. 3- 8 per KL
If Bought	Rs. 16-20 per KL
Transport, Treatment & Other	Rs. 60 – 65 per KL
Distributors	Rs. 7-8 per KL
Retail Consumers	Rs. 125 - 150/- per KL

Source: Survey of Tankers, 2006.

Average Monthly Bill on water comes to Rs.1500 – Rs.2500/- per month by individual households in the middle class with a average family size of 5-6. While the water bill is around Rs.600- 800/- per month for low income group (Source: Opinion Survey: Sept. 2006).



The above figure shows that people spend as low as Rs.50/- per month on CMWSSB's water, as compared to as high as Rs.1700/- per month on Private Tankers. This amount also varies between Drought Years and Non-Drought years. This pricing by private tankers reveals the nexus between the private tank operators and other rent-seekers in the market who would like to keep the supply from the CMWSSB at the lowest level. People's preference for better quantity (36%) and better quality (66%) shows that most of the people are affected by the quality of water supplied by CMWSSB. This is true of slum dwellers too who prefers bottled water in order to avoid water borne diseases.

## Conclusions

All these reveal that the consumers are kept high and dry especially during drought seasons. Even the distribution of water within the given network is not even with many of the areas not having connections. In fact there are variations in terms of supply based on caste and community feelings as well. While 64% of the general population is covered by piped water, when it comes to SC/ST population only 37% were covered (as per 2001 census). There are politics in terms of source utilization, politics in terms of distribution, pricing and cost recovery, and allowing the private operators to exploit the ground water though the water table has gone down more than 12 meters in some parts of the city as observed by the Pollution control board of Tamil Nadu.

More over there are contestations among service providers leading to less water provision in the rest of the metropolitan area where Tamil Nadu Water Supply and Drainage Board, CMWSSB, Panchayat Unions and Vilalge Panchayats and Municipalities are involved. Though the TWAD Board was supposed to hand over the Chennai Metropolitan Area's water provision to CMWSSB, it has not done the same.

As a result of all these politics, the consumers remain divided among themselves in terms of income groups (those who can afford to have tankers and not), castes and communities, and do not have access to clean water as outlined in the Millennium Development Goals. Water remains a dream for many of the Chennai's population.

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## References

- Ahmed Imtiaz, Dixit Ajaya and Nandy Ashis (2000): 'Water, Power and People – A South Asian Manifesto on the Politics and Knowledge of Water', Pub. In Peter P. Mollinga (ed.) 'Water for Food and Rural Development: Approaches and Initiatives in South Asia. Sage, New Delhi, 2000. pp.340-348.
- Allen Adriana, Davila D Julio and Hofmann Pascale (2006): 'The Peri-Urban Water Poor: Citizens or Consumers?', in Environment and Urbanisation, 2006:18;333.
- Besley, Timothy, Rahman Lupin, Pande Rohini and Rao Vijayendra (2004): 'The Politics of Public Good Provision: Evidence From Indian Local Governments', Journal of the European Economic Association April–May 2004 2(2–3):416 – 426.
- Bhaduri Amit and Kejriwal Arvind (2005): 'Urban Water Supply: Reforming the Reformer', in Economic and Political Weekly, December 31, 2005, Pp. 5543-5545.
- Bhaviskar Amita (2007): 'Water Politics', in Economic and Political Weekly, March 17, 2007. Pp. 939-940.
- D'Souza Rohan (2007): 'Water as Dispute and Conflict' – A Review of Two books', in the Economic and Political Weekly, April 21, 2007, Pp.1431-1432.

Gessler M, Brighu U and Franceys R (2008): 'The challenge of economic regulation of water and sanitation in urban india', in *The Habitat International* 32(2008)49-57.

Gujja Biksham, Joy KJ, Pranjape Suhas, Goud Vinod and Vispute Shruti (2006): 'Water Conflicts in India – Million Revolts in the Making' in *Economic and Political Weekly*, February, 18, 2006, pp. 570 -574.

Hindu, The (2005): 'In Chennai's southern suburbs, residents face acute water scarcity', Staff Reporter, in *The Hindu* online edition, Monday, July 11, 2005.

Iyer, R Ramaswamy (2008): 'Water: A Critique of Three Concepts' in *Economic and Political Weekly*, January 5, 2008. Pp.15-18.

Karn Sunil Kumar, Shikura Shigeo & Harada Hideki (2003): 'Living environment and health of urban poor – A study in Mumbai', in *Economic and Political Weekly*, August 23, 2003, Pp. 3575-3586.

Kurian, Vinson (2002): 'Access to drinking water no guarantee for service', in *Business Line*, June 25, 2002.

Luc Anselin, Gracia Nancy Lozano, Deichmann, & Lall Somik (2008): 'Valuing Access to Water – A spatial hedonic approach applied to Indian Cities', *World Bank Working Paper Series 4353*, Development Research Group, February 2008.

Medeazza von Gregor Meerganz (2006): 'Desalination in Chennai – What about the poor and the environment?', in *Economic and Political Weekly*, Pp.949-952.

McKenzie, David and Ray Isha (2004): 'Household water delivery options in urban and rural India', Paper prepared for the 5<sup>th</sup> Stanford Conference on Indian Economic Development, June 4-5, 2004. pp.57.

Narasimhan, T.N (2008): 'Groundwater Management and Ownership', in *Economic and Political Weekly*, February 16, 2008, Pp.21-27.

Shaban Abdul, Sharma RN (2007): 'Water Consumption Patterns in Domestic Households in Major Cities', in *Economic and Political Weekly*, June 9,2007, Pp.2190-97.

Shaw Annapurna (2005): 'Peri-Urban Interface of Indian Cities: Growth, Governance and Local Initiatives', in *Economic and Political Weekly*, January 8, 2005.pp. 129-136.

What About the Poor and the Environment?', *Economic and Political Weekly*, March 18,2006, pp.949-952.

Venkataraman, Vijaysree (2008): 'Thirsty Indian Metropolis finds an answer in the rain', in *The Christian Science Monitor*, March 20,2008. in

Web address: [www.csmonitor.com](http://www.csmonitor.com)

Web Sites:

Chennai Metropolitan Water Supply and Sewerage Board: 'Management of Water supply during acute water shortage during 2003 & 2004',

Environmental Information System: Water Resources, Environmental concerns, April 2008.