



## Public Private Partnership: Tirupur Water Project

### The Challenge:

In the small, industrial town of Tirupur, located in the Coimbatore district of Tamil Nadu, the textile industry has rapidly expanded over the past decade. It is currently the largest exporter of knitwear in India and accounts for 75% of India's knitwear exports. This burgeoning textile industry faced a number of challenges in further enhancing its competitiveness in the market. Essential requirements such as steady water supply, good sewage systems and adequate infrastructure were a distant dream, and the lack of these requirements acted as a barrier to the expansion of this industry.

The growth of leather and textile industries resulted in huge demand for water which could not be met in a water scarcity region. Besides, discharge of effluents contaminated ground water. As the industries caused pollution to the needed water, the resulted depletion of ground water forced industries and local communities dependent on water tanker facility. In the meantime, absence of water treatment facility deteriorated the ground water quality.

### Public Private Partnership (PPP) Model:

In 1990, after being approached by the Tirupur Exporters Association (TEA) and the people of Tirupur, the government of Tamil Nadu initiated this water supply project estimated at a cost of approximately Rs. 4,000 million initially. Due to insufficient resources available, the project had to be implemented on a PPP basis with Infrastructure Leasing & Financial Services Limited (IL&FS). In August 1994, a MoU was signed between the government of Tamil Nadu, IL&FS and TEA, which laid out guidelines for the formulation, development and implementation of the project. According to a report by IL&FS, this project was "the first integrated water supply proposed to be undertaken in India in the water sector."

The role of IL&FS, a private company, was to ensure the development of the project, by conducting and documenting studies, implementing frameworks and

procedures, making institutional arrangements and proposing financial strategies to undertake the project. During the process of developing the project, TEA, IL&FS along with the Government of Tamil Nadu made the New Tirupur Area Development Corporation Ltd. (NTADCL) the lead agency for project. The scope of the project was to cover water and waste water treatment and was split into three different contracts: two contracts were given on an engineer, procure and construct (EPC) basis and one on operate and manage (O&M) basis.

With respect to water supply, the scheme was designed to supply and meet "an ultimate demand of 126 million litres of water per day (MLD) from industries and 93 MLD from households". A water treatment plant was constructed and distribution systems were put in place to ensure an efficient distribution of water. The project also included the provision of tertiary treatment facility to treat domestic sewage so it can be reused or recycled. The construction of the water treatment plant began in October 2002, and the majority of mechanical work was completed by December 2004. However, it was finally made operational in February 2006 because of delay due to flooding.

With respect to an improved sewage system, it comprised of a collection system, pumping stations, two sewage treatment plants and basic sanitation facilities such as septic tanks and water closets. The sewerage system aimed to serve 639,500 inhabitants of the town by 2030. The waste water facility uses a sludge system to treat domestic sewage to achieve secondary treatment standards, and discharges the water into the Noyyal River. The design allows expansion from its current capacity of 15 million litres per day to double that amount, which is instrumental in handling the sewage problem in Tirupur.

A number of challenges arose while trying to implement this project, such as private partnerships in investment and operations, even though the government was aware that the privatisation of water

resources could be a possible issue. Another challenge they faced was the search for suitable investors for the project. As the project had no definite outcome, it prevented them from readily investing in it. As there was no immediate short-term profit for the contractor, there was no incentive for a private company to take up this cause. So, in order to overcome this challenge, the government of Tamil Nadu formed the Tamil Nadu Water Investment Corporation (TWIC) with IL&FS as an equity partner. TWIC along with other private companies (Table 1) became responsible for the initiation, development and implementation of the project.

**Table 1: Parties in Tirupur PPP Water Project**

S. N.	Stake Holders	Function/Role
<b>Government Bodies</b>		
1	New Tirupur Area Development Corporation Limited (NTADCL) (SPV)	Distribution of water and revenue collection
2	Tirupur Municipality	Assistance to SPV in water distribution
<b>Private Bodies</b>		
1	Mahindra Led Consortium	BOOT Contractor
2	Tirupur Exporters Association	Textile Firms Representative
3	Infrastructure Leasing & Financial Services Limited (IL&FS)	Funding Agency
4	Tacoma Area Coalition of Individuals with Disabilities (TACID)	Getting Approvals
5	Financial Institutions Reform and Expansion (FIRE)	Technical Assistance
6	S.B. Billimoria and Company	External Auditors
<b>International Bodies</b>		
1	USAID	Loan Guarantor/Facilitator
2	World Bank	Long Term Aid

### Success Story:

Under the project, facilities have been constructed to extract, treat and supply 185 MLD from the river Cauvery. The project also includes construction of a sewerage system for Tirupur Municipality (TM) and onsite sanitation facilities for slums within TM. The waste water treatment system serves about 1,000 textile units and 1.6 million residents of Tirupur and the surrounding areas. 125 million litres of water is consumed by the cotton knitwear industry, and 25 million litres by the Tirupur Municipality. Households in the town get water supply for two hours every alternate day, and lorries bring in water to textile industries nearly seven to eight times a day. Dynamic pricing system was introduced for different service users. Not only did the project promote industrial

growth, but also helped domestic population in Tirupur. This project provided the first sewerage system in the town, which improved sanitary conditions of households in town. It reduced waiting time for water collection from tankers, protected groundwater exploitation, promoted agricultural growth and provided extra opportunities for employment due to the growth of the textile industry in this region. Waste water treatment facility was also introduced to enhance environmental quality in this region. The poor, including slum dwellers had access to clean water and better sanitation facilities which improved the health of families and increased their productivity and capacity to work. Industries and domestic users were benefitted by this project, and its beneficial effects were widespread. It also provided dignity of life, particularly for women through private in-house sanitation.

### Importance:

This case highlights the importance and success of PPP projects in Tirupur, which serves as a guide to the policy makers and gives a new perspective and a direction for policy making in water sector. While looking at the impact of this project, it can be said that this type of PPP project can be done in different parts of India, and can be successful. The Tirupur Area Development project serves as a model for future PPPs in the water sector, where other municipalities are still struggling in this sector. Since the main challenge of this project was the lack of credible, private investors which would ensure the long term success of the project, it showed the way of successful PPP.

### Unique Aspects of the Project:

- First Water & Sanitation Project in the country to be implemented on a PPP format.
- First water project in India to be funded on a Project Finance, non-recourse basis.
- Largest private investment in the Urban Infrastructure sector.
- Leverages State support by 19 times (Rs.550 million of state financing helps raise over Rs.10000 million for the project).
- Provides a viable model for implementing other projects in the sector.
- Tamil Nadu is the first State in the country to set up a PPP based institution in the sector, namely Tamil Nadu Water Investment Company.

### Beneficiaries of the Project:

- Industries – 115 MLD

- TM Domestic – 33.7 MLD
- Way side Villages – 36.3 MLD
- 192 Rural habitations served – 4,50,000 ( 2001 population census)
- Tirupur Municipality – 4,50,000 (2001 Population census)
- Industrial Units covered – 900
- Households with Sewerage Connections – 22,300 (2005) / 31,000 (2014)

[http://growinginclusivemarkets.org/media/cases/India\\_NTADCL\\_2008.pdf](http://growinginclusivemarkets.org/media/cases/India_NTADCL_2008.pdf), last accessed on 03 October 2013.

IL&FS. 2005. Tirupur Water Supply Project. IL&FS, Available at [http://www.ilfsindia.com/downloads/bus\\_rep/tirupur\\_watersupply\\_rep.pdf](http://www.ilfsindia.com/downloads/bus_rep/tirupur_watersupply_rep.pdf), last accessed on 03 October 2013.

### Further Readings:

Kothandaraman, Prabakar, and K. Kumar. 2008. Water for All: New Tirupur Area Development Corporation Ltd. (NTADCL) UNDP. Available at

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**Table 2: Water Supply to Tirupur: Comparison of before and after scenarios**

	Before NTADCL	After NTADCL
<b>Number of household connections</b>	43,000 connections were in existence	Planning to add another 25,000 connections, out of which nearly 8,000 have already been added as of March 2007
<b>Frequency of supply</b>	Once in 7 days	Currently on alternate days and will soon move to daily supply
<b>Monthly water tariff for households with water connection</b>	Approximately Rs 350 per month (Please see note below)	Approximately Rs 85 per month (using the same assumptions as in the case of before NTADCL)
<b>Access for poor people without household connection</b>	600 public taps, with the same frequency of supply as the household connections.	The public taps closed, and supply through tankers every alternate day and expecting to move to everyday supply at the earliest possible time. The Tirupur municipality is also expecting progress in regularizing unauthorized layouts (many of the slums are said to come under this category), which legally prevents them from providing household connections in these areas
<b>Cost for poor people without household connection</b>	Given that the public taps were supplying only once per week, there could have been a very heavy dependence on private sources. The cost could be similar to household with water connections. Actual expenses would have been in line with their ability to source from and pay to private suppliers. It is likely that the per capita consumption could have been well below the 90lpcd mark. Precise estimates are difficult and would involve too many assumptions.	Given that there is free supply from municipality through tankers every alternate day, the dependence on private sources must have come down drastically, as evidenced by the near absence of water related agitations in the town after the commissioning of the project. Corresponding to these changes, the cost could have also come down, since the share of supply from private sources would have reduced. For the same reason, per capita consumption could have also improved. Precise estimates are difficult and would involve too many assumptions.
<b>Sewerage Coverage</b>	<b>Before NTADCL</b> No sewerage system	<b>After NTADCL</b> 60% of the population in Tirupur municipality targeted to be covered

**Sources:** UNDP: *Water for All: New Tirupur Area Development Corporation Ltd. (NTADCL)*